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‘Elections, Context, and  
Institutions: The  
Determinants of Rent  
Extraction in High-Income  
Democracies’

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**Dedicated to my grandmothers**

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## Abstract<sup>1</sup>

Why is there significant variation in rent extraction amongst high-income democracies? A large number of political economy investigations into this research question have found that a long period of democratic rule and high per capita income are associated with less rent extraction amongst public policy-makers. However, attempts to explain the residual, yet significant, variation in rent extraction amongst countries that possess both these characteristics have been significantly more circumspect and disputed.

The thesis explores how the distribution of policy-making responsibilities between electorally accountable decision-makers (EDD) and their electorally unaccountable (NEDD) public policy-making counterparts, determines the optimal level of rents extracted in any given high-income democracy context. Specifically, the thesis formally models how: (1) variation in the EDD/NEDD ratio, by altering (2) voters' evaluation of incumbent competency, changes (3) the incentives that policy-makers, wishing to remain in office, have to minimize their short term level of rent extraction in order to signal their competency and hopefully retain office. Given these 'career concerns' the theoretical model predicts that an increase or decrease in the EDD/NEDD ratio will be associated with more or less rent extraction.

This hypothesis is then tested empirically, primarily using an augmented version of Persson and Tabellini's (2003) dataset. Specifically, the thesis tests whether (1) the EDD/NEDD ratio can predict variation in rent extraction only amongst high-income democracies; (2) whether voters, and not just elites, use the EDD/NEDD ratio to update their beliefs regarding the determinants of rent extraction; and (3) whether the EDD/NEDD ratio affects the level of rent extraction, once controlling for other institutional variables (Efficacy of Elections) also associated with variation in voter evaluation of incumbents' competency.

Establishing that the EDD/NEDD ratio does robustly predict variation in rent extraction is a significant finding, as it can enable analysts to predict how changes in policy-making contexts may affect the incentive for good governance in this sub-set of countries. However, the results are (1) exploratory in nature, and also (2) contingent on other factors (regime type and institutional variation), meaning that while significant, they cannot be generalized to non-democratic contexts.

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<sup>1</sup> Word count: 99,200 including estimates for diagrams and tables.

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## **1 Explaining Contextually Induced Variation in Rent Extraction Amongst High-Income Democracies**

Why does the incidence of rent extraction amongst public policy-makers persist, even in stable high-income democratic contexts in which regular elections give voters an opportunity to select senior public policy-makers? Furthermore, why is there significant variation in the perceived incidence of this phenomenon within this sub-set of countries? Can this variation be explained by differences in the nature of the policy-making context, which conditions the ability of voters to incentivize and/or select rent-minimizing policy-makers?

The conditions under which (1) the misuse of public office for private gain (corruption), as well as (2) the manipulation of laws and regulations in order to extort from, or curry favour with, interest groups (rent seeking and rent extraction) become more or less likely, is now the primary motivating objective of a large portion of the positive political economy literature focused on the determinants of good governance. Underpinning much of this literature are two critical and inter-dependent assumptions. Namely, (1) that the ideal preferences of voters (principals-who favour rent minimization) and public policy-makers (agents-who favour rent maximization) may, under certain conditions, diverge; and therefore (2), if agents have some discretionary power then they may have an incentive to exploit this in order to further their own (private) interests at the expense of the interests of voters.

Despite the multiplicity of ways in which public officials may abuse their powers, the consequences of their actions, with respect to the welfare of voters, is usually adverse.

This is mainly due to: (1) the fact that voter priorities (lower taxes, efficient delivery of publicly-financed services) may not be the priority of deviating agents (higher taxes and the diversion of money from the delivery of public services); and (2) the transaction costs associated with such agent preferred activities (resources devoted to lobbying, navigating regulations, coping with market distortions) may result in the generation of societal deadweight costs<sup>2</sup>. Thus, *rent extraction*, which is the shorthand term used in the rest of this thesis to describe all these varied ways in which agents can abuse their discretion, can have potentially substantial consequences for the welfare of the general public. Therefore, marginal reductions in the incentives of office-holders to pursue rent extraction can result in improved voter welfare.

Although the potentially devastating implications of rent extraction have long been documented (see Muller 2003, pp. 333-358 for a review), it has only been in very recent years, with the proliferation of new methods for measuring the incidence of this phenomenon,<sup>3</sup> that theories regarding the determinants of rent extraction have actually been made subject to increasingly rigorous empirical hypothesis testing. While by no means unanimous in their conclusions, the consensus findings of this empirical literature is that the following macro-level characteristics of a polity are robust predictors of a reduced incidence of rent extraction: (1) a long experience of democratic elections and a free press; (2) a relatively high level of socio-economic development; and, to a lesser

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<sup>2</sup> Readers interested in the distinction between corruption and rent seeking should consult Lambsdorff (2003). Readers interested in the distinction between rent-seeking (public policy officials respond to the incentives provided by interest groups) and rent extraction (interest groups respond to the incentives provided by policy officials) see McChesney (1997). There is a huge literature on the dynamic costs of rent seeking (Tullock rectangle), and one recent estimate puts the costs of rent seeking in Western Europe at 7% of GDP (Angelopoulos et al, 2009).

<sup>3</sup> The first comparative and systematic data on the level of political corruption and rents and corruption was compiled by PRS Group beginning in 1986. Other prominent measures include Transparency International's 'Corruption Perceptions Index'-begun in 1995- (data beginning 2011) and the World Bank's Graft indicator-begun in 1998- (2011).

extent, (3) a long history of openness to trade<sup>4</sup>. While these findings are extremely useful in explaining the variation in rent extraction up to a point, especially between (1) less and more economically developed countries and (2) mature democracies and non-democracies, they fail to account for why there also appears to be significant and persistent variation in the level of rent extraction within stable high-income democracies (Persson et al 2003; Kaufmann 2010; see also the next section).

This thesis hopes to contribute towards an explanation of these empirical regularities by developing and testing a new contextually enriched career concerns model of the political economy of public policy-making. This objective is achieved by combining several insights from existing, but disparate, works in tangential fields. Specifically, by bringing together: (1) the substantive enrichment of voters' utility function to take into account how contextual factors (namely the distribution of policy-making responsibility between electorally accountable and electorally unaccountable policy-makers) affect the ability of voters to determine the competency of incumbents (Duch and Stevenson 2008); and (2) nesting this decision-theoretic framework into a career concerns game theoretic modelling framework (Persson and Tabellini, 2001). It becomes possible to derive the full equilibrium effects of changes in voters' contextually determined capacity to evaluate incumbents' competency. That is, this enriched

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<sup>4</sup> See Treisman (2007) for an extensive review and testing of the theories on the determinants of rents and rent extraction. Seldadyo and de Haan (2005), Alt and Lassen (2008), also find several other variables as being very robust in explaining reduced (-) or increased (+) the incidence of rent extraction—namely population density (-), Scandinavian legal origin (-) and ethnic conflict (+) and to a lesser extent literacy (+), primary school enrolment (+), public sector salaries (+), dependence on fuel exports (-), parliamentary form of government (+) and female labour force participation (+). In their study of US states Maxwell and Winters (2004) find that the size of government (+), population size (+), social homogeneity (-) and citizen education and engagement (-) are robust predictors of rent extraction. Glaeser and Saks (2006) using Maxwell and Winters data (2004) but with a less 'noisy' identification strategy find that historical income (-), education (-), income inequality (+) and racial heterogeneity (+) are robust determinants of rent extraction.

theoretical model enables the derivation of how incumbent policy-makers strategically react to contextually induced changes in voter evaluation capacity. This outcome therefore facilitates the possibility of (3) developing and testing new predictions as to how different contexts (distributions of policy-making responsibility) can alter the incentives that incumbent policy-makers have to engage in more or less rent extraction, given how this is expected to affect voters' evaluations of their competency and hence their re-election prospects. This thesis therefore follows the pioneering logic<sup>5</sup> of Tavits (2008) who first tried to apply the insights of the economic voting literature to the issue of rent extraction. However, by formally combining these two literatures and focusing on the role of the distribution of policy-making, it goes considerably further in developing more specific and new hypotheses linking context, voters, and the incentives of incumbents to variation in rents.

More specifically, the formal model developed below can be used to deduce that the distribution of policy-making responsibility between electorally accountable and electorally unaccountable policy-makers, identified as increasing the magnitude of economic voting (voters' ability to identify the contribution of incumbents to economic policy outcomes), may also incentivize a reduction in the level of rent extraction. This is because career concerned incumbents will condition their marginal rate of rent extraction based on how they anticipate voters will react to their actions. As less rent extraction could be a sign of higher incumbent competency, career concerned incumbents who face elections may be incentivized to limit their short-term rent extraction in the hope of signalling to voters that they are of average or above average competency, hence deserve to be re-elected. It is therefore expected that contexts in which more public policy-makers

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<sup>5</sup> Albeit not one that was formalized.

are subject to these incentives will exhibit less rent extraction vis-à-vis contexts in which a smaller number of policy-makers face these electoral incentives. Thus, as the anticipated magnitude of voter reaction is conditional on the policy-making context, it is possible to use the theoretical model to derive predictions of how contextual variation amongst high-income democracies can explain at least some of the variation in rent extraction within this sub-set of countries.

This Chapter is organized so as to demonstrate how by bringing together the insights of recent developments in the economic voting and political economy literature, it becomes possible to derive and test new hypotheses linking contextual factors to variation in rents extracted amongst high-income democracies. This process will therefore extend our understanding of the determinants of rent extraction and motivate the research enterprise undertaken in the rest of this thesis. Section 1.1 of this Chapter describes the extent to which variation in the level of rent extraction exists amongst stable high-income democracies and thereby providing evidence of the ‘empirical puzzle’ that needs to be solved.<sup>6</sup> Having established that cross-country variation in rent extraction exists; amongst high-income democracies the second section (1.2) briefly reviews the classical political economy literature that has sought to explain the determinants of this variation. Having identified the moral hazard and adverse selection assumption behind these theories, and thus the strength of using a career concerns modelling framework (combining both moral hazard and selection assumptions), the third section (1.3) critically reviews the empirical evidence regarding how individual variables may determine the level of rent extraction. This review establishes: (1) the inadequacy of the

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<sup>6</sup> The assumption of rational retrospective voter evaluation assumes the existence of elections and an ability of voters to access relatively costless signals.

most robust macro-level variables in accounting for variation of rent extraction in high-income democracies; and (2) the lack of consensus over how meso- and micro-level variables may account for this variation in rents. This finding therefore provides a rationale for trying to combine existing theoretical frameworks with new substantive assumptions, in order to motivate new empirical hypothesis testing. Section 1.4 is thus concerned with demonstrating how the substantive insights of the economic voting literature can be combined with existing political economy frameworks, in order to realise this objective. Specifically, Section 1.4 critically evaluates (1) how the proposed model, *generally*, builds on the assumptions and findings of the economic voting literature; and (2) introduces the EDD/NEDD ratio as the *specific* critical insight, from the economic voting literature, that is transposed and adapted into a game theoretic framework, so as to derive new hypotheses regarding the determinants of rent extraction. Finally, the last substantive section, Section 1.5, introduces the theoretical framework itself and discusses how it brings together and advances knowledge from both the political economy and the economic voting literature. This demonstrates how by adapting insights of the economic voting literature to address the persistent empirical puzzles that remains unresolved by existing political economy approaches, it is possible to derive and test new hypotheses that can help explain variation in rent extraction within high-income democracies.

## **1.1 Are There Significant Variations Of Rent Extraction In Advanced Democracies? A Comparative Perspective.**

The fact that formal models of political economy, beginning with Barro (1973) and Ferejohn (1986), show that the existence of regular elections does not eliminate rents, and therefore that a democratic context does not necessarily generate incentives for rent-minimization, has been increasingly confirmed by a growing body of empirical evidence Persson et al (2003).

Given that the political economy literature assumes a democratic context, it is essential to identify the extent to which variation in rent extraction persists in stable democracies. Following the precedent of the economic voting literature<sup>7</sup>, this term is ordinarily understood to refer to the sub-set of countries that are identified as stable high-income democracies. Given the traditional preoccupation of much of the rent-extracting literature with the significantly larger variation in levels of rent extraction between advanced democracies and other polities, it is useful to briefly illustrate how a comparative analysis of the variation in the level of perceived rent extraction within advanced democracies can serve to illustrate: (1) the need to better account for this variation; as well as (2) why a comparative approach is useful in testing the theoretically derived hypotheses that seek to explain this variation.

Taking the ‘rich OECD countries’ (World Bank 2010) as perhaps the prototypical group of stable high-income democracies, the strength of a comparative approach becomes evident as it is possible: (1) to show that significant and consistent variations in the levels of perceived rent extraction (rents) exist amongst both elites and voters within

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<sup>7</sup> See for example seminal contributions such as Powell and Whitten (1993) or Duch and Stevenson (2008).

this group of countries (see below)<sup>8</sup>; and (2), to show how a comparative approach can be used to speculate about the possible causes of this variation.

Table 1.01 provides a very simple snapshot of the ordinal variation of rent extraction levels using information from Transparency International’s 2009 Corruption Perceptions Index. The index scores countries between 0 (most corrupt/rent-extracting) and 10 (least corrupt/rent-extracting).

*Table 1.01 Perceptions of Rent Extraction in High-Income OECD Countries (2009)*

Corruption Perceptions Index Score						
Over 9	Over 8	Over 7	Over 6	Over 5	Over 4	Over 3
Denmark	Australia	Austria	Estonia	Hungary	Czech	Greece
New Zealand	Canada	Belgium	France	Portugal	Republic	
Sweden	Finland	Germany	Israel	South Korea	Italy	
	Iceland	Ireland	Slovenia		Poland	
	Luxembourg	Japan	Spain		Slovakia	
	Netherlands	United Kingdom				
	Norway	United States				
	Switzerland					

*Source: Transparency International, 2012*

With the exception of Greece, all high-income OECD countries have a score above four, which is the cut-off point used to distinguish countries with rampant rent extraction from the rest. This outcome suggests that the incidence of extreme rent extraction is limited amongst these polities. However, even if one excludes ‘young democracies’ (Eastern Europe and South Korea), geographical regions (Mediterranean

<sup>8</sup> While often neglected, the fact that variation in rent extraction exists, and is significantly different amongst high-income democracies, has long been a motivation behind empirical work in the field e.g. Persson et al, 2004; Kaufman 2011.

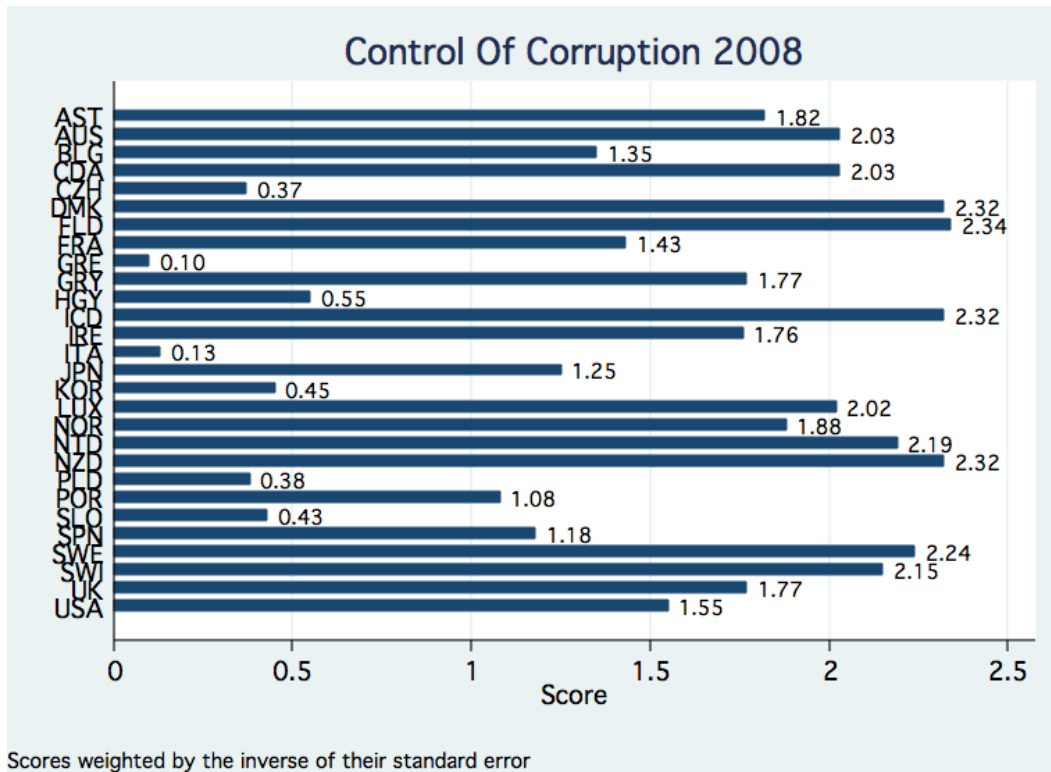
states), and take into account the standard deviation of scores<sup>9</sup>, significant variations in rent extraction persist. For example, France and the USA have significantly lower scores than other stable democracies, while, with the exception of size, it is difficult to explain by recourse to macro-level variables, why New Zealand and Denmark have very similar – extremely low – levels of rent extraction.

Of course, the Corruption Perceptions Index is only one of the most widely used indices that attempts to measure rent extraction. As Diagram 1.01 shows, utilizing the World Bank's Good Governance indicator of rent extraction (Control of Graft) produces a similar pattern of quite significant variation and rankings of high-income democracies. Thus, even though the index, which scores countries between -2.5 (most corrupt) and 2.5 (least corrupt), is similar but by no means identical to the CPI, it produces similar results. The same countries score highest (Denmark, New Zealand, Sweden all scoring in the top percentiles), and lowest scores are once again dominated by Mediterranean (Greece is once again the lowest-scoring country) and East European states. Furthermore, considerable variations exist even within older democracies, with countries such as the USA and France, for example, once again scoring significantly lower than other established democracies.

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<sup>9</sup> This is the case even when using the relatively lax 10% confidence interval. For example, even using the 10% level as the critical cut-off for significance, the CPI score of Denmark and the USA remain significantly different from each other.

Diagram 1.01 Control of Rent Extraction in High-Income OECD Countries (2008)



Source: The World Bank, 2012. Note: scores weighted by the inverse of their standard error.

There is also evidence that these disparities in the levels of reported rent extraction between countries persist over time. As Diagram 1.02 shows, the reported disparities in the level of rent extraction between four well-established democracies (Denmark, France, New Zealand and the USA) are not only substantial at any one point in time, as Table 1.01 and Diagram 1.01 suggest, but also persist over time. This finding, while not necessarily proven, is consistent with the main proposition of much of the institutional political economy literature. Namely, that the level of rent extraction is a function of the institutionally induced incentives that shape voter-office-holder interactions. As institutional change is relatively rare, especially in advanced

democracies, it follows that polities with different institutions (electoral system, form of government, economic policy *modus operandi*) will also exhibit persistent differences in levels of rent extraction<sup>10</sup>.

As will become clear in Section 1.3, the implications of this reported stability of rent extraction across countries<sup>11</sup> suggests that a cross-sectional approach is likely to be the most promising strategy by which to proceed with empirical hypothesis testing. This is because a comparative cross-national approach can exploit the fact that cross-country variations in rent extraction (dependent variable) and contextual configurations (independent variables of interest) exist, thus making identification of the consequences of contextual variation possible.

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<sup>10</sup> This argument of the centrality of institutions in determining rent extraction has been forcefully made, especially by Persson et al (2001).

<sup>11</sup> It is important to note that more narrow indicators of rent-extracting activities (such as prosecution for corruption) may vary more within countries based on sub-national institutional variation. However, as such variables measure the detection/successful prosecution of rent-extracting office holders rather than the actual/perceived level of overall rent extraction they may only be measuring one element of rent extraction rather than the overall phenomenon (Treisman 2007).

Diagram 1.02 Persistence of Disparities: Control of Rent Extraction in Select High-Income OECD Countries (1996-2008)



Source: *The World Bank*, 2012

The perception that rent extraction exists and varies significantly in high-income democracies is not confined to surveys mostly/exclusively focused on experts and elites (the CPI and the World Bank Indicators used above). There is now a large amount of evidence that voters in high-income democracies also perceive variation in the incidence of rent extraction. Specifically, since 2003, Transparency International (2011) has conducted annual surveys of perceptions of rent extraction amongst elites (Corruption Perceptions Index) and amongst voters (Global Corruption Barometer), and has always found a very strong correlation between the two.

This finding is significant, because if perceptions of rent extraction, especially in political life, varied according to which group was surveyed, it could have significant implications in trying to link different types of electoral contexts to variation in the actual incentives that policy-makers have, in order to alter their level of rent extraction. As such, inconsistency in perceptions would raise issues regarding which measure of rent extraction was the most valid and consistent<sup>12</sup>. Fortunately, as the survey results are highly correlated (see Chapter 2), it is not necessary to enter into this discussion.

Table 1.02 shows, using data from the Global Corruption Barometer (Transparency International 2011), that while it is true with respect to everyday life that a representative sample of most voters in high-income democracies do not perceive rent extraction to be ‘a significant problem’ (13.4 % of respondents in high-income democracies perceive a significant problem), this is not the case with perceptions of rent extraction in political life (41% of respondents in high-income democracies perceive a significant problem). Furthermore, just as in the case of the elite based indicators, the relatively large standard errors for these responses (9.6% and 17.6% respectively) suggest that there is significant variation in perceptions of rent extraction across high-income democracies. Thus, while voters may not perceive rent extraction to be a problem on a day-to-day basis, they seem to be aware that in other fields significantly more rent extraction may be occurring.

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<sup>12</sup> Of course the fact that the different surveys come up with similar results only proves that they are consistently measuring the same thing. It could be the case that they are all invalid: measuring the same false perceptions of the level of rent extraction. However, as Chapter 2 explains, this is unlikely as such surveys are strongly correlated with objective (but more narrow) measures of rent extraction.

Table 1.02: Perceptions of Rent Extraction Amongst Voters (2003)

Country	Percentage of Respondents Agreeing that Corruption is a significant problem in...	
	Personal and Family Life	Political Life
Austria	5.5%	55.4%
Canada	42.5%	13.1%
Denmark	5.7%	30.9%
Finland	1.9%	30.7%
Germany	6.6%	54.9%
Ireland	17.5%	58.3%
Italy	15.4%	59.8%
Japan	7.3%	40.8%
Luxembourg	9.7%	31.7%
Netherlands	14.3%	41.2%
Norway	7.2%	27.3%
Portugal	15.2%	55.9%
Spain	19.3%	74.4%
Sweden	6.5%	23.4%
Switzerland	9.2%	34.2%
USA	26.5%	7.1%
UK	10.9%	39.5%
Average (Standard Error)	13.4% (9.6)	41.0% (17.6)

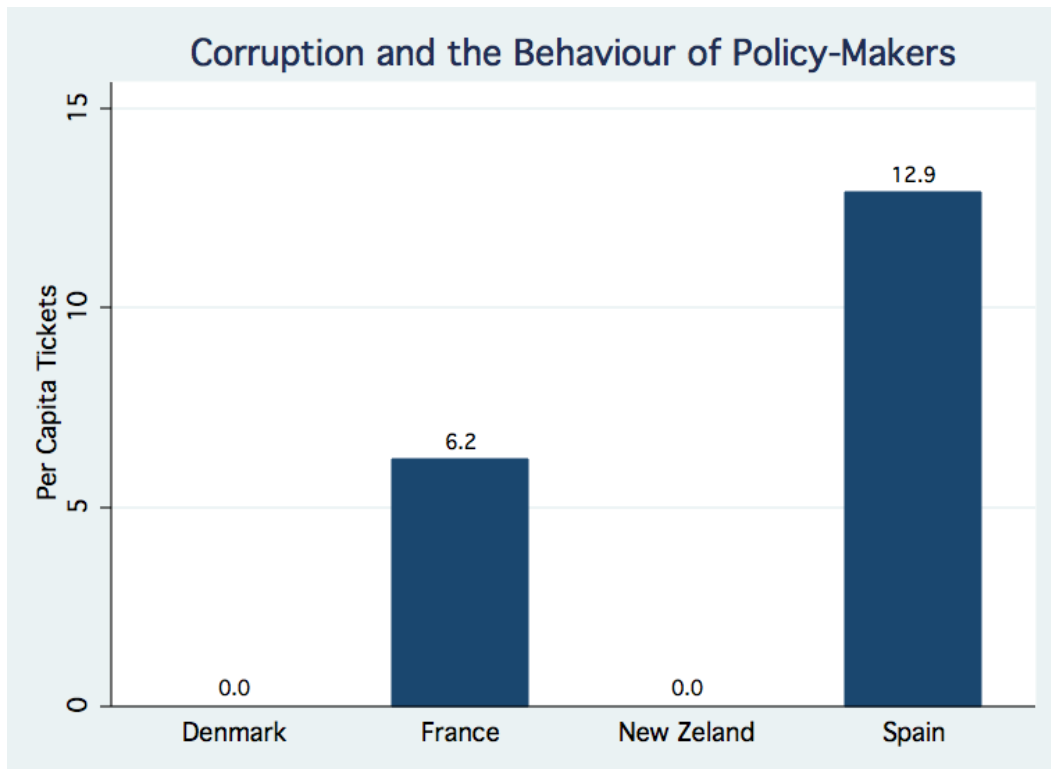
Responses are from 18 OECD countries and samples are weighed so as to be representative of the said countries population. Within each country, the margin of error of the results is +/- 4%.

Source: Transparency International, 2012

Not only is there significant variation in subjective perceptions of rent extraction both amongst elites and the mass public, but these patterns are also evident in objective, albeit more narrow, indicators of rent extraction. Diagram 1.03 shows that the number of per capita tickets issued to diplomats (who are immune from paying parking fines) from different countries based at the United Nations headquarters in New York varies considerably by country (per capita tickets = number of tickets/size of the diplomatic mission). Such a 'narrow' indicator of the propensity of senior policy-makers to violate the law is not necessarily representative of overall levels of rent extraction. However the

diagram shows that Spanish diplomats had twice the level of tickets than their French counterparts, and 12 times the tickets of the Danish and New Zealand colleagues. This significant variation in the number of tickets issued to the diplomats of different countries in conjunction with the high correlation between this variation and the subjective perceptions of rent extraction (see Chapter 2) suggest that there is a significant variation in ‘rent extraction’ amongst high-income democracies that needs to be accounted for. Hereafter, ‘rent extraction’ will be used to refer to both the highly correlated subjective and objective indicators of this phenomenon.

*Diagram 1.03: Parking Tickets Issued to Diplomats in New York (2003)*



*Source: Fishman and Miguel, 2007. No data available for the USA*

## 1.2 The Theoretical Literature (Political Economy)

Before embarking on an analysis of how the insights of the economic voting literature can be used to motivate new investigations into the determinants of rent extraction, it is essential to first critically evaluate the classical political economy literature that has traditionally tried to motivate empirical investigations into this research question. This is because the game theoretic framework this literature utilizes is critical to ensuring that the decision theoretic insights of the economic voting literature can be extended to predict not just voters' actions (magnitude of the retrospective/prospective vote) but also the strategic reaction of incumbent policy-makers, and thereby ensuring the generation of new hypotheses.

This evaluation exercise is also beneficial because there are significant disputes within this literature over what drives public policy-makers to pursue different rent-extracting strategies. Thus, while there is a consensus that a competitive electoral process rarely, if ever, resolves the agency problem (elimination of rent extraction), there is no consensus over the origins of this problem. That is, whether such deviations, from voters' ideal preferences, are primarily due to (institutionally induced) moral hazard<sup>13</sup> or selection<sup>14</sup> mechanisms and/or a combination of both. Given that the consequences of institutional configurations may differ depending on which assumption is made, it becomes essential to clearly establish which modelling assumptions are in fact selected. This will ensure that tractable hypotheses can be generated and tested. In fact, this thesis

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<sup>13</sup> Defined, in the context of rent extraction, as the willingness of incumbents to use their access to public money to pursue their own private agenda because of the relatively low risk of detection and/or punishment (Barro, 1973).

<sup>14</sup> Defined, in the context of rent extraction as either low competency incumbents (who waste public resources) or those who are not altruistic (wish to exploit public office rather than serve their electors) (Besley, 2006).

will adopt a ‘hybrid’ theoretical approach (career concerns model), which assumes the existence of both moral hazard and selection effects. This choice is made because there is now strong empirical evidence to support the existence of both moral hazard and selection dynamics. Therefore, this modelling framework is capable of utilizing the logic of both modelling traditions to generate testable predictions without having to make the restrictive and unrealistic assumption that either moral hazard or selection effects are absent/dominant.

### **1.2.1 Why Institutions Matter: The Limits of Elections in Accounting for Variations in Rent Extraction**

While the incidence of rent extraction has been documented since the earliest of times, much of the post-World War II ‘Public Finance’ literature assumed that public policy-making was made by ‘benevolent’ social planners (Besley and Smart 2006, p.755). While this literature did not ignore the possibility that, even in democracies incentives for corruption and ignorance exist and persist (Pigou, 1920), this literature *did not* consider such pathologies to systematically or significantly affect public policy outcomes. This view was forcefully challenged by the rise of the ‘Public Choice’ agency tradition. This literature formally introduced the assumption that, far from being benevolent, governments are populated/staffed by rationally self-interested actors who will use their power, as public policy-makers, to further their own private interests (Buchanan and Tullock, 1957). Thus, according to this literature, it is entirely reasonable to expect that office-holders may have systemic incentives and a persistent ability to engage in rent

extraction, since they enjoy significant informational advantages over rationally ignorant voters.

The 'Public Choice' approach contrasts with the 'Chicago School' approach. Downs (1957) and subsequent theorists working in this tradition (Posner 1971; Whitman 1989, 1995) who demonstrated that under certain conditions, competition may be able to incentivize policy-makers to bid away any 'super-normal' profits (rent extraction) in order to remain in power. However, Downs (*ibid*) observed that most voters, anticipating their own lack of pivotally-altering electoral outcomes, will be rationally ignorant of policy outcomes – a fact that suggests that rents and inefficiency are likely to persist, even in a context of competitive electoral competition (Acemoglu 2004).

Numerous contributions utilizing the Public Choice approach demonstrate the feasibility that electoral competition could co-exist with non-zero levels of rent extraction. Thus, Tullock (1967) demonstrated how incentives for small groups to acquire information about the effect of regulations and taxes could drive up levels of rent extraction, as such interest groups seek to incentivize office-holders to provide them with rents. Olson (1965, 1981) demonstrated how the free-rider incentive, more pervasive in large groups (voters, taxpayers) than small groups (interest groups) creates a gap between latent and effective demand, that generates incentives for rent extraction and the exploitation of public resources by narrow groups and policy-makers. Brennan and Buchanan (1980) and McChesney (1997) demonstrated that office-holders can use their political power to extract rents and bribes from voters and firms in exchange for not abusing their political power to pass unfavourable legislation. Effectively, the Public Choice approach predicts that over time, even advanced democracies will succumb to the

power of a 'revenue-raising Leviathan', eager to expand the scope of government in order to increase the policy discretion of public officials, and hence the amount of resources such officials can obtain, via rent extraction, in order to alter resource allocations.

Thus, classical Public Choice literature, by introducing the assumption of individual rationality and rational ignorance (on the part of voters), provides a compelling and intrinsically consistent argument as to why the conflict of interest between voters and office-holders is likely to persist, even in advanced democracies. However, despite the explanatory strength of this literature in anticipating the persistence of rent extraction, even in the presence of electoral competition, its ability to explain outcomes is in fact somewhat limited (Besley 2006, pp. 1-3). Specifically, this literature is less able to explain why levels of rent extraction are likely to vary within a relatively homogenous set of countries. If voters are similarly incentivized to be rationally ignorant, and office-holders always seek to exploit this fact, then why do the levels of rent extraction vary within advanced democracies? Theorists working in the principal agent tradition have provided answers to this question by: (1) modelling voter-office-holder interaction in a strategic, rather than in a decision theoretic, manner; and (2) examining how institutions may alter the relative bargaining position of the two actors involved in policy-making. This process, in turn, generates a set of hypotheses that cannot easily be derived from the more decision theoretic (Public Choice) and/or non-institutional (Chicago School) literature. This fact provides a basis for examining how insights from related literature, such as the economic voting literature, can be used to enhance the utility functions of the actors involved in policy-making, and hence derive new testable hypotheses.

### **Principal-Agent (P-A) Models**

The major contribution of the Principal-Agent (hereafter P-A) literature in understanding the incidence of rent extraction, has been to develop a framework that allows for the derivation of testable hypotheses that move away from the limiting assumptions of the classical Public Finance, the Public Choice (decision theoretic) and Chicago School (non-institutional) approaches. Rather, by focusing on how institutions condition the strategic interaction of voters and office-holders, P-A approaches have been able to generate hypotheses regarding how institutional variation should be able to account for observed differences in the level of rents (Besley 2006, pp. 1-34). Thus the P-A literature has the advantage of: (1) allowing the dynamics of the strategic interaction of voters and office-holders to be examined; and (2) demonstrating how institutions may alter the incentives of an actor (office-holder/voter) to pursue a particular course of action. As noted above, there are two contextual and micro-mechanisms via which P-A models predict changes in incentives, and hence policy outcomes: (1) moral hazard (sanctioning) and (2) selection (competency).

### **Moral Hazard Models**

The first major application of the P-A approach in the political marketplace was undertaken by Barro (1973), who demonstrated that under certain conditions (the desire to win elections), rent-maximizing candidates for office could be incentivized to credibly commit to an electoral platform, on which they would be compelled, to bid away any post-election rents by the logic of electoral competition. However, the model showed that elections fail to incentivize good behaviour amongst office-holders who do not seek re-

election. Virtually all-recent moral hazard models build on the seminal contribution of Ferejohn (1986, 1999), who relaxed the assumption that candidates could commit at the pre-election stage. Instead, he showed that by declaring a competency-based re-election threshold (as long as this was not unrealistically stringent) voters could minimize (but not eliminate) rent extraction, by re-electing incumbent office-holders who satisfied this threshold. Thus, Ferejohn (ibid) introduced the important notion of rational retrospective evaluation of office-holders' performance. As retrospective voting required little information gathering of the details of public policy by voters, these moral hazard models were able to demonstrate how elections could, at least partially, mitigate the conflict of interest between voters and office-holders. As such, this contribution demonstrated how elections could be a useful mechanism to mitigate, if not eliminate, rents.

### **Moral Hazard and Context**

The central institutional implication of the moral hazard approach is that voters require information about the absolute performance of the incumbent if they are to minimize rent extraction. Thus, accountability – being able to correctly identify the contribution of each office-holder to a specific public policy outcome – is considered central to determining the level of rents observed. Consequently, if institutionally determined competency signals are noisy, and information about performance is poor, then voters will be unable to generate sufficient incentives that incumbents do not just pursue rent-maximizing strategies (Ferejohn 1986; Persson and Tabellini 2001). Institutions, then, which alter the level of relevant information that reaches voters, should be able to explain variations in rent extraction, according to this literature. Specifically, moral hazard approaches predict

that more information-rich institutional contexts will generate lower levels of rent extraction vis-à-vis more information-costly contexts. However, it is important to note that this accountability mechanism will only be effective if voters can agree on a competency criterion, which they can credibly coordinate on<sup>15</sup>.

### **Selection Models**

If different types of office-holders exist – competent/incompetent or rent-maximizing/benevolent – it follows that forward-looking voters may be able to mitigate the level of rent extraction if they can select candidates for office whose preferences are intrinsically more closely aligned to their own and/or are likely to be able to better allocate resources (minimizing rents due to waste). Besley (2006) provides a good baseline model of how the existence of different types of office-holders may affect voter welfare. In this model, Besley shows that if two types of candidate exist – congruent and dissonant – then elections may have an ambiguous effect on voter welfare. This is because encouraging dissonant politicians seeking re-election to behave as congruent types (pooling equilibrium) may mitigate moral hazard in the short run, but exacerbate adverse selection and rent extraction in the subsequent period. This is because once re-election is no longer a concern, dissonant candidates will be more likely to have survived re-election, and thus be able to pursue rent extraction before leaving office.

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<sup>15</sup> Even in advanced polities a failure to coordinate on a criterion for re-election may effectively result in the lowering of the re-election threshold generating increased rent extraction- as the causes of such a selection failure may be multiple, e.g. high wealth inequalities (USA) or ethno-linguistic fragmentation (Northern Ireland or Spain).

### **Selection Models and Context**

Mechanisms that attract or repel certain types of candidates, such as salary levels or other non-pecuniary benefits, may determine the level of rents in a polity by inducing a certain type of office-holder to seek (re-)election (Hood and Peters 1995; Besley 2007). It may even be possible that the institutional context may be able to provide voters with information about candidate type, in a manner analogous to how they obtain information about candidates' actions in office (Ashworth and Bueno de Mesquita 2009). One of the interesting implications of analysing the selection effect is that if both moral hazard and selection effects exist, the welfare implications of institutional change may be ambiguous, should the two effects work in opposite directions. Thus, Besley and Smart (2006) show that if transparency over office-holders' actions increases the probability that voters will know the type of office-holder in question, then dissonant office-holders may be incentivized to abandon attempts to obtain re-election (exacerbating moral hazard) even as this mitigates the problem of re-electing dissonant office-holders pretending to be congruent (selection effect).

### **Hybrid Approaches: The Career Concerns Models**

The 'career concern' framework was first devised with respect to managers and corporations (Holmstrum 1982, 1999) and is one of a variety of modelling traditions that incorporates both moral hazard and selection assumptions but still generates a set of clear predictions. The model is advantageous because, while being completely consistent with traditional selection models – it is possible for voters to re-elect high-competency incumbents – it does not assume away moral hazard considerations. Therefore, the model

is both more parsimonious and realistic in that it does not have to ignore either one of the major sources of rent extraction, even though, like all formal models, it requires a minimum set of assumptions to hold, in order to generate robust predictions.

The basic assumption of the model (Persson and Tabellini, 2001) is that a new incumbent and her voters do not know the competency of the incumbent at the beginning of her term in office<sup>16</sup>. However, the distribution of competency, and hence the average expected competency, from which the incumbent is drawn is common knowledge. The competency of an incumbent can, however, be inferred over the period of time she is in office. This is because the provision of publicly-financed goods is a residual category generated after tax revenue (exogenously given) is used to generate rents. As long as not all tax revenue can be expropriated for the purposes of rent extraction, voters are better off with a higher competency incumbent being re-elected, even though in her final term in office, the incumbent will have no incentive to pursue anything other than a rent-maximizing agenda. This is because high-competency incumbents will still be able to generate publicly-financed goods more effectively than their low-competency counterparts.

Therefore, given their net present value of remaining in office, determined in turn by their discount rate, ego rents and the variation of the competency distribution<sup>17</sup>, as long as incumbents perceive their expected probability of being average or high competency, they will have an incentive to minimize their rent in the first period. This is due to the expectation that they will be able to signal, from the amount of publicly financed goods generated, that they are of an average or above-average competency.

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<sup>16</sup> Although both she and voters know the distribution of competency from which office holders are selected. More on the substantive reasoning of this assumption see Chapter 3.

<sup>17</sup> See Chapter 3 for details.

In short, elections can work not only to enable voters to retain high-competency incumbents, but also to incentivize a reduction in rent extraction (moral hazard mitigation) Persson and Tabellini (2001). Of course, given that the way in which context condition the ability of voters to use elections effectively to select high-competency incumbents (according to the economic voting literature), it follows that variations in rent extraction may well be explained by variation in the contextually induced efficacy of elections. Thereby, proving a strong rationale for enriching this theoretical framework to take specific contexts into account and thereby generate new hypotheses linking voters, context and incumbent incentives.

### **Hybrid Approaches: The Career Concerns Model and Institutions**

Given that individual effort, which signals innate competency, drives behaviour in the career concerns modelling framework, it is possible to link the magnitude of underlying career concerns to the context in which incumbents make decisions. This is because the policy-making context may determine whether, and to what extent, it is possible for voters to effectively evaluate the actions of policy-makers. For example, Persson and Tabellini (2001, pp. 225-233) have shown, using a career concerns modelling framework, how national versus local and different electoral systems (plurality versus closed list) may affect incumbent incentives and actions, based on their anticipation of the strength of retrospective voter evaluation.

Extensions of such models to other institutions (e.g. form of government) have generally shown (Ashworth 2005, Ashworth and Bueno de Mesquita 2005a, 2005b,

Besley and Case 1995)<sup>18</sup> that the contextually induced ability to hold individual office-holders accountable for their actions, does appear to affect policy decisions in a manner consistent with the career concerns modelling framework. As this thesis will demonstrate, using a career concerns framework in conjunction with recent substantive insights from the economic voting literature (regarding how institutions affect the efficiency of voter evaluation), can build on this existing literature. This exercise will therefore provide a critical evaluation of whether the theoretical assumptions of the economic voting literature can be used, in conjunction with a career concerns modelling framework, to explain some of the variation in rent extraction<sup>19</sup> observed in high-income democracies.

### **Summary of the Theoretical Literature**

The theoretical political economy literature anticipates that (1) if a conflict of interest exists between voters and office-holders, elections alone are unlikely to be able to remedy this (as elections can rarely work on their own to eliminate both moral hazard and selection effects in the absence of additional institutional incentives); and (2) that the contextual variables determining the incentives for punishment (moral hazard) and/or selection by competency/type, can be used to account for variation in the level of rent extraction exhibited within advanced democracies. Consequently, the theoretical literature identifies the requirements for developing an effective model that can be used to predict the determinants of rent extraction in advanced democracies. Namely, (1) the

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<sup>18</sup> It is important to note that other models combining both moral hazard and competency exist (Banks and Sundaram 1993; Austen Smith and Banks 1989; Rogoff, 1990) but the focus here is very much on the body of work that has originated from the classical Holmstrum model.

<sup>19</sup> As Chapter 2 will document in detail rent extraction in high-income democracies is measured in multiple different ways. The most common dependent variable of interest is perceptions of corruption, but others include re-election rates linked to performance, trust in government, relative increase in taxes etc (see Besley, 2006).

model must specify the nature of the conflict of interest between voters and office-holders; (2) how voters and office-holders interact strategically; and subsequently (3) how institutional variation, by altering either the selection and/or moral hazard effect, should generate measurable changes in the incidence of rents and rent extraction. By utilizing a career concern framework, this thesis not only adopts a well-established modelling tradition widely used to achieve (1)-(3) above, but also has the advantage of combining both moral hazard and competency considerations. Thus, it limits the need to make potentially restrictive assumptions about the range of actions and the competency of office-holders, while still generating specific and testable hypotheses.

### **1.3 The Empirical Literature (Political Economy)**

Before proceeding with the review of the findings of the empirical literature, it is important to identify some of the challenges faced by those attempting to test P-A models seeking to explain variation in rent extraction. One of the most serious challenges this literature confronts is the lack of cross-country variation in institutional configuration. This empirical regularity has the effect of making the identification of the consequences of different institutions, independent of other confounding factors, difficult or even impossible to ascertain using a within-country identification strategy. Compounding this problem is the fact that virtually all the major indicators of overall rent extraction have only been available for a relatively short period of time (approximately 15 years) with changes in the methodology used to compile these indicators meaning that, over time, variation in scores need to be treated with extreme caution (Treisman 2007). Therefore given that, (1) institutional variation over time is limited; and (2) the major indicators of

rent extraction are not well suited to measure over time variation; suggest the need to utilize a cross-sectional approach as a basis for hypothesis testing.

However, while the cross-country (comparative) approach has been widely used in the literature, and the nature of the data does make this the most feasible strategy when examining the determinants of overall rent extraction, it is still possible to utilize within-country variation (over time changes in hypothesized incentives for more or less rent extraction) to provide robustness checks for the major findings of the initial cross-country evidence. For example, using convictions for corruption as a dependent variable, and sub-national variation in institutions amongst American states, Alt and Lassen (2008, 2010) have been able to argue that factors such as (1) the increased likelihood of detection and a greater disparity in salary levels between the public and private sectors, and (2) divided government, reduce the likelihood of rent extraction.

Such within-country studies are extremely useful because they reduce the possibility of the results being driven by omitted variable bias (as sub-national units are likely to have more similar characteristics vis-à-vis cross-national units). However, they are limited by the fact that: (1) measures of the detection of one type of rent extraction (e.g. cost of building a road, being convicted etc) are not necessarily capturing or representative of the overall incidence of rent extraction (the impact of lobbying on economic efficiency etc) and are, at best, a narrow element of such phenomena – and (2) external validity concerns may be an issue, e.g. the robustness of the finding that divided government reduces rent extraction within US states may not have the same effect in countries in which a parliamentary form of government exists (Thacker and Gerring 2004). Thus, despite the potential benefit of a within-country approach and the limitations

of its cross-sectional counterpart, a cross-sectional approach is still the best-suited method for examining the determinants of overall rent extraction given the constraints identified above. This is therefore the main strategy used in the rest of this thesis.

Apart from the major issue of whether a cross-sectional versus a within-country approach should be used, another factor, which has to be taken into account when determining the empirical strategy, is the focus on advanced high-income democracies. While only a small number of countries fall into this category ( $n=22$ ) the focus on this sub-set is critical. As the subsequent literature review (see below) indicates, the ability of the most common macro-level variables (identified in the literature as being the most robust predictors of rent extraction – in pooled datasets) to predict variations in rent extraction, are generally less robust when high-income democracies are considered in isolation (see Chapter 2). An empirical regularity, which provides a rationale for the development and testing of the proposed theoretical model which assumes the existence of a high-income democracy context but is still able to predict how changes in meso-contextual variables (namely the distribution of policy-making responsibility) may predict variations in rents.

Furthermore, a broad review of the empirical literature that seeks to explain the meso- and micro-level determinants of rent extraction is needed, because it is precisely these variables that the economic voting literature has identified as being critical in determining the ability of voters to evaluate incumbent policy-makers. Therefore, by mapping the existing empirical findings, it then becomes possible to introduce, in the next section, how new theoretical and empirical insights from the economic voting literature, can serve as a basis for developing a new model linking these meso-variables (the

distribution of policy-making responsibility) to changes in incumbents' incentives. A model that can, via the hypotheses it generates, possibly explain some of the disparate findings in the existing literature.

As noted above, macro-level variables that define high-income democracies – a high per capita income and a well-established democratic context – are the most robust predictors of rent extraction in pooled datasets. However, one major divide in the empirical literature is the fact that such variables cannot explain the statistically significant levels of variation in rent extraction that persist amongst high-income democracies (Persson et al, 2003). This inability, in addition to the failure of existing meso- and micro-level variables (see below) to explain this residual variation, provides a strong rationale for trying to develop new theoretical models of the determinants of rent extraction that can more carefully tease out the micro/electoral dynamics that could be behind this phenomenon. That is, this unexplained variation provides a rationale for using the insights of the economic voting literature, in conjunction with a classical political economy modelling framework, to derive and test new hypotheses that seek to explain unaccounted variation in rent extraction amongst high-income democracies.

**Separating High-Income Democracies Countries from the Rest: Income**

The single most important and robust macro-contextual variable in explaining the incidence of rent extraction is the level of economic development. This is the case using both simple OLS and maximum-likelihood specifications, as well as an instrumental variable approach which controls for institutionally-induced economic growth. As Treisman (2000) have shown, using a large cross-section of countries, the log of per capita income is a very robust predictor of less-perceived rent extraction. This is not just the case with respect to current per capita income, but also past levels of wealth. As Treisman (2007) shows using data on per capita income compiled by Madison (2003), past levels of wealth can predict current levels of rent extraction going back to 1820. Not only is the association robust to the inclusion of other variables, but it also remains robust following tests for exogeneity. Even when controlling for the possibility that institutions may cause at least some of the reduction in rent extraction, as states with better institutions may be able to enjoy both higher living standards and less rent extraction, the independent effect of income persists. Consequently, instrumenting for good governance caused by path dependence – using ethno linguistic fragmentation (Mauro 1995), settler mortality (Acemoglu et al 2001), or a combination of variables (Persson and Tabellini 2003) which may exogenously control for the level of income generated by good institutions – does not, in fact, significantly diminish the independent effect of income per capita on the level of rent extraction (Boix and Stokes 2003).

### **Separating High-Income Democracies from the Rest: Democratisation**

The second most robust finding of the literature is that increments in the level of democratization are associated with fewer instances of rent extraction (Kunicova and Rose-Ackerman 2005; Treisman 2007). This variable is especially robust when the experience of democracy is associated with general stability and the rule of law (Lederman et al 2005; Leite and Weidmann 1997; Park 2003; Shleifer and Vishny 1993). Interestingly, studies of the relationship between democratization and rents suggest the existence of a non-linear relationship between the two variables. Montinola and Jackson (2002) find that the level of perceived rent extraction is more sensitive to changes in democratisation in either highly democratic or highly authoritarian countries, with marginal changes in semi-democracies actually having little effect on the level of rent extraction- a non-linear relationship is also found by Campante et al (2007). There is also evidence that the relationship has a dynamic component to it. Treisman (2000) finds that while continuous measures of democratization over a long period of time are not significant determinants of the current level of rent extraction, a binary specification that takes into account whether a country has been a democracy for more than 50 years is associated with a lower level of rent extraction. Furthermore, there is evidence that voter information is critical in affecting the efficacy of competitive elections. Thus, measures of press freedom, especially when interacting with the level of democracy, have been shown to be associated with reduced perception of rent extraction (Adersa et al 2003).

Given the fact that, at least in stable democratic contexts, there is little variation in regime type, a large literature has sought to examine whether the institutions that

determine *how* official holders are elected, form of government, electoral system, federalism, etc. might be able to explain some of the variation in rent extraction.

### **Meso-Contextual Controversies: Form of Government**

One of the most contentious arguments in the literature regarding the determinants of rent extraction is the effect of the form of government on the level of perceived rent extraction. In their seminal work on the economic effects of constitutions, Persson and Tabellini (2003) found that, when controlling for the level of democracy and OECD membership, a presidential form of government was associated with significantly less rent extraction vis-à-vis a parliamentary modus operandi. However, these results have been widely contested by other studies, which find the reverse to be the case. That is, that a parliamentary form of government diminishes rent extraction (Gerring and Thacker 2004; Lederman, Loayza and Soares 2005; Manow 2005; Panizza 2001). As Treisman (2007) has shown, the results appear to be partly driven by the sample size. Consequently, the mixed evidence regarding the relationship between form of government and rent extraction, and the manner in which these results appear to fluctuate based on the sample and the number of the control variable used, suggests that further and more refined, theoretically derived hypotheses need to be generated and tested if the relationship is to be explained more effectively.

### **Meso-Contextual Controversies: Electoral Systems**

Another contentious meso-institutional variable that has sometimes been associated with variation in rent extraction is a country's electoral system. Chang and Golden (2004), Persson and Tabellini (2001, 2003), and Kunicova and Rose-Ackerman (2005) argued

that the existence of a plurality electoral system significantly reduces rent extraction vis-à-vis a (closed) list proportional representation system because it increases individual accountability. More specifically, while the greater district magnitude of proportional electoral systems coupled with an open list modus operandi works to diminish rent extraction associated with this electoral system, the greater individual accountability induced by a plurality electoral system outweighs both these effects (Persson and Tabellini 2001; Tavits 2008). However, just as in the case of the form of government, there is considerable debate over the validity of these results. Thacker et al 2005 find that proportional electoral systems are associated with less rent extraction and, once again, modifying sample size and/or control variables generates different outcomes (Manow 2005; Panizza 2001; Treisman 2007).

### **Meso-Contextual Controversies: Decentralization**

The extent to which sub-national entities exert control over fiscal spending decisions has also been found to affect the level of perceived rent extraction. Ali and Isse (2003), Fisman and Gatti (2002), Gurgur and Shah (2005), and Lederman et al (2005) find that increased decentralization reduces rent extraction. Conversely, Brown et al (2005), Gerring and Thacker (2004), Goldsmith (1999), and Kunicova and Rose-Ackerman (2005) found a positive association between decentralization and rent extraction. These authors tend to argue that it is the existence of clear and centralized accountability that reduces rent extraction, and that decentralization – by bringing veto players, opacity and common pool problems into the equation – generates more, not fewer, instances of rent

extraction and rents. Once again, the evidence is sensitive to the sample of countries and the controls used (Treisman, 2007).

Aside from *how* voters elect officials, a second set of meso-contextual variables that may be able to explain rent extraction is the nature – or distribution – of public policy-making decisions. Whether and to what extent unelected versus elected officials make policy; how much of a country's wealth is available for public policy-making; the nature of the regulatory environment; and the distribution of wealth, have all been found to affect incentives for rent extraction.

### **Meso-Contextual Economic Controversies: Discretionary Public Policy-Making**

#### **Power**

With respect to the economic rather than the political context, one of the most robust findings is that long-term trade openness (imports and exports/GDP) is associated with fewer instances of rent extraction. This is usually attributed to the fact that open economies reduce the discretionary power of bureaucrats and their political masters to capture rents (Ades and Di Tella 1999). This result is reasonably robust and confirmed by other studies (Gerring and Thacker 2005; Sandholtz and Koetzle 2000; Sandholtz and Gray 2003; Treisman 2000). However, these results have not always been robust to the inclusion of other controls, and the most robust results are obtained by the inclusion of a dummy variable that denotes when a country opened its market to international trade, rather than the use of continuous measures of trade openness (Treisman 2007).

### **Meso-Contextual Economic Controversies: Regulatory Framework and the Size of Government**

There is evidence that the density and complexity of the regulatory environment affect the level of rent extraction. Djankov et al (2002) found that higher levels of rent extraction were associated with more complex regulatory environments. However, these findings have not proved to be exceptionally robust when instrumenting regulatory outcomes with legal origins. As anticipated by Djankov (2002) and La Porta et al (1999), there is evidence that, while common law countries exhibit lower levels of rent extraction when legal origin is used to predict the regulatory environment, the results are not statistically significant (Treisman 2007). Similar attempts to explore whether the size of government is associated with the level of perceived rent extraction have also generated very mixed results (e.g. Tanzi 1999), which appear sensitive to the sample size and measures of democracy. Thus, while Henderson (1999), Goldsmith (1999), and Paldman (2002) find that rent extraction is negatively associated with more economic freedom (larger state) these results are disputed by other empirical investigations that do not find such robust associations (Sandholtz and Gray 2003).

### **Meso-contextual Economic Controversies: Relative Income and Inequality**

As rent extraction is risky, the opportunity cost of losing public office -the comparative salaries in the private sector- may determine the incentives public policy-makers have, to engage in such an activity. Rauch and Evans (2000), Di Tella and Schargrotsky (2003), and Van Rijckeghem and Weder (1997) show that in polities in which public sector

workers are well remunerated exhibit less rent extraction. However, the robustness of this ‘efficiency wage’ finding has been questioned, with some studies finding no robust association (Gurgur and Shah 2005; Treisman 2000). Other studies, focusing on income inequality in general, find that increased inequality in a country is positively associated with more rent extraction (Rose-Ackerman 2004; You and Khagram 2006). However, once again the robustness of these studies has not always been found to be great (Brown et al 2005; Park 2003). Alt and Lassen (2010) find support for both the efficiency wage and the general inequality argument- finding that increased income inequality combined with relatively high public sector salaries (increased opportunity cost of being detected) are associated with less rent extraction.

### **The Overall Message of the Empirical Literature**

The empirical literature suggests that the macro-level context is a very robust predictor of some of the variance in the observed level of rent extraction. Specifically, stable democracies with a high standard of living and long-term trade openness appear to suffer from significantly less rent extraction than other polities. In other words, the main factors that shape the P-A dynamic between voters and incumbents -whether elections take place, and whether voters have the resources and knowledge to effectively participate in them- are robust predictors of variations in rent extraction. However, as the existence of such a relationship does not, in and of itself, resolve the conflict of interest between voters and incumbents. Unfortunately, when it comes to exploring how meso-level political and economic variables affect the level of rent extraction, the results appear to be far more fragile and sensitive to the sample used. Therefore, there is a need to develop a new

theoretical framework that allows for the identification of new independent variables of interest, which can hopefully explain a greater proportion of rent extraction.

#### **1.4 Insights From the Economic Voting Literature?**

Before introducing the proposed theoretical framework itself, it is necessary to explore some of the major existing theoretical and empirical motivational assumptions and findings of the economic voting literature. This exercise makes it possible to ensure that the proposed model's foundations are clearly and logically linked to the relevant assumptions of this antecedent literature, and as a result, demonstrate exactly how the proposed model extends and adds value to the existing state of the discipline. This is a critical endeavour as, if the theoretical assumptions of the political economy and economic voting literature were radically different, it would be problematic to try and merge some of their insights into a new proposed framework motivated by a parsimonious set of consistent assumptions.

It is not uncommon that researchers in one field use the insights of another to try and account for some of the puzzles and unexplained variations in their own field. Insights from the economic voting literature are well suited to be adapted and applied to the issue of persistent and unexplained rent extraction in high-income democracies. This is because both fields make use of some of the same theoretical assumptions, especially the use of a principal-agent framework to capture the interaction of rational voters and elected officials. This makes it easy to modify existing models or theoretical frameworks in one field, to derive and test new hypotheses motivated by findings in the other field.

Specifically, the modelling framework introduced in the next section makes use of the following generic assumptions that are also made by a number of authors in the economic voting literature. Namely: (1) the use of a P-A modelling framework to depict the relationship between voters (principals) and incumbent policy-makers (agents); (2) the rational expectations nature of voter evaluation of incumbent competency; (3) the socio-tropic nature of this evaluation (i.e. voters care about the experience of society versus their own individual experience); (4) the role of institutions in shaping the optimal actions of voters.

The primary substantive aim of the economic voting literature is examining the relationship between voter perceptions of the economy and how these perceptions translate into changes in the vote for elected officials. While theories linking the actions of electorally dependent decision-makers to voters' anticipated/actual behaviour has long been documented (Tibbits, 1933), it has only been in the post-war period, with the advent of mass surveys, that this field has taken off (major initial contributions include Campbell et al (1960), Key (1966), Stigler (1977))<sup>20</sup>. Despite this growing volume of empirical findings and common theoretical underpinnings (voter rationality), the amount of formal and explicit cross-fertilization between the economic voting and positive political economy field focused on the determinants of rent extraction have been surprisingly limited (Tavits, 2008). This lacuna as well as the common set of assumptions identified above and discussed below in more detail therefore, provides a logical basis for developing a new modelling framework that makes use of the insights emanating from

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<sup>20</sup> increased computer power and data collection have also resulted in a rapid increase in the volume of literature which has seen the volume of papers on economic voting increase from approximately 200 papers in 2000 (Lewis-Beck and Steigmair, 2000), to approximately 300 by 2006 (Lewis-Beck and Steigmair, 2007).

both these respective fields<sup>21</sup>. The assumptions the proposed model shares with the economic voting literature are:

**General Modelling Assumptions.** The theoretical model developed below assumes, like much of the traditional political economy literature, that voters and incumbent policy-makers strategically interact in a two-stage principal-agent game- in which incumbent policy-makers choose their level of rents (first stage) in anticipation of voters' reaction (second stage). In the proposed model, voters are generally assumed to prefer lower rents and use the level of rent extraction to infer competency (selection effect). As the incumbent does not know her own competency at the beginning of the game, she is incentivized, under certain conditions, to pursue a rent minimizing strategy in order to secure re-election (moral hazard effect).

While focused on a very different substantive field (economic policy versus rent extraction) the theoretical micro-foundations of the economic voting literature makes many of the same fundamental assumptions. Namely, the economic voting literature also assumes: (1) a principal-agent dynamic exists between voters and incumbent policy-makers, and (2) there is an assumption of homogeneity with respect to voters' preferences: they wish to see economic performance optimized just as voters wish to see rent extraction minimized (Lewis-Beck and Stegmaier, 2008)<sup>22</sup>. However, as will be elaborated below, the economic voting literature rarely if ever explicitly formally models

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<sup>21</sup> Given that the aim of this review is to examine the extent to which the proposed theoretical framework is consistent with some of the major assumptions in the field the literature review is not exhaustive. Readers interested in a more general review of the theoretical and empirical findings of this literature should consult the Introduction of Duch and Stevenson (2008).

<sup>22</sup> It is not controversial to assume that virtually all voters want a better economy and similarly mostly all voters want less rent extraction (at least in the abstract).

the relationship between voters and policy-makers- that is how changes in voter actions (magnitude of economic voting) might alter the strategy of policy-makers (work harder/shirk etc). Making it difficult to predict how changes in the economic vote may strategically alter incumbent behaviour.

Furthermore, like the political economy literature, the economic voting literature does assume that voters may (1) try to establish a credible re-election threshold rule (moral hazard minimization e.g. Hibbs 2006) and/or select a competent incumbent (selection effect), in order to reward/punish and/or select policy-makers (e.g. Scheve, 2004). In either case, an incumbent will only be elected if a certain outcome is observed/credibly committed to. With some notable exceptions e.g. (Duch and Stevenson, 2008), and in sharp contrast to the political economy literature, this P-A dynamic is usually introduced into the economic voting literature via the descriptive 'Responsibility Hypothesis' rather than via formal derivation. At its simplest this hypothesis simply asserts that 'voters hold government responsible for economic events' (Wlezien and Twiggs, 1997, p35).

However, despite the lack of formalization, it is important to note that much of the economic literature does cite the canonical generic principal-agent models as motivating their empirical agenda (e.g., Anderson, 2007). This common theoretical motivation is crucial because it means that if the same underlying logic of causal mechanisms motivates empirical research in both the economic voting and political economy fields, it should be easy to test whether independent variables found to affect the magnitude of economic voting also affect the magnitude of rent extraction. That is it will be possible to

transpose the arguments linking context and voter actions to a more general situation in which incumbent reactions are also analyzed.

While the use of the same underlying assumptions is the critical first step in building the theoretical framework proposed in the next section, the second is to ensure, both procedurally and substantively, that the assumptions about voter preferences used to motivate the proposed model can also be traced to their economic voting literature antecedents. Two further assumptions from the from the economic voting field are therefore central considerations: (1) whether voters are prospective or retrospective in their evaluation (procedural assumption); and (2) whether voters are concerned with the general welfare of all voters (socio-tropic assessment) versus their individual welfare.

**Rational Expectations.** The model developed in this thesis assumes that voters evaluate the actions of the incumbent not only to assess her past performance and/or competency (retrospective evaluation), but also as a guide to her future competency (prospective evaluation). This ‘rational expectations approach’ therefore combines both retrospective and prospective elements and is a critical assumption because it allows the proposed model to sidestep the debate, in the economic voting literature, that assumes *either* retrospective (Fiorina, 1981) *or* prospective (Nadeu et al, 2002) motivational assumptions<sup>23</sup> - a dichotomy that tends to introduce unrealistic restrictions regarding voters’ behaviour in many of these works. Especially as there is now enough empirical evidence to suggest that both types of evaluation may exist simultaneously (Lewis-Beck and Paldam, 2000). Therefore, the rational expectations approach adopted below, which

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<sup>23</sup> The point that rational expectations combines both retrospective and prospective evaluation- as voters use past performance to evaluate the desirability of re-election as well as to forecast future performance is well made by Besley (2006).

combines both retrospective and prospective elements, is not only more parsimonious (has fewer restrictive assumptions) but is actually the one most consistent with the empirical facts. The growing popularity of this assumption can be seen by the fact that a growing sub-set of the economic voting literature have adopted it rather than the assumption of either retrospective or prospective evaluation (e.g. Duch and Stevenson, 2008).

**Individual versus Socio-tropic Evaluation.** The theoretical model developed below relies on the assumption that voters re-elect incumbents based on the latter's overall level of rent extraction (effect on society as a whole) versus their individual experience of rents expropriated by the said incumbent. This is a particularly critical assumption as voters in high-income democracies may have little personal experience of rent extraction. However, voters may be able to detect the extent to which certain incumbents engage in rent extraction via their behaviour towards lobbies, the special interest legislation they enact, or their involvement in a corruption scandal. Generally, the empirical evidence from the economic voting literature suggests that, while both types of assessment, individual and socio-tropic, exist, voters tend to make a socio-tropic assessment of the economy, especially the unemployment rate, when deciding to re-elect an incumbent (Lewis-Beck and Paldman, 2000). Thus, there is good precedent for assuming that voters will care about the rent extracting activities of incumbents even if they are not directly affected.

**Institutional Micro-Foundations:** The main value-added of the theoretical model developed below is that it enriches an existing formal theoretical model linking voters' ability to assess an incumbent's performance and/or competency to variation in context (specifically the distribution of policy-making between electorally accountable and electorally unaccountable decision-makers). Like the political economy literature, the economic voting literature has increasingly turned to contextual and institutional factors in order to explain variation in the level of the economic vote across different polities and/or over time.

As Hibbs (2006) showed, with respect to sanctioning (moral hazard) models, if outcomes are a function of both incumbent actions and exogenous factors (variables outside the incumbent's control-such as the making of policy in complex coalition governments) then, as the ratio of such exogenous factors increases the magnitude of sanctioning will be more limited, as rational voters anticipate that a greater proportion of outcomes are not due to the actions of the incumbent, will not reward/punish her disproportionately. A similar logic, of modelling contextual factors as 'noise generating/reducing' has also been applied to selection models. Stigler (1973), Meltzer (1989) and Rogoff and Sibert (1989) have argued that if voters use current performance as a signal of competency, and hence future performance, then the greater the (contextually induced) noise in decision making (greater role of exogenous factors), the less voters can infer about an incumbents competency from current outcomes.

These formal discussions have motivated empirical work that has sought to analyze how context affects outcomes (the magnitude of the economic vote). In their seminal contribution to the field, Powell and Whitten (1993) demonstrated that institutions, which

promote ‘clarity of responsibility’ (less noise- that is it is easy for voters to correctly attribute actions to the relevant policy-maker) – made it increasingly possible, for voters, to distinguish between elected officials responsible/not responsible for economic outcomes. Therefore, different institutional contexts could, according to the authors, robustly predict the magnitude of the economic vote as voters in context in which correct attribution was greater would be more inclined to reward/punish incumbents for their tractable actions vis-à-vis more opaque settings. That is, in countries with a high clarity of responsibility, the magnitude of the economic vote should be higher than in the case of low clarity of responsibility contexts (see also Anderson (1995), Whitten and Palmer (1999), Nadeau et al (2002), Samuels, (2004), Tillman, (2007). To generalize, authors in this field have identified a set of institutions that may enhance or diminish the ‘efficacy of elections’ (hereafter EoE). That is the extent to which the institutional context (combination of institutions) increases or diminishes the ability of voters to evaluate incumbents’ performance and/or competency via the way in which they distribute responsibilities amongst electorally dependent decision makers.

These insights are significant because this volume of work suggests that the insights from the economic voting literature linking institutions to voter evaluation can easily be used as a basis for examining how context, by changing voter evaluation capacity, may also alter the strategic incentives of incumbent policy-makers. Therefore, providing solid theoretical micro-foundations for the proposed model that links voter evaluation capacity to the strategic incentives of elected officials.

**Portability.** Given the similarities between the motivating assumptions of the economic voting literature and its political economy counterparts (focused on the determinants rent extraction), there is a surprising lack of cross-fertilization between the two Tavits (2008). While some authors have tried to import the insights of the economic voting literature on the determinants of attitudes to the EU (see Chapter 5 for details), there has only been one major attempt to do so with respect to illicit activity – specifically corruption – undertaken by Tavits (ibid). In this paper, Tavits explicitly motivated her argument using the assumptions of ‘clarity of responsibility’ literature<sup>24</sup> to make the case that increased clarity of responsibility, as measured by independent variables generated by the economic voting literature, should reduce the level of rent extraction as it is easier for voters to observe and punish rent extraction by incumbent policy-makers.

Although pioneering, Tavit’s approach is not clearly motivated by a systematic formal analysis of how clarity of responsibility may alter the strategic incentives of policy-makers via its effect on voter evaluation capacities. Therefore, while her results are interesting, it cannot be established, via the narrative she provides, whether the logic of her argument holds formally. That is whether there is in fact a rent-minimizing equilibrium. Furthermore, while Tavits (ibid) does focus on the role of institutions she does not explore the effect of the distribution of policy competences amongst electorally accountable and electorally unaccountable policy-makers. A critical omission that may alter or add to her findings linking policy-makers incentives to changes in rent extraction. As this distribution has been found to affect the magnitude of the economic vote (Duch and Stevenson, 2008). Therefore, by starting with a rigorous formal approach and linking this to specific contextual variables, this thesis is able to adapt Tavit’s empirical strategy,

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<sup>24</sup> Directly invoking Powell and Whitten (1993) as well as subsequent work e.g. Powell (2000).

but is better able to motivate and identify additional hypotheses, linking voter evaluation, to context and policy-makers incentives in a novel manner.

In summary, because of many common assumptions made, especially regarding how voters and incumbents interact, analyzing the insights of the economic voting literature suggests that it is not unreasonable to investigate whether factors that affect the magnitude of the economic vote might also affect the incentives of incumbents to alter their level of rent extraction. Thus, the next section outlines the *specific* portable elements of the economic voting literature, which will be ‘imported’ into a classical political economy modelling framework in order to account for variation in rent extraction.

#### **1.4.1 Recent Advances in the Economic Voting Literature: The EDD/NEDD Ratio and its Theoretical Underpinnings**

One recent contribution to the economic voting literature is the Duch-Stevenson (2008) model of contextual economic voting. Like the clarity of responsibility literature, this model is focused on explaining how contextual factors (the nature of economic policy-making, government formation and operation) condition the economic vote. Unlike this literature, the Duch-Stevenson model does not assume that voters do not have information about what is happening in public policy-making. In fact Duch and Stevenson assume that voters are rational and fully informed about the nature of policy-making (the policy-making roles of incumbents, distribution of exogenous effects etc.). In the baseline Duch-Stevenson model, which builds on the seminal work of Alesina and Rosenthal (1995), voters wish to elect/retain incumbents who are perceived as being competent. In this model, economic outcomes are the function of two factors: the

competency of the incumbent and exogenous shocks to the economy. Voters are only able to observe the ‘equilibrium outcome’ of these two factors. However, while voters cannot observe the individual action of incumbents, they do know the variance of both the competency distribution from which incumbents are drawn, as well as the variance distribution of exogenous shocks. As such, voters are able to solve a well-defined signal extraction problem that produces a competency signal.

This theoretical framework enables the Duch-Stevenson model to derive very specific hypotheses regarding the conditions under which voters will be more/less able to extract a signal of the incumbents’ competency, which would then determine the magnitude of the economic vote. Generically, the Duch-Stevenson model anticipates that (1) as the variance of exogenous factors (determined by contextual parameters) increases/decreases relative to the variance of the competency of incumbents; (2) rational voters will be less/more able to deduce the competency of the incumbent; and hence (3) the magnitude of retrospective evaluation will decrease/increase.

In order to operationalize and test these implications of the model, Duch and Stevenson (2008, pp.129-140) introduce two critical actors involved in policy-making: Electorally Dependent Decision (EDDs) makers, ‘comprising the national government and the bureaucracy that is responsible to them’ (ibid, p.139); and non-electorally dependent decision-makers (NEDDs), which is ‘everyone else, whose decisions might impact the economy, including individuals, firms, interest groups, non-electorally dependent (entrenched) bureaucrats, foreign leaders, the WTO and more’ (ibid, pp.139-140). It is important to note that while many scholars before Duch and Stevenson had tacitly examined the political economy outcomes of different ratios of elected and

unelected actors (e.g. Cameron, 1978; Katzenstein, 1985; Rodrik, 1998) the explicit formalization of this ratio was first undertaken by Duch and Stevenson. The ratio of EDDs/NEDDs has clear testable implications within the competency model proposed by Duch and Stevenson. Namely, as the ratio of EDDs/NEDDs increases/decreases, the competency/exogenous shocks variance increases/decreases, thereby increasing/decreasing altering the competency signal voters receive, and hence increasing/decreasing the magnitude of the economic vote.

Duch and Stevenson (ibid, pp.131-209, 287-336) show that the EDD/NEDD ratio, as well as the way it interacts with electoral institutions (which affect voters' strategic considerations) is used by voters to deduce the competency of elected officials and is robustly associated with the magnitude of the economic vote in the manner anticipated by the theory. Therefore the EDD/NEDD ratio provides a potentially useful independent variable of interest that can predict the magnitude of retrospective evaluation of incumbents; not just for economic policy but also, possibly, for rent extraction.

Before introducing the formal modelling framework, it is essential to outline how the use of the EDD/NEDD ratio, in trying to account for variation in rent extraction, differs from its original use by Duch and Stevenson (2008). Like the original Duch-Stevenson model, the theoretical framework proposed, enriches rational voters' utility function to take into account context (the EDD/NEDD ratio) and thus anticipate voters' ability to identify the competency of the incumbent. However, the theoretical framework differs in one critical respect: that, like most of the classical political economy literature, it is concerned with the 'full equilibrium' or *strategic effects* of context on the voter-incumbent dynamic. That is, it is concerned with analyzing how changes in voter

evaluation affect not only voter action, but also incumbent reactions. Thus, while the Duch-Stevenson model is decision-theoretic (concerned with showing how context influences the ability of voters to infer the competency of an incumbent), the proposed model below goes a step further and examines not only how context influences voters, but how this then influences incumbents who anticipate the behaviour of voters.

This theoretical extension builds naturally from the P-A assumptions in much of the literature. Using a game theoretic rather than a decision theoretic approach has an important effect on the hypotheses derived, as well as their operationalization and subsequent testing. Given that most of the relevant P-A games are sequential – that is, the players move in turns – the most common solution concept used to solve such games is backward induction. This requires that the first player condition her actions by ‘looking down the decision tree’ and anticipating the consequences of her behaviour on the actions of the second player. In the case of rent extraction, EDDs officials are hypothesized to set their level of rent extraction before the election, to take into account how increments in rents will adversely affect their re-election prospects (voter reaction in the second stage). This is because context (EDD/NEDD ratio) determines the ratio of policy-makers who face this dilemma or are otherwise insulated from the electoral cost of rent extraction (NEDDs). It is therefore possible to develop specific predictions about how variation in the EDD/NEDD ratio will incentivize policy-makers in anticipation of voters’ reactions.

Specifically, this game theoretic set-up enables the derivation of two distinct hypotheses. Firstly, EDD policy-makers will be more reluctant to engage in rent extraction versus insulated policy-makers (although this result will only hold in democratic contexts); secondly, perception of rent extraction amongst voters regarding

the overall level of ‘political’ rent extraction, will vary with the EDD/NEDD ratio (as a higher EDD/NEDD ratio will incentivize more policy-makers to desist from rent extraction in order to secure re-election). This two-stage test is a logical extension of the original focus of the Duch-Stevenson (ibid) and economic voting literature in general, and of the impact of context on the magnitude of voter reaction to incumbent behaviour.

Ideally, it would also have been good if the operationalization and testing of the ‘voter component’ of the hypotheses derived by the model occurred in the same manner as Duch and Stevenson’s (2008) formalization. That is, using individual level survey data of voter perceptions of rent extraction before and after an election. However, due to the limited reliability of over time variation in perceptions of rent extraction noted above, a cross-sectional identification strategy is used instead. Specifically, this strategy entails a two-stage test. Namely, (1) examining whether elite behaviour is perceived as varying with the EDD/NEDD ratio (only in democratic contexts; strategic behaviour of incumbents in the first stage); and (2) seeing whether voter perceptions of rent extraction are also predicted by variation in the EDD/NEDD ratio (anticipated behaviour of voters in the second stage).

Having identified that (1) the rent-extracting literature remains unable to explain a significant amount of variation in rent extraction, (2) that the economic voting literature is motivated by similar theoretical assumptions, and therefore, cross fertilization is possible; and (3) finally that the recent work on the EDD/NEDD context can be adapted to a game theoretic setting, it is now possible to proceed with a formal introduction to the framework.

## **1.5 A Contextual Rational Choice Theory Of Rent Extraction in High-Income Democracies**

The objective of this thesis is to bring together recent advances in (1) the economic voting literature – specifically the effect of the EDD/NEDD ratio on voter evaluation and selection capabilities; with (2) an examination, via a P-A inspired game theoretic framework, of how such changes, in the EDD/NEDD ratio not only induce changes in voter evaluation capabilities (second stage effect) but can also alter the strategic incentives of incumbents to pursue different levels of rent extraction (first stage effect). While the two literatures from which these insights are drawn have a different substantive focus (rents versus economic performance) and subject of interest (strategic behaviour of incumbent policy-makers versus decision theoretic behaviour of voters) this cross-fertilization is both possible and, as will now be explained useful in deriving new hypotheses.

How can the insights, and hence strengths, of these different contributions be combined? By using the common assumptions of rationality as a basis for bringing together the most successful and complementary elements of these major contributions of this literature, it becomes possible to formally develop a new theoretical model (proposed model) and by extension new testable hypotheses. As Table 1.03 illustrates, the proposed model takes some of the critical insights from each of the major contributions identified above, and brings them together in a new framework.

Specifically, the proposed theoretical model utilizes (1) the game-theoretic set-up of the political economy adapted career concerns model of Persson and Tabellini (2001), enabling the behaviour of both voters and incumbents to be analyzed; (2) the formal

substantive insight of how the distribution of policy-making responsibility affects voters' evaluation capacity as developed by Duch and Stevenson (2008); and (3) the operational logic of Tavits (2008), which links independent variables of interest derived from the insights of the economic voting literature to the issue of rent extraction.

*Table 1.03: The Proposed Model and Its Antecedents*

Contribution	Formally Modelling the strategic interaction b/w voters and incumbents?	Formal enrichment of the utility functions of voters to take context (EDD/NEDD ratio) into account?	Tests whether findings from the economic voting literature apply to the issue of rent extraction?
<b>Persson and Tabellini (2001)</b>	Yes	No	No
<b>Duch and Stevenson (2008)</b>	No	Yes	No
<b>Tavits (2008)</b>	No	No	Yes
<b>Proposed Model</b>	Yes	Yes	Yes

*Source: The Author*

Specifically, the model brings together different strands of the literature in the following ways:

**Theoretical Foundations.** The proposed model assumes, like virtually all the P-A literature, that voters and incumbents strategically interact with each other in a sequential form game. That is, incumbents make policy (first stage) and voters then make a decision as to whether to re-elect the incumbent or replace her with another policy-maker drawn from the same distribution of potential incumbents (second stage). This allows the model, once substantively enriched with the insights of the economic voting literature, to not only (1) formally derive the contextually relevant conditions under which voters can more or less effectively evaluate incumbent performance (the traditional focus of the economic voting literature); but also (2) how this contextually-induced variation in voter

evaluation will affect the strategy (level of rent extraction) of the incumbent policy-maker in the first stage of the game (the traditional focus of the P-A literature).

Therefore, while based on the classical career concerns approach (Persson and Tabellini, 2001) the proposed theoretical model departs from the existing P-A literature by introducing more sophisticated theoretical micro-foundations regarding voter choice in the second stage of the game – an addition which has the potential effect of altering incumbent incentives in the first stage. In this case, the model is enriched to take into account how specific contextual variables, the EDD/NEDD ratio, can affect the ability of voters to evaluate and select incumbent policy-makers. The Duch-Stevenson model (2008) demonstrated how the EDD/NEDD ratio can affect voter evaluation of incumbent performance, with respect to the economy. The proposed theoretical model generalizes this substantive insight so that it is possible to derive not just voters' actions but also incumbents' strategic reactions as they are conditioned by context.

This is a critical contribution, because despite the fact that Duch-Stevenson model assumes voters are rational and wish to select the most competent policy-maker to remain in office, their decision-theoretic set-up means that the potential change in the incentives faced by policy-makers, associated with changes in voter evaluation, cannot be directly and formally derived or tested using their original framework. Therefore, by utilizing the career concern framework, which links the desire of voters to select the most competent policy-makers with incumbents' incentives, it becomes possible to derive the full equilibrium implications of the Duch-Stevenson model without changing their basic theoretic assumptions (that is, voters are rational and wish to retain only competent policy-makers).

In short, by formally nesting the enriched micro-foundations of the Duch-Stevenson model (2008) into a more general strategic model (career concerns framework) it becomes possible to develop new insights into the determinants of rent extraction. The cross-fertilization enables the career concern model to make new substantive predictions regarding the effect of context on policy-makers' incentives, which cannot be derived from its generic format. This approach also enables the full implications of the Duch-Stevenson model to be formally derived.

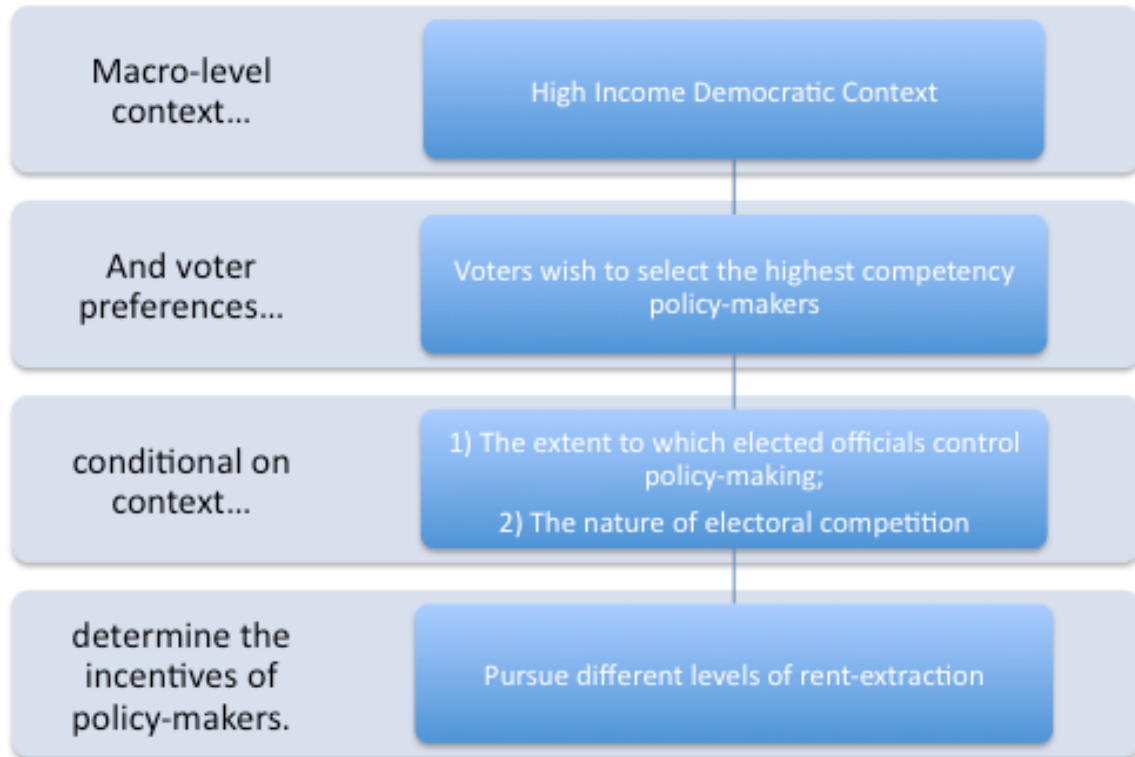
**Empirical Operationalization.** As discussed in the previous section the adaptation and application of the substantive insights of the economic voting literature to the issue of rent extraction was first undertaken by Tavits (2008) who used a similar independent variable of interest utilized by much of the clarity of responsibility literature (especially, Powell 2000) to examine whether increased clarity of responsibility could account for variation in rent extraction. The logic of the operationalization and testing of this thesis proceeds in the same manner as Tavits but uses a different independent variable of interest, albeit one also drawn from the economic voting literature. Specifically, the EDD/NEDD ratio (independent variable of interest), is operationalized and used to determine whether it can account for variation in rent extraction (dependent variable of interest).

This thesis also departs from the methodology of Tavits (2008) in that the empirical analysis is clearly derived from rigorous theoretical underpinnings. This is a critical change, because like much of the economic voting literature, Tavits (ibid) does not examine whether her arguments, linking institutions to voter information and hence to

policy-makers behaviour, can be derived formally. It therefore makes it difficult to test her theoretical arguments in more than a very rudimentary manner. This is particularly pertinent because, as Duch and Stevenson (2008) have shown, some of the arguments made by the clarity of responsibility literature (that certain contexts make it difficult for voters to attribute responsibility) can be explained by the inability of voters to deduce the individual contribution of a policy-maker from the average contribution of policy-makers due to context, rather than an inability of rational voters to know who is responsible for what (which may be unrealistic in a high-income democracy setting). Thus, the formal derivation of the testable hypotheses really enables a more nuanced testing of the links between context, incentives and outcomes.

Therefore, combining the logic of the above-noted arguments allows for the development of the proposed game theoretic and substantially enhanced model. The logic of the proposed model is quite simple, and effectively summarized in Diagram 1.04. Specifically, the proposed model assumes that: (1) if voters can, to different extents, correctly detect and attribute the level of rent extraction undertaken by different policy-makers (P-A insight); and (2) this ability to correctly attribute activities to policy-makers varies according to contextual factors (primarily the EDD/NEDD ratio) (Duch and Stevenson insight); then (3) voters in contexts where correct attribution is greater, will be able to punish/reward and/or select incumbents for their actions with a greater probability; and, therefore, (4) this fact may create incentives for policy-makers, anticipating the magnitude of contextually-induced evaluations to alter their behaviour (level of rent extraction) in anticipation of the possible punishment/reward they anticipate from voters given this behaviour (new hypothesis).

Diagram 1.04: The Logic of the Theory



Source: The Author

Specifically, the proposed theoretical model is driven by the strategic concerns of incumbent politicians and voters. In the first period of the game, voters and incumbents are assumed to not know the competency (ability to deliver publicly-financed goods and services at a given cost) of the incumbent. Intuitively, newly-elected policy-makers do not have experience of running the ‘ship of state.’ It is also common knowledge that all incumbents – irrespective of their competency – would ideally wish to maximize rent extraction. The model’s predictors are driven by the fact that voters will only re-elect average or above average competency office-holders, even if they are rent-maximizing in the second period. This is because higher competency officials will still deliver more

publicly-financed goods efficiently vis-à-vis their less competent counterparts. Under these conditions, the policy-making context will determine: (1) how many rents/public goods are generated by elected officials, and therefore the expectations voters will have of an official's ability to deliver goods efficiently in the second period (the expectation effect); and (2) the value of ego rents associated with maintaining office, which will incentivize office-holders to pursue either short-term rent-minimizing (value of ego rents increases) or short-term rent-maximizing (value of ego rents declines) strategies.

The model is enriched with the substantive insights of the Duch Stevenson model (EDD/NEDD ratio) in order to be able to derive and hence critically examine how aspects of the policy-making context may alter the incentives incumbent face to peruse different levels of rent extraction. Specifically, the empirical analysis of the model tests the following hypotheses:

**Equilibrium Outcome.** Does the way in which policy-making tasks are divided between electorally accountable decision-makers (EDD) and electorally unaccountable decision-makers (NEDDs) affect the overall level of rent extraction? The model predicts that as the EDD/NEDD ratio increases, the level of rents in a polity will decrease because voters will expect to observe fewer (political) rents as a greater proportion of policy-making is undertaken by elected officials seeking re-election (or those effectively accountable to them) and therefore, more likely than NEDDs, to pursue a strategy of short-term rent minimization in order to signal sufficient competency to be re-elected/maintain their job by pleasing those seeking re-election. The corollary to this hypothesis is that the EDD/NEDD ratio will be less efficient at predicting bureaucratic and petty rent extraction (more likely to be

undertaken by NEDDs), as the absence of elections will limit the incentives NEDDs have to pursue any level of rent minimization in order to please voters .

**Validation Check 1.** While a robust association between the EDD/NEDD ratio and the level of (expert/elite) perceptions of rent extraction is the first step in determining the utility of the theoretical framework. Indeed given that business people, academics etc. are more likely to suffer/participate or be aware of rent extraction at the senior political level, it may be the most valid indication of the model's expectations. It is possible to go further. Specifically, the micro-mechanisms of the model posits that a higher EDD/NEDD ratio is associated with less rent extraction, because *voters'* ability to use the EDD/NEDD ratio to deduce the competency of incumbents and therefore whether to re-elect them. Therefore, examining whether voter perceptions of rent extraction, and not just elite perceptions, can be explained by the EDD/NEDD ratio becomes a critical validation check of the micro-mechanisms of the theoretical model.

**Validation Check 2.** While focused on how the nature of policy-making responsibility between EDDs and NEDDs affects incentives for policy-makers to vary their level of rent extraction, other institutional variables have also been associated with changes in the magnitude of the economic vote (see Section 1.4). Therefore, if the theoretical model is correct, it may be the case that such institutions, which condition how EDDs make decisions amongst themselves, may also affect EDDs incentives to vary their level of rent. Specifically, as discussed in Section 1.4, the electoral system and the form of government, determine the 'efficacy of elections' (EoE)- defined as the extent to which voters can identify the

actions and/or competency of EDD decision-makers. As incumbent EDDs can anticipate the extent to which their actions and/or competency can be revealed given the institutionally induced EoE it follows that such institutions may shape their incentives in addition to the effect of the EDD/NEDD ratio. That is it is logical to assume that the level of rent-minimization is a function of both the EDD/NEDD ratio (proportion of policy-makers who are electorally accountable) and the EoE (how EDDs make decisions amongst themselves). Therefore, by examining whether the interaction effect of the EDD/NEDD ratio and an index of institutional variables associated with increased EoE reduce rent extraction, it becomes possible to provide an additional test of how robust the proposed model is.

In summary, the combination of the generic game theoretic career concerns model and the substantive insights of the Duch-Stevenson findings, generates a set of new hypotheses that can be used to test how context, specifically the EDD/NEDD ratio, can potentially account for at least some of the variation in rent extraction amongst high-income democracies.

### **1.5.1 Why High-Income Democracies?**

The logic of the theory outlined above suggests, that the policy-making context in which elections take place is a critical factor in explaining variation in rent extraction. However, when testing the model, the focus is very much on what are defined as high-income democracies, rather than democracies in general. There are several reasons for this. Firstly, while much of the economic voting literature is also concerned with the role of context in elections in general, tests of its efficacy have been focused on high-income democracies (e.g. Powell and Whitten, 1993; Duch and Stevenson, 2008). While this focus may have been due to the lack of data availability, the desire to replicate the results, with respect to rent extraction, means that the same sample of countries is used. Secondly, the link between effective democratization and elections is intricately linked with socio-economic variables (Lipset, 1959). Therefore, given that the institutionalization of democracy is robustly associated with socio-economic development, and in the absence of a well-established distinction between high-income and other democracies, it is not yet entirely clear how these two macro-variables interact with each other there is good, a priori, reason in selecting another sub-set of countries as a preferred dataset. Thus this thesis focuses its analysis on the same sub-sample of ‘high-income democracies’ used in the seminal contributions of the economic voting literature.

### **1.5.2 The Challenge of Institutional Complementarities**

The core research objective of the theoretical model outlined above is to determine how the EDD/NEDD ratio incentivizes some public policy-makers to alter their marginal

propensity to engage in rent extraction. When trying to empirically test such a research agenda it is particularly important to take into account (control for) the fact that the effects (incentives) that institutions generate may not work in isolation, but rather as part of a cluster (matrix) of interconnected institutional configurations. As these interconnected institutions may work to complement or detract from the efficacy of each other, it is, critical that their relationship is properly understood and controlled for. This is because in order to ensure the validity of the empirical analysis, it will be necessary to first control for the conditional effect of the institution of interest, given the cluster of other existing institutions.

One particularly important body of work, which can help identify how clusters of institutions might affect each other, is the ‘Varieties of Capitalism’ framework developed by Soskice and Hall (2001). At the core of this framework is the notion that different clusters of institutions may work in tandem with each other to reinforce a certain type (variety) of capitalist system. The two most paradigmatic – although not necessarily exclusive – varieties of capitalism<sup>25</sup> which emerge from this analysis are: (1) Liberal Market Economies (LMEs), which are characterized by free-market contractual exchanges between firms, individuals and public policymakers; and (2) Coordinated Market Economies (CMEs), in which political coordination of firms and individuals under a publicly-maintained corporatist cluster of institutions facilitates strategic coordination within a political marketplace. The critical underlying logic of this framework, which has been empirically tested (Hall and Gingerich, 2009), and is

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<sup>25</sup> See Hall and Gingerich (2009), p.459 for a brief discussion on the existence of a Mediterranean or uncoordinated statist approach variety of capitalism.

pertinent to the research agenda herein, is the importance of the inter-connectedness of institutions in affecting outcomes Hall and Thelen (2008, p.10).

With respect to incentives for rent extraction by policy-makers, one particularly important dynamic between institutions that needs to be taken into account is how the role of peak interest group involvement in public policy-making might condition the effect of elections in altering the marginal propensity to engage in rent extraction<sup>26</sup>. The economic voting literature has already shown that increased corporatism (interest group involvement in public policy-making) depresses the magnitude of the economic vote (Duch and Stevenson 2008). Unsurprisingly, given the shared underlying assumptions, the model developed below (Chapter 3) also anticipates that as corporatist institutions proliferate, there would also be an expected increase in the marginal propensity for public policy-makers to engage in more rent extraction, as elections become a less powerful incentive for career concerned politicians.

In short, the model and its precursors posit that there is a ‘trade-off’ or substitutability between electoral accountability and a more corporatist *modus operandi*. However, because in such a corporatist framework, the peak organizations making public policy, in conjunction with public policy-makers, may have detailed information about public policy-makers’ actions, and may, because of their all encompassing nature share voters’ preferences regarding rent extraction, they may be able to incentivize a reduction in rent extraction. This in turn may, partially or wholly, compensate for the declined efficacy of elections in minimizing incentives for rent extraction. In short, the

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<sup>26</sup> This was a point also noted by Olson (1982, pp. 89-92) who used an analogous argument to explain why rent extraction might be mitigated by the involvement of peak interest groups in policy-making: this would limit the policy-making power more narrow interest groups might have, in order to incentive rent extraction.

conditionality of institutions may render it difficult to determine, *a priori*, their joint-effect.

Given the fact that the focus of this thesis is the analysis of the independent effect of electoral accountability, once the effect of institutional interconnectedness has been controlled for, the existence of any such institutional clusters does not directly affect the formulation of the research agenda (theoretical model). However, the existence of institutional interconnectedness does suggest that, in order to identify this independent effect of an institution when testing the theory in practise, it is critical to control for the existence of any such inter-institutional conditionalities (confounding effects).

It may well be the case, then, that coordinated political economies can compensate for a lack of electoral incentives by making public policy-makers more accountable to peak interest groups that share the voters' preferences for less of rent extraction. However, the model developed herein is focused on examining the role of elections once these institutional dynamics are controlled for. Thus, independent of whether coordination mitigates or exacerbates rent extraction, it should be the case that increasing/decreasing the insularity of public policy-makers alters the level of rent extraction, via the incentives generated by elections, as expected by the theoretical model. Therefore, in every empirical operationalization of the model, every effort will be made to ensure that the theoretical expectations hold true, even when taking into account how other institutions may condition (substitute/complement) the incentives for rent extraction amongst public policy-makers generated by elections. However, the basic logic of the model and subsequent research agenda does not have to be significantly modified due to the existence of interrelated institutional effects.

## **1.6 The Organization of This Thesis**

The rest of this thesis is organized so as to effectively facilitate the research agenda outlined above. Chapter 2 critically defines what is meant by rent extraction and reviews the efficacy (validity and reliability) of the main indicators used to measure this phenomenon. Therefore, by evaluating the metrics of rent extraction, the Chapter provides a basis for operationalizing the dependent variable of interest (level of perceived rent extraction). The Chapter concludes that both Transparency International's 'Corruption Perceptions Index' and the World Bank's 'Control of Corruption' indicators are valid measures of the phenomenon (rent extraction) under study. Furthermore, some of the more narrow subjective and objective indicators of rent extraction can be used as robustness tests of any initial results. However, as the Corruption Perceptions Index is possibly slightly more specifically focused on measuring rent extraction amongst elected officials, vis-à-vis the Control of Corruption indicator, this measure will be the primary dependent variable of interest (although results using the Control of Corruption as well as other valid measures of rent extraction are reported in Appendix B).

Having critically evaluated the metrics of rent extraction, Chapter 3 proceeds with the task of developing a formal model whose aim is to explain the causes of variation in this phenomenon across high-income democracies. The proposed model is an extension of Persson and Tabellini's (2003) work on career concerns and incumbent incentives, modified to take into account the logic and assumptions of the Duch-Stevenson model regarding voters' behaviour in different contexts (variations in the EDD/NEDD ratio). Substantively, the model shows that changes in the policy-making context affect the

absolute level of equilibrium rents that office-holders have an incentive to extract. Consequently, the Chapter generates a set of implications that can be operationalized as hypotheses, and tested empirically.

Following the refinement of the concept of rent extraction and the derivation of testable implications emanating from the model, the second part of the thesis is concerned with critically evaluating the testable implications of the model.

The first theoretical prediction of the model, which is tested in Chapter 4, is whether changes in the public policy-making context have an impact on the incentives for rent extraction. Public policy-making context, here, being the ratio of decisions made by elected public policy-making officials and the bureaucrats they control, relative to the number of decisions made by electorally unaccountable bureaucrats and interest groups. Specifically, the theoretical model predicts that an increase/decrease in this ratio will produce higher/lower levels of rent extraction, as the threshold for re-election will be higher/lower and will have a predictable effect on the actions of office-holders (less/more rent extraction). This is the case using both elite-based surveys of rent extraction (CPI and CC) as well as public opinion data.

Chapter 5 provides an alternative and complementary validation test of this hypothesis. Using survey data on the perceptions of rent extraction amongst voters (rather than elites) in EU member states the Chapter demonstrates that: Firstly, the national EDD/NEDD ratio can predict voter perceptions of the average level of rent extraction, as the model would suggest. That is a higher EDD/NEDD ratio is associated with less perceived rent extraction. Secondly, the national EDD/NEDD ratio cannot predict perceptions of rent extraction at the EU level. An outcome that would be expected, as EU

policy-making is constant across EU member states and cannot, therefore, be correlated with the national EDD/NEDD ratio (which varies considerably amongst member states). In short, the Chapter establishes that voters' behaviour is consistent with the rational expectations assumptions of the model. Namely, that voters use the relevant EDD/NEDD ratio to make predictions about the level of average rents generated by a given institution (positive test); but voters do not use the EDD/NEDD ratio of one institution to predict the level of rents of another institution (with a very different EDD/NEDD ratio)(negative test). Thereby, providing robust proof of the theoretical micro-mechanisms of the model.

The second complementary test of the model, which is examined in Chapter 6, is whether the interaction between the EDD/NEDD ratio and other institutions associated with a greater economic vote (the efficacy of elections- EoE) generate results consistent with the theory. If elections alter the level of retrospective evaluation, it follows that the existence of institutions, which enhance the economic vote, and a higher EDD/NEDD ratio, should be jointly associated with the greatest reduction in rent extraction. Testing whether this is the case clearly provides additional and complementary proof of whether variation in rent extraction is in fact driven by the overall magnitude of voter evaluation.

Finally, the thesis concludes with a critical review of the findings as well as an analysis of future avenues of research. Consistent with the theoretical predictions of the model and the P-A literature at large, the thesis demonstrates the fact that the determinants of rent extraction are different in high-income democracies relative to other countries and that insights from the economic voting literature-linking context to voter evaluation can account for some of this unexplained variation. It is, therefore, important that future analyses of the determinants of rent extraction (1) should separate the two

groups of countries, and (2) continue to model and test hypotheses linking contextual and institutional variables not traditionally associated with the positive political economy literature to the strategic behaviour of policy-makers and voters.

## **Section 1**

Variation in rent extraction persist in countries even when they are both relatively wealthy (high-income) and established democracies. Thus, even though these two factors have long been identified, theoretically and empirically, as being the most robust determinants of rent extraction, they fail to account for the persistence of statistically significant variation in rent extraction amongst this sub-set of countries. Attempts to explain this variation, via the development and testing of new theories, focused on how meso-and micro-level variables may affect rent extraction have produced mixed results. Therefore, a lacuna remains in the literature. Given the growing sophistication of the economic voting literature, especially with respect to how context and institutional factors may affect voters' ability to deduce competency, it therefore, becomes possible to model how the actions of policy-makers may be affected by their anticipation of voter's reaction, which itself is a function of context and institutions. The next two chapters seek to provide the essential basis for developing and operationalizing this research agenda.

The next chapter, Chapter 2, is concerned with critically evaluating: (1) whether it is possible to measure rent extraction effectively, (2) which (valid) measure of rent extraction is most likely to capture variation in the incentives of electorally dependent decision-makers, and finally, (3) demonstrating whether the ability of most, theoretically and empirically, robust determinants of rent extraction in pooled and non-high-income democracy datasets can explain much of the variation in the sub-set of countries that are classified as high-income democracies. By establishing (1) that valid cross-sectional comparative data on rent extraction is available, (2) that certain of these measures,

especially Transparency International's Corruption Perceptions Index and the World Bank's Control of Corruption indices, are likely to be more effective than others in capturing perceptions of political rent extraction, and (3) that the major determinants of rent extraction in pooled and non-high-income democracies fail to account for statistically significant variation rent extraction; the feasibility and usefulness of the proposed research agenda is firmly established.

Having established the potential viability of the research agenda, Chapter 3 is concerned with developing a model of the political economy of public policy-making that can be used to derive a set of new hypotheses regarding the determinants of rent extraction in high-income democracies. By utilizing (1) a generic career concerns model to derive the game theoretic implications of how elections affect incumbents' incentives to pursue different levels of rent extraction, in conjunction with (2) the substantive (contextual) factors identified by Duch and Stevenson (2008) as affecting the magnitude of retrospective voter evaluation, it becomes possible to (3) generate a set of new testable hypotheses regarding how variations in context can affect the incentives incumbent policy-makers have to pursue more/less rent extraction. This process then establishes the basis for the Second Section of the thesis, which is concerned with testing these theoretically, derived hypotheses.

## **2 Measuring and Accounting for Variations in Rent Extraction Within High-Income Democracies**

Before even considering what the determinants of rent extraction are, it is first and foremost important to ensure that it is possible to operationalize and measure this dependent variable of interest. The overarching concern of this Chapter is, therefore, to critically evaluate the different measures or indicators of rent extraction that might logically be used, in conjunction with a baseline empirical specification strategy, to test subsequent theoretically derived hypotheses, regarding the determinants of rent extraction (especially in high-income democracies).

The main objectives of this Chapter can be subdivided into two discrete tasks. The first is to critically review the strengths and weaknesses of different objective and subjective indicators of rent extraction, in order to identify an appropriate set of potential dependent variables of interest. This objective is achieved by using the standard criteria of validity and reliability in order to discriminate between these potential indicators. Having identified a set of valid and consistent dependent variables of interest, the second major objective of the Chapter is to use these dependent variables in conjunction with the insights of the existing literature, to identify a baseline estimation strategy that can be used as a starting point in the subsequent theoretically motivated empirical analysis. Specifically, by bringing together (1) the dependent variable of interest, (2) a vector of existing explanatory variables (identified in Chapter 1 as shaping the principal-agent dynamics between voters and elected officials); and (3) identifying the correct

distributional and sensitivity analyses required to run robust regressions, this Chapter is able to show that, empirically, the existing explanations of the determinants of rent extraction are not able to account for a large portion of variation in rent extraction, at least in high-income democracies. This exercise subsequently provides a justification for the development of the proposed theoretical model (Chapter 3) enabling the derivation of (1) new hypotheses linking the distribution of policy-making responsibility to variation in the levels of rent extraction, as well as (2) the specification and estimation of the baseline regression models used in the empirical chapters (Chapters 4-6) to test these new hypotheses.

More specifically, this Chapter critically reviews the validity, consistency, and substantive focus of the following indicators of rent extraction: (1) The Corruption Perceptions Index (CPI); (2) The Control of Corruption Governance Metric (CC); (3) The Government Effectiveness Governance Metric (GE); (4) The Global Corruption Barometer; (5) The UN Survey of Crime Trends; and (6) evidence on the propensity of diplomats from different countries to break the law (hereafter ‘Tickets’). The Chapter finds, consistent with the large literature in the field, that the aggregate survey-based indicators of rent extraction, especially the CPI and the CC, despite some important reservations and limitations, are the most valid measures of the magnitude of overall (political) rent extraction. In every case, though, initial results using one indicator should be crosschecked with the use of the other valid and reliable indicator, as there are some minor differences between how the two indicators are constructed, and in practice it is difficult to establish, *a priori*, which indicator is marginally more efficient. Furthermore, despite a more narrow focus, because comparative information on the tickets data is also

available, it is also possible to cross check the results of these subjective indicators with this objective (but more restricted) measure of objective cross-national rent extraction.

As such, the rest of this thesis reports the results using the CPI in the main body of the text but, where relevant, the results using the CC as well as the Ticket's data are also reported in Appendix B. Furthermore, and as appropriate, the thesis uses other more narrow measures of rent extraction as additional robustness or sensitivity checks, to strengthen the confidence of any initial findings<sup>27</sup>. In short, this Chapter is critical because it provides both a justification for the subsequent theoretical model (the need to explain persistent variation in rent extraction), and the basis for operationalizing and testing these hypotheses (identifying the dependent variable as well as a vector of appropriate control variables).

The Chapter proceeds as follows: the next section, Section 2.1, is a discussion of the main strengths and weaknesses, in terms of validity and reliability, of using the subjective-based versus the objective-based indicators of rent extraction to measure the dependent variable of interest. Section 2.2 is concerned with reviewing, in detail, the five major indicators of rent extraction, which have to a significant extent been found to be valid and reliable measures of this phenomenon, and therefore providing the final criterion: substantive focus on political rent extraction for selecting the dependent variable(s) of interest (in this case either the CPI or the CC). Section 2.3 then examines the extent to which these indicators are (1) correlated – indicating the consistency of their measurement of the same underlying latent variable; and (2) can be combined, using principal component analysis, into a composite measure of rent extraction – suggesting that they are in fact measuring the same underlying phenomenon. The fact that all the

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<sup>27</sup> These findings are either reported in the text or in Appendix B.

valid indicators load very robustly onto a single principal component increases confidence in the reliability of these measures. The final substantive section, Section 2.4, uses the CPI data (and alternatively the CC and Tickets; see Appendix B), in conjunction with a vector of control variables identified in Chapter 1, to demonstrate empirically that a large variation in rent extraction amongst high-income democracies, but not the pooled dataset, remains unexplained by these variables. This exercise therefore provides: (1) a need to develop a theoretical model that can generate new hypotheses that might be able to account for this variation; as well as (2) a baseline estimation model which can be used in conjunction with these new theoretically-derived independent variables of interest, to test the robustness of this proposed theoretical framework.

## **2.1 Measuring Rent Extraction: The Costs and Benefits of Using Survey Based Indicators**

In order to operationalize and test the research agenda of this thesis, it is this necessary to identify a valid and reliable measure of (political) rent extraction. That is, to identify a dependent variable of interest that has the following characteristics: (1) it is *substantively* focused on measuring rent extraction undertaken by elected officials and those (easily) accountable to them (*validity criterion*); and (2) it consistently measures this outcome across national contexts and/or across time (*consistency criterion*).

Broadly, attempts to measure rent extraction can be divided into two major categories: (1) objective indicators – which use ‘real’ data (costs, materials used, etc) to calculate the magnitude of waste and abuse in public works and/or services; and (2) subjective indicators – which use survey data (of experts/elites/the public) to try and

measure the perceptions and/or experience of rent extraction by different groups (county specialists, business people, voters etc.). Indicators from both categories have distinct strengths/benefits and weaknesses/costs and, as will be argued below, the most appropriate type of indicator depends on the research question of interest.

Given that the focus of this thesis is on trying to account for variation in ‘political’ rent extraction in general rather than in one specific policy domain, it will now be shown that the composite subjective measures of rent extraction are the most appropriate sub-set of indicators that can be utilized as a dependent variable. This is because, despite being based on perceptions, the major subjective indicators are highly correlated with more narrow objective indicators, as well as outcomes associated with rent extraction (trust in government etc), making it difficult to argue that objective indicators enjoy a ‘validity-based’ comparative advantage. More critically, subjective indicators also enjoy a comparative advantage, in that: (1) they are focused on overall levels of rent extraction, rather than a narrow sub-set of rents (e.g. rent extraction associated with bridge building etc); and (2) they are more readily available and reliable with respect to measuring cross-sectional variation in (perceived) rent extraction, thus enabling cross-sectional regression analysis to take place. This is very important, because the independent variables of interest (national level policy-making context) do not vary considerably within countries as much as they do across countries, making identification outside a cross-sectional research framework problematic.

However, despite this comparative advantage of subjective indicators, objective indicators can still act as complementary robustness checks of any initial subjective-based results, thereby increasing confidence in these initial results as valid and reliable. By

critically examining the comparative benefits and costs of subjective and objective indicators with respect to their (general) validity and reliability, it becomes possible to justify this strategy<sup>28</sup>, as follows.

### **2.1.1 The Costs and Benefits of Subjective Indicators**

**Validity (Benefits).** Proponents of subjective indicators argue that despite methodological challenges, survey-based indicators can generate *valid* data regarding the magnitude of rent extraction. Via careful survey design and crosschecks, it has been possible to ensure real perceptions are captured and the results of invalid survey instruments can be identified and marginalized via the construction of composite indicators (see next section). These arguments have been confirmed by empirical evidence. As such, indicators have been found to be robustly correlated with changes in outcomes theoretically associated with more/less actual rent extraction, such as economic growth (Mauro, 1995, 1998) or trust in government (Sandholtz and Koetze, 2000). These findings make it difficult to argue that just because subjective indicators do not measure revealed preferences, they are necessarily too flawed/noisy to be measuring what is actually occurring in practice.

In addition, subjective indicators have the advantage of capturing the complexity and interaction of different actors involved in rent extraction. Thus, the perception of policy-makers, stakeholders and ordinary citizens can be documented, and the associations, or lack thereof, between the responses of these actors can be used to test

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<sup>28</sup> The issue of which subjective indicator is most substantively focused on electorally sensitive rent extraction is addressed in the next section.

theories in a manner that more narrow and objective indicators of outcomes cannot, because they are focused on one policy domain/type of rent extraction<sup>29</sup>. Therefore, as long as they are valid, such survey-based instruments can be useful when testing theories that assume the strategic interaction of actors, such as the relationship between voters and elected policy-makers. This advantage of survey based indicators in capturing the complexity of policy-making has even been acknowledged by proponents of objective indicators (Golden and Picci, 2006) who recommend the continued use of subjective indicators when the research question is focused on broad or cross-sectoral rent extraction, something which cannot easily be gauged by objective indicators focused on more narrow types of misappropriation.

**Validity (Costs).** Despite the ability to undertake careful survey design and crosschecks, there is always the risk that subjective indicators can be problematic. Unlike objective indicators, they are not capturing the ‘costly to fake’ real actions of policy-makers (e.g. different prices for medical supplies (Gray-Molina et al, 2004), cost/quality of road building (Olken, 2009), or the behaviour of policy-makers (Fishman and Miguel, 2006)). That is, subjective indicators do not quantify what has actually occurred but rather what is perceived or assumed. This may be particularly the case if survey respondents have an incentive to strategically misrepresent their perceptions of rent extraction, or are simply not able to recall their experiences accurately due to perception biases (Bertrand and

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<sup>29</sup> For example, when testing whether a more electorally accountable policy-making context reduces rent extraction, because of anticipated electoral reaction it is possible to use both elite perceptions – that may capture the magnitude of bribes key stakeholders have to make – as well as voter perceptions. This not only allows the testing of the equilibrium outcome – variation in elite bribes accounted for by the policy-making context – but also the micro-mechanisms of the theory. Do voters’ perceptions of the magnitude of rent extraction also vary by context? While it is theoretically possible for objective indicators to provide a measurement of actual rent extraction, they tend to be focused on one policy area and cross-national data and voter experiences tend to be limited/non-existent.

Mullainathan, 2001). However, as noted above, the fact that the composite indicators of rent extraction are highly correlated with objective outcomes theoretically associated with rent extraction, means that the magnitude of this problem should not be exaggerated. Empirically, as Kaufmann et al (2007) have shown, the major composite indicators of rent extraction are highly correlated with objective measures, especially when the standard errors of both are taken into account. This makes it difficult to argue that the subjective indicators are seriously flawed to the point that they cannot predict the actual behaviour of officials.

**Reliability (Benefits).** Proponents of subjective indicators argue that they can provide consistent cross-sectional information on rent extraction. By asking the same questions over time and across countries, to similar/the same target groups of respondents, subjective indicators have ensured that there are reliable datasets of perceptions of rent extraction amongst different groups (voters, policy-making elites etc.) in a large number of countries. This is obviously critical when undertaking comparative work that requires the existence of consistent measures across countries and/or time, in order to ascertain how variation in institutions, across countries, affects variation in rent extraction.

**Reliability (Costs).** Of course, survey-based indicators also face challenges. Composite indicators, such as the CPI, CC, and GE, require the use of multiple sources in order to identify and mitigate the effect of non-representative survey results. Unfortunately, this means that, over time, the indicators are unlikely to use the same sources to arrive at a given country's score. Thus, while using these indicators cross-sectionally is not a

problem, their consistency over time is more questionable and such comparisons are generally discouraged (World Bank, 2012; Transparency International, 2012). However, the use of survey-based instruments for cross-sectional purposes has been shown to be robust, especially given how the large datasets allow for the inclusion of a large vector of control variables, and therefore have been extensively used in the empirical literature (see Persson and Tabellini, 2003).

### **2.1.2 Objective Indicators**

**Validity (Benefits).** The single biggest advantage of objective indicators of rent extraction is that they measure observed actions/outcomes and can thus quantify the abuse of public office for private gain. For example, Olken (2009), and Gray-Molina et al (2004) were able to quantify the extent to which resources devoted to road projects were actually diverted by public officials, and Fishman and Miguel (2006) were able to record the extent to which officials abused their diplomatic immunity. In short, the objective measures are able to provide a ‘real number’ that captures the magnitude of abuse of public office for private gain, in a way that subjective indicators may not.

**Validity (Costs).** Despite being able to come up with numerical values, the validity of objective indicators is not unproblematic. A particularly pertinent issue is that of external validity (Transparency International, 2012). Many of the objective indicators measure only one narrow type of activity (e.g. road construction or abuse of parking tickets), which are not necessarily representative of across the board rent extraction; that is the average propensity of policy-makers to abuse their powers across policy fields. Even

more problematically, objective indicators may not always be easy to interpret. For example, does a high bribery rate denote high rent extraction or a zero tolerance of bribes and an efficient criminal justice system (Lambrsbroff, 2006)? Even when comparative objective data is available, then, the narrowness of the outcome measured and/or the difficulty of interpretation can make it difficult to argue that, in reality, the data is measuring the average propensity of rent extraction (Fisman and Miguel, 2006).

**Reliability (Benefits).** To the extent that objective indicators are measuring the same outcome across countries and/or time, they can be reliable. This is especially the case in natural experimental settings in which other factors are exogenous. Examining, then, how many tickets diplomats from different countries accrue in the same time period and legal framework can yield a reliable cross-sectional dataset that isolates this behaviour (propensity to abuse diplomatic privileges) while holding many other factors constant (same legal status and location).

**Reliability (Costs).** Objective indicators can be problematic if the contexts in which measurements are made are different and/or change over time. Comparing the cost of bridge building across countries, and then using this to infer the propensity for bribes and/or waste may yield unreliable results if all other factors that determine costs are not identified and controlled for. This fact makes it problematic to develop a cross-sectional dataset that captures variation in rent extraction in different policy-making contexts, or even in the same country over time. While very detailed objective indicators of rents, with respect to large infrastructure projects, have been developed within specific national

contexts (e.g. Olken, 2009, for Indonesia, and Golden and Picci, 2006, for Italy), developing comparative indicators for all countries can be unreliable because of the sensitivity of costs to a large number of other variables that cannot easily be identified and controlled for.

### **2.1.3 Using Objective Indicators As a Complementary Robustness Check?**

As the discussion of the comparative costs and benefits of subjective indicators vis-à-vis their objective counterparts suggests, the costs and benefits of each type of indicator may act as a check on the weaknesses of the other type of indicator. Specifically, subjective indicators may be able to measure more broad types of rent extraction, but then it should be the case that, if they are valid, they will be highly correlated with narrower, objective indicators of rent extraction. Unsurprisingly, given this observation, and despite the continued and lively debate in the literature, (see Tresiman, 2007, for a review), there is a growing consensus that both types of indicators can be valid, consistent, and can provide cross-checks for each other. This is because a growing number of research projects have found that, ordinarily, objective and subjective indicators of rent extraction usually correlate quite strongly with each other, especially if the standard errors of both are taken into account (Kaufmann et al, 2007). Thus, initial scepticism towards subjective indicators are misplaced (e.g. Olken (2009)).

Of course, given the large number of good (valid and consistent) objective and subjective indicators available, it is essential to select the indicators most suited for the research question at hand using *substantive* criteria, i.e. what type of rent extraction is being measured. By identifying the indicator which is most likely to capture the type of

rent extraction most pertinent to the research question, it is not only possible to test theoretical predictions but also hypothesize about how other valid indicators might be associated/not associated with the independent variable of interest. This discussion will therefore allow indicators of rent extraction to be identified and used as either: (1) robustness tests of the results (use of different but substantively similar dependent variables); or (2) placebo tests – checking that the independent variable cannot predict a dependent variable that is, substantively, focused on a different type of rent extraction (such as petty bureaucratic extraction). Therefore, if the results of such a placebo test are robust (there is an unexpected correlation), this would suggest, at best, that the theoretical model is incomplete. Conversely, if the results are not robust, then these results provide evidence that the model's assumption – linking rents to the incentives of elected but not unelected officials – is not falsified.

The second step in selecting an appropriate dependent variable of interest, therefore, is to identify from the universe of valid and reliable objective and subjective indicators which one is most strongly, substantively associated with the theoretical framework. In this case, because the theoretical framework motivates hypotheses regarding the rent extraction of elected policy-makers, it is essential to identify a valid dependent variable of interest that most effectively measures this type of rent extraction. In addition, it is necessary to critically evaluate the other major measures of rent extraction, to see whether they can serve as robustness or placebo tests.

## 2.2 Operationalizing Rent Extraction: The Different Indicators

From the universe of valid and consistent measure of rent extraction, it is now essential to critically review which one of these indicators is most likely to capture the type of ‘political’ or ‘electorally-sensitive’ rent extraction that is of theoretical interest. Before doing this it is important to note that the propensity of different policy-makers to abuse their public office for private gain may vary significantly, given the incentives different policy-makers face. It is entirely possible that, in certain settings (incentive structures), the average elected official may engage in more/less rent extraction vis-à-vis entrenched bureaucrats and/or interest groups.

Given the assumption of rationality, it is expected that voters should potentially be able to distinguish between the activities of different actors. Thus, for example, voters would consider political rent extraction to be a problem if, say, members of parliament were found to have abused their allowance system<sup>30</sup> or taken bribes to change legislation. Conversely, if a public official who enjoyed significant autonomy from elected officials requested a bribe in order to conduct a routine activity, or resisted changes to their benefits proposed by elected officials (which might be considered a form of rent extraction) then voters would not necessarily attribute this form of rent extraction to elected officials. Of course, to the extent that bureaucrats are accountable to elected officials, it is anticipated that perceptions of rent extraction of the two groups may be correlated.

Given this substantive consideration, two indicators emerge as most likely to enjoy a comparative advantage in measuring (political) rent extraction: the CPI and the

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<sup>30</sup> As happened in the UK in 2009.

CC. While it is difficult to distinguish between these two indicators, the CPI is generally used first (in the text), because a smaller proportion of its composite factors are focused on bureaucratic rent extraction vis-à-vis the CC, and the CPI is constructed using a greater number of representative sources, thereby diminishing the weight of potentially unrepresentative outlier values<sup>31</sup>. Therefore, by reviewing all the major indicators in turn, it is possible to identify which of the valid and consistent indicators is also the one most closely associated with the theoretical enterprise at hand.

### **2.2.1 Measuring Rent Extraction: Survey-Based Indicators**

Since the mid-1990s there has been an exponential growth in the number of indicators attempting to measure rent extraction (see Treisman, 2007, for a review). Of particular importance has been the development of ‘composite survey based indicators’ of rent extraction, which try to utilize multiple (survey) sources to increase the accuracy of their measures. In accordance with most of the literature (e.g. Persson and Tabellini, 2003), three major composite indicators of rent extraction are used extensively in this analysis: (1) Transparency International’s ‘Corruption Perceptions Index’ (CPI), which focuses on political corruption and is thus, substantively, most likely to be the most efficient measure of the type of rent extraction linked to the research hypothesis; (2) the World Bank’s ‘Control of Corruption’ (CC) dimension of governance, which is a broader measure of public sector rent extraction; and (3) the World Bank’s ‘Government Effectiveness’, a dimension of governance much more focused on the non-elected public sector. By critically reviewing these popular subjective indicators of rent extraction, it becomes

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<sup>31</sup> Although, as the next section shows, the two indicators are in fact, statistically indistinguishable.

possible to (1) justify the use of the CPI as the most appropriate (primary) measure of (elected politicians’) rent extraction, but also to, (2) provide a basis for using the other two indicators as robustness checks for the results (albeit ones likely to have larger standard errors as they are designed to measure the activities of non-elected officials).

### **The Corruptions Perception Index**

The first major, freely available, and cross-national measure of rent extraction is Transparency International’s annual ‘Corruption Perceptions Index’. The aim of this index is to measure political corruption or the abuse of ‘entrusted power for private gain’ (Transparency International, 2012). Each country receives a score, which can range from 0 (extremely corrupt/rent extracting) to 10 (no corruption/rent extraction) and individual country scores are developed by aggregating and averaging normalised scores of ‘corruption related data’ emanating from a variety of sources<sup>32</sup>. The aim of the index is to provide a measure of the extent to which public sector bureaucrats and elected policy-makers engage in rent extraction (Transparency International, 2010). It is thus a potentially noisy but valid measure of electorally induced rent extraction:

*“The Corruption Perceptions Index...captures information about the administrative and political aspects of corruption.”*

Consistent with this definition, as Table 2.01 shows, most of the representative components of the CPI are concerned with capturing: (1) both the abuse of public office by politicians (potentially elected) and unelected officials (e.g. ‘bribing and corruption exists in the public sphere’; see Table 2.01); and (2) not just measuring a narrow

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<sup>32</sup> The 2010 scores were calculated using data from 13 different surveys or assessments produced by 10 independent organizations (Transparency International, 2010).

definition of corruption but also overall levels of rent extraction (e.g. ‘state capture and frequency of irregular, additional payments to public officials’). Specifically, seven of the eight representative sources of the CPI are concerned with overall rent extraction (e.g. ‘assessment of the pervasiveness of corruption among politicians and civil servants’; see Table 2.01), while one source is exclusively focused on the activity of politicians (‘assessment of corruption in government’; see Table 2.01).

Given this focus on both elected and unelected officials, it may, *prima facie*, appear that the CPI is, at best, a noisy measure of rent extraction undertaken by elected officials. However, while it is difficult to know, *a priori*, how noisy the indicator is, there are several reasons to believe that, especially in high-income democracies, the CPI is an efficient measure of ‘political’ rent extraction. Firstly, the fact that elected officials are able to regulate and exercise considerable oversight of unelected officials, albeit imperfectly (Horn 1995), means that especially in high-income democracies, the overall propensity of bureaucrats to engage in rent extraction is partly a function of the incentives generated by the oversight and legislative activities (setting of career incentives, salaries, disclosure rules etc.) of elected officials. As voters know the extent of oversight, it is possible for them to hold certain bureaucrats to account via the incentives they create for elected officials to exercise oversight (rent-minimize), and in order to ensure their own re-election. As such, while voters may not hold elected officials accountable for petty and individual instances of bureaucratic rent extraction, they may well hold them accountable for the average propensity of bureaucratic rent extraction, since these politicians shape the broad incentives that prevail in the public sector<sup>33</sup>. Secondly, institutional variables

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<sup>33</sup> For a review of the literature regarding how elected officials may exercise oversight of the bureaucrats, see Muller (2003) pp.386-405.

that affect the incentives of elected officials (electoral system, form of government) have been found to be robust predictors of variations in the CPI (Persson et al, 2003; Persson and Tabellini, 2002), an outcome that would be unlikely if the measure were a very noisy measure of the activities of elected officials. Finally, the CPI is highly correlated with more narrow measures of political rent extraction and variables associated with its effects, such as trust in the government and political parties, which would once again be unlikely if the CPI were a very noisy indicator of such elected officials' activities (see Chapter 4).

The CPI is available from 1995 when countries were first scored and has been updated yearly, so that in 2009 180 countries received a score. Over time, both the scope (number of countries) and the accuracy (standard error) of the index have improved. Furthermore, the CPI has been found to be highly correlated with measures of actual rent extraction (business regulation, public perceptions of corruption; see Treisman, 2007), thus suggesting that the CPI is effectively measuring an aspect of rent extraction.

**Coding.** As noted above, the CPI is an interval measure that ranges continuously from 0 (most corrupt) to 10 (least corrupt)<sup>34</sup>. The CPI is a composite index meaning that it utilizes a variety of different sources to arrive at each country's score (see Table 2.01). One of the essential criteria for a source to be used as part of the CPI is that it '...must provide a ranking of nations' (Transparency International, 2011). This criterion has the effect of precluding the use of sources that may provide scores for different countries, but do not use the same methodology (sampling frame etc.) across these countries. In short,

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<sup>34</sup> Please note that for ease of interpretation, in most subsequent chapters the scale is reversed so that 0 denotes the least corrupt country and 10 denotes the most corrupt country.

all the sources used by CPI provide a consistent and comparative measure of perceived rent extraction<sup>35</sup> at any given time. The way the composite index is developed is that each individual indicator of rent extraction is standardized (such that each source has the same weight) and then the average (mean) standardized score is calculated. Thus, the CPI score of a country in any one year is the (standardized) average score of all the sources available for that country<sup>36</sup>. In order to reduce abrupt variations in scoring, the CPI actually tries to include sources from the last three years. This ensures that reliability scores for any given country are only developed if there are at least three sources available for that country in any given year.

**Over Time Variation.** Because the number of sources that can be used to construct the CPI can fluctuate over time (as sources must be current from the last three years and provide consistent comparative information), comparison over long time periods are not advised, as the marginal change in the CPI over a given time period may reflect measurement error. However, because of the inclusion of sources from the last three years, it is possible to use the CPI year average over a short period of time (as in Persson and Tabellini, 2003) as a representative score for a country in a given time period.

**Constituent Parts (data sources).** As Table 2.01 indicates, the data sources of the CPI are numerous. The sources mainly consist of surveys of experts (smaller n, e.g. the Economist Intelligence Unit) or surveys of business leaders (Institute for Management Development has a larger n) and tend to be conducted by well-established international

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<sup>35</sup> Transparency International also ensures that the definition of corruption used does not vary significantly by source (TI, 2000, p.6).

<sup>36</sup> The standardization occurs in stages with each source.

institutions, such as the Economist Intelligence Unit, the World Economic Forum, the World Bank etc. The advantage is that such groups are likely to experience actual high-level political rent extraction, although the CPI has the disadvantage of not ascertaining the perception of voters, except in a minor capacity<sup>37</sup>.

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<sup>37</sup> Since 2001 the CPI has generally not included surveys of the general public as part of its index.

Table 2:01: Representative Components of the CPI (2000)

Source	Who Was surveyed/asked?	Question/ Assessment (Bureaucratic/Both/Political)	Availability of data	Sample size (year)?
Political & Economic Risk Consultancy	Expatriate business executives	'Extent of corruption in a way that detracts from the business environment for Foreign companies' (BOTH)	1998, 1999, 2000 in 12-14 Asian countries	280 (1998) 700 (1999-app) 1027 (2000)
Institute for Management Development	Executives in top- and middle-management; domestic and international companies	'Bribing and corruption exists In the public sphere' (BOTH)	1998, 1999, 2000 In 46-47 countries	2515 (1998) 4314 (1999) 4160 (2000)
The Economist Intelligence Unit	Expert staff assessment	'Assessment of the pervasiveness of Corruption among politicians and civil servants' (BOTH)	2000 in 115 countries	NA (expert assessment)
International Crime Victim Survey	General public	'During 1999, has any government official in your own country, asked you to pay a bribe for his service?' (BOTH)	1999, 2000 in 11 countries	20,000 (1999) 20,000 (2000)
The World Bank & EBRD	Senior business-people	'State capture and frequency of irregular, additional payments to public officials' (BOTH)	1999 in 20 countries	3000 (1999)
Freedom House	US academics and Freedom House Staff	'Levels of corruption' (BOTH)	1998 in 28 countries	NA (expert assessment)
The World Economic Forum (Global Competitiveness Report)	Senior business leaders; domestic and international companies	'Irregular, additional payments connected with import and export permits, business licenses, exchange controls, tax assessments, police protection or loan application' (BOTH)	1998, 1999, 2000 in 53-59 countries	3167 (1998) 3934 (1999) 4022 (2000)
The World Economic Forum (African Competitiveness Report)	Senior business leaders; domestic and international companies	'How problematic is corruption? Irregular, additional Payments are required and large in amount' (BOTH)	1998, 2000 in 20-26 countries	582 (1998) 1800 (2000)
Political Risk Service	Expert staff assessment	'Assessment of "corruption in government"' (POLITICAL)	2000 in 140 countries	NA (expert Assessment)

Source: Transparency International, 2012

**Use of the Data.** The major dataset that contains information on the CPI, and is used extensively in the subsequent chapters, is Persson and Tabellini's (2003) dataset. This contains the average scores of the CPI between the years 1995 and 2000. Given the fact that the CPI uses sources from the last three years, using this average a score is not particularly problematic as the scores are highly correlated over time.

### **Government Effectiveness & Control of Corruption**

Both of these measures are developed by the same institution (the World Bank) and rely on a common methodology. As such, it is possible to summarize the coding and some of the issues associated with each indicator jointly. It is also important to note that these two indicators form part of a larger set of 'Good Governance Indicators' which also include: (1) Voice and Accountability, (2) Political Stability, (3) the Absence of Violence, (4) Regulatory Quality, and (5) the Rule of Law (World Bank, 2011). The World Bank uses 30 existing data sources to develop each of these indicators. The sources are selected to include the views of citizens, business owners, academics and experts drawn from the public, private, and NGO sectors from across the globe. Specifically, the following standard methodology is used (World Bank 2011):

**Coding.** For all six indicators, the World Bank uses the same approach in order to develop an interval measure of the governance dimension of substantive interest. This entails standardizing the variables and then using an 'Unobserved Components Model' (UCM) to develop each indicator. This process therefore enables the development of the

control of corruption and government effectiveness indicators that ranges from -2.5 (most corrupt/least effective) to 2.5 (least corrupt/most effective) (World Bank, 2011, online):

**Over Time Variation.** Due to the annual change in the number of sources over time, making inferences regarding the marginal change in a country's score over a short period of time is not advised (World Bank, 2011). Averaging the score of countries over a few years to get a representative average for the time period is not problematic, due to the fact that sources from adjacent years are used to construct the indicator at any one time.

**Constituent Parts (data sources).** The two indicators are developing using a sub-component of the data sources, as they are available and applicable by year. The 30 data sources can be divided into: (1) surveys of households and firms (nine sources), (2) commercial intelligence information generators (e.g. the Economist Intelligence Unit, four sources); (3) NGOs (9 sources, including Freedom House) and Public Sector Organizations (e.g. the World Bank).

**Use of Data.** As in the case of the CPI, the main source of data is Persson and Tabellini's (2003) dataset, which contains averaged information on the CC and the GE for 1998 and 2000. As before, in order to maximize the number for countries, the scores for later years – 2011 – are used for descriptive statistics, although the results are in fact very similar had the scores from the dataset been used.

### **Control of Corruption Cluster/Governance Dimension**

The second major, freely available, and cross-national measure of rent extraction is the World Bank's measure of the 'Control of Corruption' (CC). The aim of this measure, like the CPI, is to capture the extent to which public policy-makers abuse their public office for private gain. The aim of the index is thus (World Bank, 2010):

*"...designed to capture...extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests."*

Despite a formal definition that may appear to be more skewed towards political rent extraction, the CC, like the CPI, is primarily composed of sources, some of which are the same as the CPI, concerned with measuring both political and bureaucratic rent extraction. As Table 2.02 shows, three of the five representative sources used to construct the CC are concerned with general rent extraction (e.g. 'pervasiveness of corruption'; see Table 2.02); one source is focused on bureaucratic rent extraction ('an assessment of the intrusiveness of the country's bureaucracy'; see Table 2.02) and one source is concerned with political rent extraction ('is corruption in government widespread?'; see Table 2.02). In short the CC is very similar to the CPI, although, unlike the CPI, one of its representative sources is focused exclusively on rent extraction undertaken by bureaucrats, meaning that the skew towards unelected officials may be slightly greater vis-à-vis the CPI. Furthermore, the CC uses fewer representative sources (five versus eight) meaning that it may be slightly less likely to be composed of representative sources regarding the level of 'political' rent extraction vis-à-vis the CPI.

Despite its focus on multiple types of rent extraction, the indicator, like the CPI, is likely to be an efficient, albeit somewhat noisy, measure of ‘political’ rent extraction as: (1) voters can hold elected officials to account for their success/failure to incentivize and exercise oversight of bureaucrats; (2) like the CPI, the CC has been found to vary, given the electoral incentives office-holders face; and (3) as Chapter 4 and Appendix B shows, substituting the CC with a more narrow and focused measure of rent extraction does not affect the results of the subsequent analysis.

The index is available from 1996 and was published bi-annually until 2002, after which annual scores became available when countries were scored. Since then it has been updated yearly. Table 2.02 shows the component parts of the CC. Like the CPI, albeit to a lesser extent, the indicator is focused on surveys of experts, some of which are the same as the CPI, for example the Economist Intelligence Unit. However, it does, vis-à-vis the CPI, focus on both grand political and more petty rent extraction (e.g. level of petty, large-scale and political corruption). Thus it is anticipated that the CC will be a noisier, albeit still potentially valid, indicator of the type of rent extraction under study, and could therefore be a robustness check for the initial results.

Table 2:02: Representative Components of the CC

Source	Who Was surveyed/asked?	Question/Assessment of (Bureaucratic/Both/Political)	Source Type
Economist Intelligence Unit Risk-wire & Democracy Index	Expert Staff	‘Pervasiveness of Corruption’ (BOTH)	Commercial Business Information Provider
World Economic Forum Global Competitiveness Report	Survey- Senior business leaders; domestic and international companies	‘Public trust in financial honesty of politicians Diversion of public funds due to corruption is common’  ‘Frequent for firms to make extra payments connected: (1) trade permits, (2) public utilities, (3) tax payments, (4) loan applications, (5) awarding of public contracts, (6) influence laws, policies regulations, decrees, (7) to get favourable judicial decisions.’ (BOTH)	Non-Government Organization
Gallup World Poll	Survey- general public	‘Is corruption in government widespread?’ (POLITICAL)	Commercial Business Information Provider
Institutional Profiles Database	Expert Staff	‘Level of petty, large-scale and political corruption’ (BOTH)	Government
Global Insight Business Conditions and Risk Indicators	Expert Staff	‘An assessment of the intrusiveness of the country’s bureaucracy. The amount of red tape likely to countered is assessed, as is the likelihood of encountering corrupt of officials and other groups’ (BUREACRATIC)	Commercial Business Information Provider

Source: The World Bank, 2012

### Government Effectiveness Cluster/Governance Dimension

The third major, freely available, and cross-national measure of rent extraction is the World Bank’s measure of ‘Government Effectiveness’ (GE). Substantively, the GE captures the same underlying notion of the abuse of public power by policy-makers as do the CPI and the CC. However, it is qualitatively different in that it measures the extent to

which rent extraction takes place via *unit cost increases*, rather than the level of bribes or cost of lobbying. Thus, while measures that compose the CPI and CC are likely to capture the ability of public policy-makers to rent-extract via extortion and bribes, the GE is more likely to capture the extent to which public officials abuse their office by reducing their workloads, gold plating their benefits, etc. The GE is developed using the same methodology as the CC but is qualitatively focused on bureaucratic rent extraction (World Bank, 2010, online):

*“Government Effectiveness (GE) – [is designed to capture] perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies.”*

As Table 2.03 indicates, the GE is composed of almost the same representative sources as the CC. However, unlike the CC, the focus of the GE is very much on rent extraction in the bureaucracy (e.g. ‘bureaucratic quality’; see Table 2.03). In fact, only one of the five representative sources of the GE is not exclusively focused on bureaucratic rent extraction: ‘quality of the supply of public goods: education and basic health and the capacity of political authorities to implement reforms’ (see Table 2.03). Of course, if bureaucrats are accountable to elected officials then it is anticipated that the GE will be highly correlated with both the CC and the CPI. While the GE, therefore, is substantively not focused on political rent extraction directly, it is likely to be correlated with measures of political rent extraction because of the relationship between politicians and bureaucrats. The sources for the Government Effectiveness (2011) are as follows:

Table 2:03: Representative Components of the GE

Source	Who Was surveyed/asked?	Question/Assessment of (Bureaucratic/Both/Political)	Source Type
Economist Intelligence Unit	Expert Staff	‘Quality of bureaucracy / institutional effectiveness ‘ (BUREACRATIC)	Commercial Business Information Provider
World Economic Forum Global Competitiveness Report	Survey- Senior business leaders; domestic and international companies	‘Quality of general infrastructure Quality of public schools Time spent by senior management dealing with government officials ‘ (BUREACRATIC)	Non-Government Organization
Gallup World Poll	Survey- general public	Satisfaction with public transportation system Satisfaction with roads and highways Satisfaction with education system (BUREACRATIC)	Commercial Business Information Provider
Institutional Profiles Database	Expert Staff	‘Quality of the supply of public goods: education and basic health Capacity of political authorities to implement reforms’ (BOTH)	Government
Political Risk Services International Country Risk Guide	Expert Staff	‘Bureaucratic Quality ‘ (BUREACRATIC)	Commercial Business Information Provider
Global Insight Business Conditions and Risk Indicators	Expert Staff	‘An assessment of the quality of the country’s bureaucracy. The better the bureaucracy the quicker decisions are made and the more easily foreign investors can go about their business. Policy consistency and forward planning How confident businesses can be of the continuity of economic policy stance - whether a change of government will entail major policy disruption, and whether the current government has pursued a coherent strategy. This factor also looks at the extent to which policy-making is far-sighted, or conversely aimed at short-term economic advantage.’ (BOTH)	Commercial Business Information Provider

Source: The World Bank, 2012

### **Other Subjective Indicators**

As noted above, numerous subjective indicators of rent extraction are now being developed. However, focusing on the three aggregate indicators identified above is probably a more viable strategy than using any additional indicators. This is primarily because individual indicators may be more prone to being unrepresentative and/or measure rent extraction in a narrow manner. While the focus on composite indicators is justified in terms of validity and reliability, it is useful to briefly consider one narrow indicator, which may serve as a useful robustness check of the findings of any of the composite indicators.

The indicator in question is Transparency International's Global Corruption Barometer, which, since 2003, has accompanied the publication of the CPI. The logic behind the GCB is that it provides information on perceptions of corruption by the general public, whereas the CPI is almost exclusively focused on perceptions by elites (business people and experts). Given that the theoretical argument is based on the interaction of voters and elite policy-makers, it is useful to introduce the GCB, as it can serve as a useful robustness check. Specifically, by using the GCB, it becomes possible to examine whether elite and voter perceptions of rent extraction vary, as anticipated by the model.

#### ***Non-Composite Indicator: The Global Corruption Barometer***

Since 2003, Transparency International has, in collaboration with Gallup International, commissioned annual questions on different elements of corruption (Transparency International, 2011). The aim of the Global Corruption Barometer is to provide

perceptions of rent extraction by the general public rather than by experts (the focus of the CPI). The questions are part of Gallup’s Voice of the People survey (Transparency international, 2011). The number of countries the survey covers has varied over time (47-86), and in some countries the authorities have barred politically sensitive questions<sup>38</sup>. As Table 2.04 shows, the sample survey is national in scope, although in some developing countries it is confined to major urban areas and conducted via mostly face-to-face or telephone interviews. The sample framework is either random or quota (varying by country) but is representative and large (40,838 respondents in 2003), although in every case the final results are weighed by demographic characteristics (age, groups, and sex) in order to make the results as representative of the general population as possible. The summary statistics of a typical GCB are as follows:

*Table 2:04: Descriptive Statistics of the Global Corruption Barometer (2003)*

Number of Questions	Number of countries	Questions of Interest	Sample Size	Demographic Data controls
6	47	‘Corruption is a significant problem in: political life’ (no/yes, slightly/yes significantly)	40,838 (19,488) female (21,390) male	Age, Education attainment. Income level

*Source: Transparency International, 2012*

Substantively, what is interesting about this question is that it is narrowly focused on rent extraction at the highest policy-making levels, thus it is most likely to capture the perceptions of rent extraction of elected officials and senior bureaucrats. Of course, given the fact that the survey data is (1) focused on only one type of respondent (the general

<sup>38</sup> For example in the 2004 survey only one of the 13 questions was allowed in Egypt

public) who may not experience political rent extraction directly (at least in high-income democracies); and (2) does not combine other indicators of rent extraction to eliminate/reduce the effect of unrepresentative results, means that the question would be problematic as the primary dependent variable. However, this narrow indicator could be a good robustness check of the composite indicators: if the two are highly correlated, it would suggest that fears that the composite indicators are too noisy to measure political rent extraction are misplaced.

**Coding.** Over time, the questions in the GCB have changed. For the purpose of this thesis, the questions of interest were asked of respondents in the 2003 survey. Specifically, respondents were asked whether ‘corruption had a not/significant/somewhat significant/very significant effect on (1) personal and family life, (2) the business environment, and (3) political life.’ (Transparency International, 2011). Each answer received a percentage of respondents, was interval in nature, and could vary from 0%-100%. As noted in Chapter 1, there is significant variation in the perceptions of rent extraction across the different policy domains.

**Over Time Variation.** The questions asked have varied by year and in order to ensure the most valid questions are used, the data from the survey is based on the 2003 iteration. Due to the fact that the questions and sampling strategy change over time, it is not always possible to compare the results in this manner.

### **2.2.2 Measuring Rent Extraction: Objective Indicators**

Objective indicators of rent extraction are less numerous and less standardized than the composite subjective indicators. Three types of objective indicators have generally been developed: (1) input-output analysis of the anticipated versus actual costs of construction/provision of services; (2) criminal statistics regarding the number of prosecutions for bribery; and (3) natural experimental data on the behaviour of policy-makers. As the research question of interest pertains to cross-national variation in the policy-making context, it is not possible to consider the efficacy of input-output analysis, as this data does not exist except for very detailed country case studies. However, comparative indicators for the other two objective types of data do exist and it is worth critically reviewing them<sup>39</sup>.

### **The United Nations Survey of Crime Trends and Operations of Criminal Justice Systems**

This is a survey compiled and collected by the Crime Prevention and Criminal Justice Division of the United Nations. The survey began in 1970 and compiles annual data on the incidence of different types of crime in UN member states. The survey asks relevant public authorities in each member state to provide data, from their own national statistics, regarding the incidence of crime. Included in this survey are questions regarding the

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<sup>39</sup> Another sub-set of objective indicators not examined are those based on the input-output analysis of major infrastructure projects. This is because such indicators have only been developed at the local/national level and cannot therefore be used to test theories linking changes in national level electoral contexts to the level of rent extraction.

number of prosecutions for bribery per 100,000 of the population.

**Coding.** The rate of prosecution per 100,000 can, hypothetically, vary from 0 to 100,000 (interval range). As Table 2.05 indicates, there is significant variation in the number of prosecutions for bribery per 100,000 of the population for the year 2000, while on average there were 3.5 prosecutions for bribery per 100,000 of the population. The standard error is greater than the mean (9.6), the lowest per capita prosecution is 0.01 per 100,000 (Pakistan), while the highest rate was in Romania (52.3 per 100,000).

*Table 2:05: Prosecutions for Bribery (2000)*

Number of Observations	Average number of prosecutions per 100,000	Standard Error	Minimum	Maximum
54	3.5	9.6	0.01	52.4

*Source: United Nations, 2012*

There are two major problems with using the bribery data as a measure of rent extraction. Firstly, there is little data from OECD countries and the definition of bribery varies by jurisdiction, so cross-country comparisons may be extremely problematic. Secondly, prosecution for bribery does not necessarily measure higher/lower levels of rent extraction. Countries may have low levels of prosecution due to the lack of rent extraction (e.g. Ireland), or due to the poor capacity of the legal system (e.g. Pakistan). Conversely, a high prosecution rate may indicate high levels of bribery (e.g. Romania) but also the use of prosecution as a deterrent (e.g. Hong Kong). In short, because the use of prosecution may vary significantly by context (capacity, deterrent, etc.) it is not possible to use this indicator as a valid, cross-sectional measure of increased/decreased

rent extraction (Lambsbrof, 2004).

**Over Time Variation.** Because of changes in the definition of bribery over time and the inconsistent use of the term across jurisdictions, both over time and cross-sectional analyses may be problematic. However, within country comparisons may be possible: for example, amongst US states in which issues of judicial capacity and the use of broadly similar definitions of bribery are likely.

### **Experimental Data: The Behaviour of Diplomats**

While individual incidents of rent extraction may be opportunistic in nature, there is evidence that social, cultural and institutional norms – which create incentives and expectations – may strongly condition the propensity for individuals to abuse public office for private gain, when the opportunity arises. Miguel and Fisman (2007) exploit the fact that UN diplomats in New York are immune from prosecution and use the number of parking tickets issued to individual diplomats to develop a per capita measure of the abuse of parking violations. They divide the number of tickets issued to diplomats of a certain nationality between 1998-2000, by the number of diplomats in that country's UN delegation.

**Coding.** The number of parking tickets per capita (size of the diplomatic delegation) is an interval indicator ranging from 0-249. As Table 2.06 indicates, there is considerable variation in the number of tickets issued per capita, with the standard error (33.0) larger than the mean (19.7). For many countries, especially high-income OECD countries in

Northern Europe, the number of parking tickets issued was 0, while as a region, the Middle East had the highest rate of ticketing (Kuwait had the highest rate of all countries: 249.4).

*Table 2:06: Per Capita Issue of Tickets (1998-2001)*

Number of Observations	Average per capita Issue of Tickets	Standard Error	Minimum	Maximum
137	19.7	33.0	0.0	249.4

*Source: Miguel and Fishman, 2007*

While this measure has several weaknesses – it may only be measuring a very narrow form of corruption norm, and diplomats are not necessarily representative of the population – it also has several strengths. Firstly, it does in fact correlate strongly with subjective survey data on corruption (Control of Corruption and the CPI), and secondly, diplomats may not be representative of the average citizen, but are more likely to be similar to the senior policy-makers affected by retrospective evaluation that are of interest to the study. In many, but not all, countries, senior diplomats are political appointments. The data is available for a large number of countries (146), is comparable, and exists over a time period (1998-2001) for which corruption indices exist. Because of this, it is used as a robustness check for these subjective results.

### **2.2.3 Which Measure?**

Given that the aim of this thesis is to examine variation in political rent extraction, the most valid and reliable measure of rent extraction is the one that is most likely to capture

those elements of rent extraction associated with elected officials and those accountable to them. Therefore, the major criterion that can be used to assess whether an indicator of rent extraction is likely to be a good measure of ‘political’ rent extraction, is whether it captures the activities of elected officials and those accountable to them. As elected officials have most control over (1) framework laws, (2) tax and spending decisions, and (3) general oversight of the bureaucracy, rather than (4) the making and implementation of complex regulations and/or (5) everyday implementation of laws, a valid indicator of political rent extraction will be more focused on capturing (1), (2), and (3), rather than (4) and (5).

From this, it is possible to argue that the CPI, CC, the GCB, and the Ticket data are most likely to satisfy these criteria, since these indicators appear to focus, to varying degrees, on political rent extraction. Discriminating between these indicators is more difficult, because the way the indicators are constructed generates different costs and benefits. Narrowly focused indicators – such as the GCB and the Ticket data – are more likely to be less noisy indicators of one dimension of rent extraction. However, by focusing on a narrow range of actions or respondents, it may be the case that such indicators fail to capture the multi-dimensional nature of rent extraction. Conversely, the CPI and the CC have the advantage of combining multiple sources to provide a more comprehensive assessment of rent extraction, but may also be noisy as they contain the activities of non-elected officials.

In fact, as the next section and the similarity of results in Chapter 4 and 5 show, using the CPI, CC, Tickets and GCB as dependent variables of interest does not alter the results, an unsurprising finding given the fact that these indicators are highly correlated

(see next section). Despite this, it is possible to argue that the composite subjective indicators (the CPI and the CC) are the best starting point of any empirical analysis, as they are more comprehensive and thus are more likely to be capturing all elements of rent extraction (see the discussion above). More specifically, given that the CPI (1) contains no source that is exclusively focused on bureaucrats versus one source for the CC (see Table 2.01 and 2.02) and (2) has nine representative sources versus five for the CC (increasing the likelihood of minimizing the effect of unrepresentative sources), the CPI is used in the main body of the text. However, in every relevant case, results using the CC and the tickets data are the same and reported in Appendix B. In short, the CPI is a good primary dependent variable because of its comprehensive nature (versus Tickets and the GCB) and less focused on bureaucratic rent extraction (marginally so, versus the CC). However, as it is difficult to distinguish between the indicators in practice, using them all (as appropriate) as robustness checks of the initial results is possible and undertaken thought-out the empirical analysis.

### **2.3 Do The Indicators Measure an Underlying Level of Rent Extraction? An Empirical Assessment**

The discussion above, as well as much of the literature regarding the validity of rent extraction, suggests that both objective and subjective measures of rent extraction should be measuring the same underlying activity. The indicators are constructed using similar questions and the oversight capacity of politicians suggests that even indicators focused on different activities will be highly correlated. While correlation is not a measure of validity and cannot ascertain causality, a robust positive association between the

measures would increase confidence in the empirical strategy pursued; namely, to use different indicators of rent extraction to verify the initial results.

The strong correlation between the CPI and the CC has already been noted in several studies (e.g. Treisman, 2007), as has the strong correlation between the CPI and Tickets data (Miguel and Fisman, 2007). These studies have not only consistently found a robust association between these measures, but have also established that, as the number of sources used to create each indicator has increased over time, the correlations between the indicators have also become stronger. Once again, this does not in and of itself prove that the measures are valid, but it is consistent with the logic that as these measures become more efficient at measuring rent extraction, it would be expected that the correlation between them increases.

If representative measures of subjective corruption data are *consistently* measuring similar, but not identical, types of perceived corruption, it follows that such measures should be highly correlated. However, measures such as the CPI and the CC – which are more focused on political corruption – should be only weakly correlated with the GE, which is focused more on bureaucratic corruption. Furthermore, if the subjective measures of corruption are valid, we would also expect them to be negatively correlated with the objective measure of corruption. That is, less perceived corruption (higher CPI, CC and/or GE scores) should be negatively correlated with the per capita number of parking tickets issued to diplomatic teams at the UN.

Tables 2.07 and 2.08 show the correlations using the raw data (from the early to mid 2000s, so that all sources are from approximately the same time period) between all

three subjective<sup>40</sup> and the one representative objective indicator of corruption. As expected from the discussion above, each indicator is correlated with all other measures in the manner anticipated. Specifically, each of the subjective measures is highly correlated with the other two and it is not possible, even at the 1% interval, to reject the hypothesis that any of these correlations are spurious. Despite this extremely strong correlation, the CPI (more focused on political rent extraction) is much more highly correlated with the CC (0.98) than with the GE (0.93) as would be expected, given their focus on slightly different aspects of corruption. In short, there is very little difference between the indicators, suggesting that they are reliable measures of perceptions of rent extraction<sup>41</sup>. Given that there is no agreed way to determine to what extent the substantive focus of the CC and the CPI exist, this is advantageous because it suggests that alternating between the two should not affect the results.

Furthermore, all three subjective indicators predict changes in the objective measure of rent extraction in the manner anticipated. Namely, higher scores on the subjective indicators are associated with a statistically significant lower incidence of issued parking tickets. This relationship is most robust when using the CPI (significant at the 1% interval) but also remains significant for the other two subjective measures of corruption (albeit at the 5% level). However, while the associations are robust, the magnitude of the relationship is not as strong (ranging from 0.19-0.30). This suggests that when using the pooled data, the relationship between the objective and subjective measures is noisy.

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<sup>40</sup> Given the restricted sample size of the GCB, this data is not reported here so as not to significantly restrict the number of observations. However the correlations between the GCB and the other indicators are analyzed in detail in Chapter 5.

<sup>41</sup> Although their validity cannot be verified by these correlations.

Focusing on the OECD sub-sample (Table 2.08) the results are largely similar. The subjective indicators are highly and significantly correlated with each other, with the only change being that the CC and the GE are now slightly more closely correlated (0.95 versus 0.93). Interestingly, the association between the subjective and the objective indicators is now considerably stronger. Specifically, the inverse relationship between the CPI and the per capita number of tickets issued is now significant at the 1% level, and twice as strong (0.60 versus 0.30). The relationships between the number of tickets issued and the other two subjective indicators is also stronger (0.58 versus 0.19 for the CC, and 0.62 versus 0.19 for the GE) and in the case of the CC, more robust (significant at the 1% confidence interval). Of course, it is not possible to deduce whether the imperfect correlation between the indicators is due to the fact that the tickets are measuring only a narrow type of corruption, or the subjective indicators are not capturing objective assessments. However, the fact that the associations are robust provides a basis for using these measures, even if they have to be subjected to exhaustive robustness tests.

*Table 2.07 Correlation between Measures of Rent Extraction (2000s data-Pooled)*

Measure	CPI	CC	GE
CPI	-		
CC	0.98***	-	
GE	0.93***	0.93***	-
Tickets	-0.30***	-0.19**	-0.20**

Note: CC and GE are inverted for clarity of interpretation. Based on 131 observations. Pair wise correlations. \*\*\* denotes significance at the 1% level, \*\* denotes significance at the 5% level, \* denotes significance at the 10% level. Sidak test used to eliminate the possibility that robustness is due to multiple comparison fallacy. *Source:* Author's calculations using scores from 2010. When including the GCB data the sample is restricted to 27 observations. However, the indicator is highly correlated with the other measures (see Chapter 5 for details).

*Source: The Author*

*Table 2.08 Correlation between Measures of Rent Extraction (2000s data- OECD Sub-Sample)*

Measure	CPI	CC	GE
CPI	-		
CC	0.98***	-	
GE	0.93***	0.95***	-
Tickets	-0.60***	-0.58***	-0.62***

Note: CC and GE are inverted for clarity of interpretation. Based on 19 observations. Pair wise correlations. \*\*\* denotes significance at the 1% level, \*\* denotes significance at the 5% level, \* denotes significance at the 10% level. Sidak test used to eliminate the possibility that robustness is due to multiple comparison fallacy. *Source:* Author's calculations using scores from 2010. When including the GCB data the sample is restricted to 27 observations. However, the indicator is highly correlated with the other measures (see Chapter 5 for details).

*Source: The Author*

A second empirical test of the robustness of the different measures of rent extraction is the use of factor analysis. If the subjective and objective measures of corruption are measuring the same thing, we would expect them to load onto a latent (unobserved) measure of overall corruption. Specifically, we would expect the factor loadings of the subjective measures (given their scales, higher values denote less perceived corruption) to have factor loadings of the same sign and opposite to that of the objective measure (in which higher values indicate more rent extraction).

Table 2.09 shows that the factor analysis results yield consistent and significant values for both the Pooled and the OECD sub-samples. Specifically, in both cases, the factor analysis yields only one significant (Eigen value >1.0) latent variable and in both cases the individual measures load onto this variable in the manner anticipated. Namely, the subjective indicators load onto the indicator positively, while the objective measure loads onto the latent variable negatively. This outcome is consistent with the expectation that higher scores on the subjective indicator and lower scores on the objective indicator should load onto a latent variable measuring the overall good governance (absence of

corruption) of a given country. The results are especially strong in the OECD sub-set with the objective indicator having a bigger, absolute loading (0.61 versus 0.30) onto the only significant latent variable.

*Table 2.09 Factor Analysis of the Objective and Subjective Indicators of Rent Extraction*

Variable	Factor Loading for each measure (for 1 <sup>st</sup> Latent Variable)				Eigen value	Other Significant Latent Variables
	CPI	CC	GE	Tickets		
Pooled (n=131)	0.99	0.99	0.94	-0.30	2.95	No
OECD (n=19)	0.99	0.98	0.95	-0.61	3.25	No

*Source: Author's calculations using scores from early 2000s.*

#### **2.4 What Are the Determinants of Rent Extraction and Do They Differ By Country Sub-Group? A Baseline Regression Model Specification**

Before turning to developing and testing the proposed theoretical model – linking the dependent variables above (valid measures of rent extraction) to an independent variable of interest (the EDD/NEDD ratio) – it is first necessary to identify the generic or baseline regression model specifications that: (1) links the large number of existing independent variables (control variables) to the dependent variable of interest, (2) correctly identifies the distributional assumptions that have to be made, given the nature of the dependent variable of interest, and hence the distribution of residuals of any regression model, and (3) identifies different strategies for dealing with outlier observations, thereby minimizing the possibility that any empirical results reported are biased due to (1) omitted variable bias, (2) wrong distributional assumptions and/or (3) the effect of outlier values.

### **2.4.1 Control Variables**

As discussed extensively in the previous Chapter (see Section 1.3), a large literature of theoretical and theoretically motivated empirical work has emerged that has attempted to identify the determinants of rent extraction. This work has resulted in the identification of a large number of variables that have been found to be robustly associated with indicators of rent extraction. However, as also discussed extensively in Chapter 1, there is not a great deal of consensus regarding how, theoretically, most of these specific variables affect rent extraction. What links all these variables to the issue of rent extraction is that, to different extents, they are measuring the social, economic, political, and geographical factors that determine (1) whether voters can hold government to account (the existence of a principal-agent relationship); and (2) to what extent secondary variables sharpen/weaken the effectiveness of this relationship. Generally, a long democratic history, educated and relatively wealthy voters and firms able to compete in the international economy as well as broad geographical characteristics have been most robustly associated with variation in rent extraction. As noted in Chapter 1, these are the macro variables essential for a principal-agent relationship to exist between voters and elected officials (do elections occur? can voters effectively participate? etc.). Conversely, variables, which condition but are not necessarily essential for such a principal-agent relationship to exist (ethno linguistic fragmentation, tax revenue from mineral wealth, regional legacies) have sometimes been found to affect variation in rent extraction.

Given these theoretical and empirical regularities, it is possible to categorize these independent variables in the following way: (1) basic/essential control variables – variables which are essential for a principal-agent dynamic to emerge (existence of

democratic institutions, norms, and socio-economic abundance amongst voters and broad geographical characteristics); and (2) additional control variables – which enhance/diminish the incentive structure within the basic P-A framework (e.g. characteristics of voters, secondary incentives faced by elected officials, more disaggregate regional characteristics). All these variables are noted in Table 2.03 which exclude institutional and political economy variables (discussed in Chapters 4 and 6).

The reason why identifying such controls is essential is because such variables may be correlated with both the independent and the dependent variables of interest. Thus, not controlling for such variables may induce omitted variable bias. Depending on the nature of the association between the control variable, the independent variable and the dependent variable, such omitted variable bias may either downwardly or upwardly bias the coefficient and statistical significance of the independent variable of interest, thereby yielding invalid results. Given that most datasets that seek to systematically determine the causes of rent extraction include most/all of these controls, it is relatively easy to identify and use conventional operationalizations of these variables to construct a vector of basic, and additional controls. Most of these controls already exist in the Persson and Tabellini (2003) dataset that has also been augmented to include some additional variables<sup>42</sup>. It is important to note that while data availability varies by time periods, most of the regression analyses use data from the late 1990s and early 2000s, so that the largest number of variables is available for inclusion. This ensures that the results are not affected by over time change in the availability of any variable. However, when bivariate results not related to subsequent regression analyses are used, the most recent

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<sup>42</sup> Most of the variables and variable coding are thus drawn directly from Persson and Tabellini (2003). See Appendix A for the details of how variables are coded.

data is usually deployed in order to demonstrate the continued robustness of the associations.

### 2.4.1 Basic Controls<sup>43</sup>

**Age of Democracy** controls for how long a country has been a democracy. This is critical because democracy has been linked to both rent extraction (see Section 1.2.1) and the nature of public policy-making. Some authors argue that institutionalized democracy allows for the better oversight of unelected officials and increased accountability due to ‘democratic learning’ (higher EDD/NEDD ratio), and others argue that stability may induce interest group capture (lower EDD/NEDD ratio) and more corruption (Olson, 1981). Age is an interval variable which is calculated as follows:

$$\text{'(2000 - the first year of democratic rule)/200'}^{44}. \tag{2.01}$$

It thus varies between 0 and 1. The first year of democratic rule is derived from the POLITY IV (2011, online) dataset and is calculated by subtracting the measure of institutionalized autocracy (AUTOC) score from the measure of institutionalized democracy score (DEMOC) score, and therefore varies between +10 (very democratic) to -10 (very autocratic). Countries with a score greater than zero are conventionally considered to be democracies.

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<sup>43</sup> Permission to reproduce an adapted version of these variable explanations was granted by the MIT University Press (07/16/2012). This material is from p.279-286 of Persson and Tabellini (2003).

<sup>44</sup> Person and Tabellini (2001, p.279-281).

**Economic Openness (Long-Term)** controls for how long a country has been open to international trade. Economic openness has been linked to reduced rent extraction (due to the reduced ability of policy-makers to abuse public office without consequences (see Sections 1.3.6-1.3.7). It has also been linked to a higher EDD/NEDD ratio as it not only decreases the discretion of elected officials but also, at least in high-income democracies, tends to result in the proliferation of welfare and other social spending associated with NEDDs (Rodrik, 1998; Duch and Stevenson, 2008). Paradoxically, there may be less democratic accountability as a more expansive, NEDD-dominated state emerges.

Economic openness is an interval measure, which varies from 0-1 and uses the substantive criteria listed below to establish when a country became open (post-1950). It measures the proportion of time, starting from 1950, that a country was identified as being open by Sachs and Werner (1995), as adapted by Hall and Jones (1999) and Persson and Tabellini (2003). Specifically any given country is identified as being open if it satisfies all of the following: (1) non-trade/tariff barriers are minimal- constitute less than 40 percent of total trade, (2) the average tariff rate is small- typically less than 40 percent of goods and services, (3) any black market premium constituted less than 20 percent of the economy in both the 1970s and 1980s, (4) the polity is not considered to be a planned economy, and (5) the state does not monopolize/ or excessively control major exports/export procedures (Hall and Jones 1999, p.18).

**Geographical Latitude** controls for the latitude of a country. This has been linked to the quality of institutions, and hence rent extraction (Acemoglu and Robinson, 2001), due to

the type of institutions set up by colonial powers (proximity to the equator is associated with more corruption). Furthermore, the quality of institutions does not only affect the likelihood of rent extraction but also whether representative government (EDD/NEDD ratio) is present. The variable is interval in measure and captures a country's distance from the equator in degrees. It is adapted from Hall and Jones (1999) and is interval in nature.

**(Log) Per Capita Income** controls for the income level of a country. High-income countries have been strongly associated with less rent extraction, better democratic oversight (lower EDD/NEDD ratio) but also a more extensive public sector (higher EDD/NEDD ratio) vis-à-vis the typical poorer democracy. Whether better and/or more extensive government determines higher income or vice versa is a matter of continued controversy (see Section 1.3.1). Specifically, this interval measure is the natural log of per capita GDP in real and constant US dollars (chain indexed with a base year of 1985). The sources of the variable are the PENN World Tables (2011) and the World Development Indicators (World Bank, 2011).

**Primary & Secondary School Enrolment** controls for the percentage of the relevant age group in education. An educated citizenry is closely associated with the ability of citizens to monitor public policy-makers (Tresiman, 2007) and hence potentially affects both the level of corruption directly and though the extent to which different policy-makers can be identified and held to account (EDD/NEDD ratio) by more educated citizens. The indicator is an interval variable calculated as the fraction of pupils formally enrolled in

an eligible institution of education, independent of their age, and multiplying this fractional result by 100. Source: UNESCO (2011).

#### **2.4.2. Additional Controls<sup>45</sup>**

**Ethnolinguistic Fragmentation.** A more heterogeneous population has sometimes been linked to more corruption, as the ability of voters to develop a common assessment of an incumbent's performance is circumscribed, and voters are more likely to tolerate policy-makers with certain characteristics, even if their performance is sub-optimal (as formally shown in Ferejohn, 1986). Divided societies may also exhibit different EDD/NEDD ratios, as either trust in any government is limited (higher EDD/NEDD ratio) or representatives of different groups are included and consulted/make policy (lower EDD/NEDD ratio). The measure used to capture the level of ethnic and/or linguistic diversity is an index (interval measure) ranging from 0 (complete absence of different groups) to 1 (extremely heterogeneous) and is the average of 5 different indexes (source: La Porta et al, 1998). The scores for Central and Eastern Europe countries, are devised from the methodology devised by Mauro (1995) with data from Quain (1999).

**Income Distribution.** Like ethnolinguistic fragmentation, income distribution may also affect both the level of corruption and the EDD/NEDD ratio. Skewed income distributions may reflect and/or incentivize corruption by politically powerful interest groups (see Section 1.3.9). Low income inequality is often associated with a more

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<sup>45</sup> Permission to reproduce an adapted version of these variable explanations was granted by the MIT University Press (07/16/2012). This material is adapted from p.279-286 of Persson and Tabellini (2003).

extensive government apparatus (lower EDD/NEDD ratio). The measure used to capture the level of income inequality is the GINI coefficient, an interval measure ranging from 0-1. In this case, the Gini index on income distribution is computed as the mean of two observations: the observation nearest to the 1980 benchmark year and the observation nearest to the 1990 benchmark year. Source: Deininger and Squire (1996).

**(Log) Population.** Larger populations are associated with more collective action problems among voters (Rose Ackerman and Kunicova, 2002) and the nature of electoral oversight may also be circumscribed (thus potentially reducing the retrospective vote behind the EDD/NEDD ratio). The effect of population is captured by the (interval) natural log of a country's population (in millions). Source: World Bank (2011).

**Size of the Extractive Industries.** Extractive industries have been associated with generally more rent extraction and also the distortion of economic policy with the proliferation of rents and the representation of mining interests in policy-making (lower EDD/NEDD ratio). In this case, including an interval control to take into the account the importance of mining activities as a percent of GDP is included. Source: UN National Accounts, UN (2010).

**Democratizing (current).** The link between democratization in the current time period and rent extraction is complicated (see Section 1.3.2) with new democracies being more susceptible to corruption than their older counterparts. Also, new democracies have been linked to the nature of policy-making, with new democracies being more susceptible to

clientalism and hence a skewing of policy-making (change in the EDD/NEDD ratio). Even in stable democracies there is variation in press freedom, access to information, and ease of participation in civil society. The level of current democratization may thus directly impact the incentives for corruption and the EDD/NEDD ratio via the level of public scrutiny and participation. Current democratization is measured by an interval indicator which is the average score of a country of indexes for both the civil liberties and political rights components of a liberal democracy. Each index ranges from one-to-seven with lower scores denoting more freedom . Countries whose average score, between the two indicators, ranges between 1.0 and 2.5 are considered to be fully functioning liberal democracies; between 3.0 and 5.5 are considered hybrid-regimes; and between 5.5 and 7.0 are considered non-democratic. ‘Source: Freedom House (2011).

**Demographic Characteristics of the Population.** The proportion of the population that is economically active (between the ages of 16-64) versus the percentage of dependents (under 16 and over 64 years of age) has long been associated with public policy outcomes. Specifically, demographic transition towards societies with low levels of under-16 year olds have been associated with other socio-economic developments, including better governance and less rent extraction (Persson and Tabellini, 2003). Economic policy (the EDD/NEDD ratio) is also clearly affected by the demographics of a society, as either a very youthful or an aging population may require increased publicly-financed goods and services (school provision/pensions) which may adversely affect the EDD/NEDD ratio. In this case, the demographics of the population are controlled for via two interval variables: the percentage of the population that is 15-64 years old and the

percentage of the population that is over 65 (World Bank, 2011). The percentage of the population that is under 15 is dropped to avoid perfect multicollinearity.

**Federalism.** As discussed in Chapter 1, federalism may either facilitate or inhibit increased rent extraction. The existence of federal structures may also alter the EDD/NEDD ratio, as either the substitution of national for local bureaucracies decreases the ratio (less complex oversight of departments) or increases it (more duplicated roles). The measure of federalism is a dichotomous variable that takes the value of one if a country has a federal political system in place (source: Adsera et al, 2001).

**Economic Openness (Current).** While long-term and qualitative (lack of distortions) level of economic openness has been found to be strongly associated with rent extraction, the current and quantitative (size) importance of imports and exports has also, sometimes, been linked to less corruption. This is again due to decreased discretionary power of public policy-makers (see Sections 1.3.6-1.3.7). As before, it is possible that increased short-term openness is associated with a lower EDD/NEDD ratio. The measure of short-term openness is simply an interval measure of the value of imports and exports divided by GDP (Source World Bank, 2011). It thus does not overlap with the definition of long-term openness (see above).

**Religion.** The legacy of religion has long been associated, at least theoretically, with a wide variety of political and economic outcomes. Some studies have indeed found a link between the percentage of the population that adheres to a certain religion and more/less

rent extraction (La Porta et al, 1999). While the link between the nature of economic policy-making (and hence the EDD/NEDD ratio) and religion has never been investigated, there are strong theoretical, if not empirical, arguments linking certain religions to different political-economy outcomes and thus, potentially, EDD/NEDD ratios. The following interval variables control for the percentage of adherents to different religions: percentage of the population in the 1980s that is nominally Protestant, Catholic, or Confucian (heritage – here, a binary variable denoting a Confucian majority heritage) (La Porta et al, 1998).

**Region Dummies.** Just like latitude, the continent in which a country is located may affect its level of corruption. This may be because the continent dummy acts as a proxy variable for other unobservable characteristics. Nevertheless, while less theoretically robust, most regional dummies have been found to correlate with corruption and the components of the EDD/NEDD ratio. The following dummy variables are used: Africa, Asia, Latin America and Europe (the reference ‘continent’ not used to avoid multicollinearity). A dummy variable for high-income democracies, as defined by the OECD, is also included.

**Years Since Independence.** Colonial legacy may be associated with more/less rent extraction as well as different legacies of the size of government (EDD/NEDD ratio). As this legacy may diminish over time, it is essential to control for this effect. The year since independence is thus an interval indicator ranging from 0 to 250 (for non-colonized countries) (Wacziarg, 1996).

Table 2.10 summarises the names of the control variables and their classification, based on the literature, as either (1) basic controls (most robust and necessary for the P-A dynamic) or (2) additional controls (less robust and mediate rather than determine the P-A dynamic). Throughout the rest of this thesis, references to basic and additional controls are shorthand names for the specific controls listed below.

*Table 2.10 Determinants of Corruption (Excluding Institutional and Political Economy Variables of Interest)*

Basic Controls	Additional Controls
Age of democracy	Ethno-linguistic fragmentation
Economic openness (Long-Term)	Income distribution
Geographical Latitude	(log) Population
(log) Per capita income	Size of extractive industries
Primary & secondary school enrolment	Democratisation (current)
	Demographic breakdown of the population
	Economic openness (short-term)
	Percentage of population who adhere to a given religion
	Regional Dummies
	Years since independence

*Source: Author, based on Persson and Tabellini (2003)*

Given the strong theoretical and empirical links between these variables and rent extraction, it is possible to assess, empirically, the extent to which these variables can predict levels of actual perceived rent extraction. This has already been done extensively in the literature with respect to each of the indicators of rent extraction identified above. As noted in Section 1.3, a large number of analyses of the determinants of rent extraction have identified a link between the individual measures of rent extraction, used to generate the latent variable of rent extraction, and certain macro-level attributes of polities.

Specifically, if the arguments advanced in Chapter 1 are correct, it follows that the ability of macro-level independent variables to predict the level of rent extraction in a polity should vary with whether a country is/is not an advanced OECD democracy.

#### **2.4.2 Issues with the Distribution and Sample Size**

**Note on the Distribution of the Dependent Variables.** The dependent variables of interest (the CPI, CC, GE and Tickets) are designed to be interval in nature, meaning that the score of a country reflects its ranking (more or less rent extraction) and that the magnitude of differences in the scores of two countries is meaningful (denotes a specific intensity of differences). However, because the scores on these indicators are constrained (cannot exceed or be less than a given value; for example the CPI only varies between 0-10, the CC and the GE vary from -2.5-2.5 and Tickets varies from 0 to positive infinity) they are not, strictly speaking, drawn from normal distributions (which must, by definition, vary from negative to positive infinity). While many researchers simply use OLS to run regressions on such variables, this is potentially problematic because the nature of these variables means that the residuals of such models may only approximate that of a normal distribution. If the residuals are not normally distributed, then the results of such analyses will be biased either over- or under-estimating the influence of the independent variable of interest on the dependent variable.

Empirical tests of the baseline model below confirm the importance of this issue. Specifically, the results of the Komonov-Smirnov test (not shown), used to empirically evaluate whether the residuals of an OLS analysis approximate a normal distribution fails to confirm that, when using these dependent variables, the residuals from these regression

models approximate a normal distribution. Given the fact the CPI, CC and GE can all be converted into fractional scores (they can be represented as a fraction from 0-1), they come from a binomial distribution, and following the advice of Papke and Woolridge (2006) a maximum-likelihood fractional logit specification is the most appropriate to use in such cases (hereafter referred to as GLM). In the case of the ticket data, because the data is truncated (cannot be negative) but can tend towards positive infinity, a truncated normal distribution specification (hereafter truncated) is used when estimating models using this dependent variable. However, because OLS results are still widely used, they are often reported (at least for the main results) in order to establish whether the outcomes are sensitive to modelling assumptions.

**The Ordinal vs. Interval Controversy.** While it is relatively unproblematic to establish, theoretically and empirically, the distributional approximation of the dependent variables of interest, there is still some controversy regarding whether in fact some of these variables are really interval rather than ordinal in nature. As discussed above (Section 2.1), certain authors (e.g. Bertrand and Mullainathan, 2001) have argued that there may be problems with survey-based questions as they rely on respondents' perceptions. As such, it may be the case that, because respondents to survey questions cannot necessarily correctly assign intensity of values to different scores, the subjective indicators are in fact ordinal rather than interval in nature. That is, while an increase or decrease in scores is associated with more or less rent extraction, this does not necessarily reflect the magnitude (intensity) of changes, only their relative ranking. While it is beyond the scope of this thesis to establish whether in fact the dependent variables of interest, such as the

CPI, CC and GE, are ordinal or interval in nature, an ordered probit specification is utilized and reported alongside the interval results, in order to establish whether these results are sensitive to different modelling assumptions.

**A Note on Dealing with Outlier Values.** Given that the main objective of this thesis is to examine the effect of contextual variables on rent extraction within a high-income democracy context, it is necessary to consider how to deal with the fact that the number of observations is limited, as there are only 22 high-income OECD states. One of the consequences of a small sample size is the fact that one or two outlier observations might significantly affect the results of a regression analysis. Two strategies are used to address this problem throughout the empirical sections of this thesis:

**(1) Increase Sample Size.** By (a) examining whether the results of initial regressions hold for all democracies, and not just high-income democracies, the sample size is increased (n=30). Furthermore, by using a pooled dataset and the interaction between the independent variable of interest and the OECD dummy variable, it becomes possible to test initial results using a much larger number of observations (n=62). Of course, the more heterogeneity of the sample may induce other biases in the data, so reporting all results, starting from baseline results using the more homogenous high-income dataset, are reported throughout the thesis.

**(2) Use of Robust Regression Models (IRLS).** A second way to deal with the regression results is the use of regression models that iteratively re-weigh outlier

observations so as to eliminate their disproportionate effect on the results (Hamilton, 2009). In the most extreme outlier value cases, the weight effectively eliminates the observation ( $\text{weight}=0 \times \text{observation value}$ ). Specifically, the Iterated-Reweighted Least Squares (IRLS) model used in this thesis uses a maximum-likelihood method for iteratively re-weighting (eliminating the effect of outliers observations identified as having a Cook-D statistic greater than 1). This thesis deals systematically with the effect of outlier values. By comparing the results of the IRLS specification with those of the other model specifications (OLS, GLM and Ordered Probit) it becomes possible to establish whether initial results, using one of the three main specifications, is/is not driven by the effects of outlier values.

**A Note on Time Frame.** The majority of variables used (dependent, control and independent variables of interest) are available from the Persson and Tabellini (2003) dataset: virtually all the control variables, the CPI, CC and GE. The indicators consist of average data for the late 1990s to early 2000. In addition, both the Tickets data, the GCB and the UN survey are available for this time period (in fact the Ticket data is only available for this time period). Thus, when running regressions all new variables are selected in order to ensure that they are available for this time period.

As Table 2.11 below clearly indicates, there is a marked and clear distinction in the ability of the basic control variables to explain variation in rent extraction across all countries (pooled sample) and the sub-sample of countries that are high-income

democracies, an outcome which is independent of whether one is utilizing an OLS or a more appropriate maximum likelihood specification<sup>46</sup>. In the pooled sample (Regression model 1 and 3) all five of the ‘basic/most robust’ determinants of rent extraction (see Table 2.10) are significant and negatively associated with more rent extraction (higher CPI scores denote more rent extraction). Thus, consistent with the bulk of the literature of existing work, each one of the basic control variables appears to be negatively associated with more rent extraction at conventional confidence intervals.

However, when separately analysing high-income democracies, where robust evidence exists of contextually induced economic voting, and non-high-income democratic sub-sets, the results are very different. Specifically, with the exception of the log of per capita income, the basic controls are better predictors of rent extraction in non-high-income democracies vis-à-vis high-income democracies. Every basic control is negatively and statistically associated with better governance in non-high-income states (Regression model 2 and 5 with the exception of per capita income in Regression 5). In fact, with the exception of per capita income, the results for non-democracies are more robust vis-à-vis the pooled and the high-income sub-sample (Regression 3 and 6). Conversely, when examining high-income sub-sample (Regression 3 and 6), the only robust predictors of rent extraction are per capita income and the country’s latitude, thus clearly indicating that much of the variance in (political) rent extraction in high-income democracies remains unaccounted for by these control variables. These general results

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<sup>46</sup> As the CPI can only take a value between 0-10 it is drawn from a binominal rather than a normal distribution. Therefore, a maximum likelihood approach, which takes this fact into account, is likely to generate more valid results. While it is sometimes acceptable to use OLS for fractional data, as Diagram 2.02 shows the residual errors are not normally distributed and, therefore, OLS is likely to yield biased results due to its distributional assumptions. For example, in the case of the pooled data, it cannot be rejected, at the 10% confidence interval, using the Kolmogorov-Smirnov that the residuals from the OLS model are not non-normally distributed.

are robust, independent of the dependent variable used. As Appendix A demonstrates, whether the CC, GE or Tickets are used as the dependent variable, the overall qualitative results are the same. The major socio-economic variables are much more robust in anticipating variation in non-high-income democracies vis-à-vis their high-income democracy counterparts. These findings suggest that it is necessary to develop and test new theories linking variation in rent extraction amongst high-income democracies to different levels of rent extraction.

Table 2.11 Rent Extraction and the Macro-Determinants in OECD/Non-OECD Countries

	Dependent Variable: CPI					
	(1) (OLS)	(2) (OLS)	(3) (OLS)	(4) (GLM)	(5) (GLM)	(6) (GLM)
	Raw Score	Raw Score	Raw Score	Raw Score	Raw Score	Raw Score
<b>Age of democracy</b>	-1.04*** (0.27)	1.12*** (0.24)	-0.55 (0.37)	-1.52*** (0.48)	-1.12*** (0.24)	-0.59 (0.84)
<b>Economic openness</b>	-0.0044*** (0.0014)	-0.0056*** (0.0014)	-0.0016 (0.0025)	-0.0058*** (0.0012)	-0.0068** (0.0016)	0.00015 (0.0050)
<b>Latitude</b>	-1.43*** (0.45)	-1.43*** (0.45)	-1.56* (0.85)	-1.67*** (0.53)	-0.84* (0.47)	-3.57** (1.62)
<b>(log) Per capita income</b>	-0.33*** (0.11)	-0.19* (0.11)	-0.77** (0.27)	-2.25*** (0.14)	-11.98 (0.12)	-1.00* (0.53)
<b>School enrolment</b>	-0.010** (0.0039)	-0.0080** (0.0036)	0.017 (0.015)	-0.011** (0.0043)	-0.010*** (0.0035)	-0.018 (0.029)
<b>Sample</b>	All	Non-democracy	High-income democracy	All	Non-democracy	High-income democracy
<b>Number of Observations</b>	57	34	23	57	34	23
<b>R<sup>2</sup>/Log-Likelihood</b>	0.82	0.64	0.49	-25.78	-17.28	-8.10

Robust standard errors in parentheses. \*\*\* denotes significance at the 1% level, \*\* denotes significance at the 5% level, \* denotes significance at the 10% level.

Source: The Author

## 2.5 Conclusion

In order to test any hypothesis regarding the determinants of rent extraction, it is essential to ensure that an effective measure of the phenomenon can be identified and utilized. A good dependent variable for this research agenda must be substantively focused on political rent extraction and be valid and consistent. This Chapter has shown that while both objective and subjective indicators of rent extraction meet these criteria, the most appropriate baseline dependent variables are the composite subjective indicators: the CPI and the CC. As the CPI does not (1) include any questions focused exclusively on unelected officials (the CC does) and (2) has more representative sources versus the CC (nine versus five) it is used to report empirical analyses in the body of the text. However, results using the CC and the Tickets data are available, as appropriate, in Appendix B and are rarely qualitatively different from the CC results.

Having demonstrated the validity and reliability of survey-based indicators of rent extraction, and having identified that the CPI is, marginally, the most valid and efficient indicator for this purpose, it then becomes possible to assess whether existing explanations of rent extraction can robustly predict variation in this phenomenon amongst high-income democracies. This Chapter finds that the most robust socio-economic predictors of rent extraction were extremely useful in accounting for variation in pooled datasets and the sub-sample of non-high-income democracies. However, these predictors, identified in Chapter 1 as conditioning the principal-agent relationship between voters and politicians, are significantly less effective at predicting variation in rent extraction within high-income democracies. In summary, the data is, at the very least, consistent

with the assumption that it is possible to measure rent extraction reasonably accurately, and that the gap in predicting this phenomenon, by recourse to macro-level socio-economic variables, is significantly more limited in high-income democracies versus non-high-income democracies. This set of findings thus provides the basis for subsequent theoretical and empirical analysis regarding the determinants of rent extraction in high-income democracies.

### **3 Explaining Rent Extraction: A Career Concerns Model of the Political Economy of Public Policy**

What explains the variation in the levels of rents in high-income democracies? This Chapter seeks to develop a new theoretical model that can explain the existence and persistence of at least some of this variation in rents. As a result of this theoretical exercise, it is possible to derive a new set of hypotheses that are, subsequently, tested in the ensuing empirical chapters. As explained in Chapter 1, the theoretical model developed below builds on and utilizes the workhorse ‘career concern’ modelling framework first formalized by Holmstrom (1982, reprinted 1999), adapted for institutional political economy purposes by Persson and Tabellini (2001)<sup>47</sup>, and now enriched to take into account the contextual insights of the Duch-Stevenson model (2008).

The generic career concerns model shows how, under certain conditions, elections may alter the incentives that incumbent politicians face to limit the amount of short-term rents they extract. Specifically, the model shows that election-seeking public policy-makers may pursue a policy of short term rent minimization if they anticipate that this will reveal that they are of an average or high competency and, therefore, be allowed to retain office (re-elected). In short, the generic career concerns model seeks to predict how the political economy of public policy can be used to anticipate policy outcomes (the average level of rents extracted at any given time). Importing the insights of the Duch-Stevenson model into this theoretical modelling framework has the effect of formally

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<sup>47</sup> The model has also been extended to multiple principals and multiple agents (Holmstrom and Milgrom, 1998).

demonstrating how changes in context (EDD/NEDD ratio), which alter the magnitude of voter evaluation (already shown by Duch-Stevenson, *ibid*), may also alter the incentives electorally accountable (but not electorally unaccountable) policy-makers have to extract rents. This exercise thus enables the derivation of new and distinct testable hypotheses regarding how context can affect variation in the level of rent extraction amongst high-income democracies which share a common (functional) democratic framework but have varied EDD/NEDD ratios.

Specifically, this Chapter demonstrates how enriching a generic career concerns model to take into account the contextual and institutional dynamics of the economic voting literature can be used to deduce: (1) the strategic incentives policy-makers have, in order to engage in more or less rent extraction, given (2) the contextually determined anticipated reaction of voters. That is, the Chapter models how (1) the existence of electorally accountable/unaccountable policy-makers, (2) the efficacy of elections – which is determined by the distribution of public policy-making responsibility amongst elected officials – as well as (3) the multiplicative effect of both (1) and (2), can generate specific predictions regarding the amount of short-term rent extraction incumbents will consider to be optimal to expropriate. The fact that these predictions regarding the incentive and selection effects of elections remain robust, even when allowing for the possibility of non-electoral control mechanisms of public policy-makers, demonstrates their robustness and hence suitability as a basis for empirical hypothesis testing (see also Appendix C for a further extension of the model that incorporates alternative oversight mechanisms).

Section 3.1 briefly outlines the well-established career concerns model. The aim of this section is to demonstrate the general conditions under which elections and office-holder accountability can alter the short-term marginal propensity for the average elected public policy-maker to engage in rent extraction, as well as ensure that only high-competency office-holders survive in office. Section 3.2 then shows how the possibility that elected officials or their delegates do not undertake a proportion of public policy-making, which is instead made by vested policy-makers, has an effect on the equilibrium level of rents extracted within a polity. This is a theoretical exercise which generates predictions about how changes in the nature of public policy-making (EDD/NEDD ratio) may alter the absolute level of rents in predictable and therefore testable ways. Finally, Section 3.3 has the same rationale as Section 3.2, but is substantively concerned with demonstrating how (potentially) career concerned officials' incentives to alter their level of rent extraction is affected by institutions which determine the nature of electoral competition (namely the distribution of public policy-making responsibility across elected policy-makers-EDDs). Section 3.4 critically examines how the insights of Section 3.2 and Section 3.3 can be combined in order to derive a set of predictions that take into account the joint effects of (1) distribution of policy-making responsibility *between* elected and entrenched policy-makers, as well as (2) the distribution of policy-making *amongst* elected officials, and how this interaction affects the overall incentives faced by policy-makers in different contexts, to vary their level of rent extraction. The Chapter concludes with a critical appraisal of how the hypotheses generated can be used to motivate an empirical investigation that goes beyond the theoretically-derived hypotheses of the existing literature. Finally, in Appendix C, the robustness of the results of the

baseline model is critically evaluated in order to demonstrate that the basic predictions remain robust even when alternative mechanisms of oversight of the bureaucracy are introduced. However, as exploring such alternatives is beyond the scope of this baseline investigation, these theoretical implications are not extensively tested in the subsequent empirical chapters, although it is hoped that these theoretical extensions will form part of the next stage of research into this field.

### **3.1 A Baseline Model of Career Concerns<sup>48</sup>**

The career concerns modelling tradition builds on the earliest insights of the principal-agency literature (Barro, 1973; Ferejohn, 1986) and is consistent with a wide range of agency models (Besley, 2006). Specifically, as discussed in Chapter 1, the baseline career concerns model is a hybrid model combining considerations of selection (office-holders have different competency levels) with electorally-induced incentives, to potentially alter short-term behaviour (moral hazard considerations). Competency here refers to the ability of an incumbent to generate publicly-financed goods efficiently, rather than an intrinsic desire to be congruent with the aspirations of the electorate. In fact, it is assumed that all potential office-holders, irrespective of competency, are, in the absence of strategic incentives, rent-maximizes.

More specifically, the classical career concerns model builds directly on the rational expectations assumptions made by Fama (1980), as noted by Holmstrom (1999). The major motivating assumption of the model is that an agents abilities (competency)

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<sup>48</sup> This section is based on Persson and Tabellini's (2001, p.81-85) formalization of the model. Permission to reproduce an adapted version of this model was obtained from the MIT University Press (16/07/2012).

are revealed over time as her performance is observed and evaluated (ibid)<sup>49</sup> meaning that an incumbent's competency is not known, *a priori*, by either herself or voters (although the average or expected competency of a typical incumbent is common knowledge to both actors). This information assumption is critical because, as will be explained below, it enables the model to predict that career concerned incumbents (those seeking re-election) will have an incentive to pursue a rent-minimizing agenda (in the short-run) in order to uncover and signal their innate competency and (potentially) be selected for re-election. In other words, this assumption provides the critical motivational logic of the model, as it shows that if incumbents care sufficiently about re-election and can estimate that they have a reasonable chance of being of average or above average competency, they will limit their level of rent-extraction in the short term.

The substantive argument behind this assumption, and why it can be justified as reasonable, is that, at the time of first appointment, it is not possible to know how an agent will perform given that she has to undertake activities she has never done before<sup>50</sup>. In other words, as competency is deduced from outputs (over time), and as at the time of first appointment there are no outputs, it is impossible to deduce incumbent competency at that point in time. This motivational intuition may be particularly appropriate for

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<sup>49</sup> This is in fact similar to Fiorina's (1981) argument that retrospective evaluation today can be used to forecast future performance – prospective evaluation (see Introduction).

<sup>50</sup> Relaxing this assumption could have several different effects. If the agent but not voters knew their competency in advance, then only competent types would be incentivized to be career concerned (rent-minimize in the short run), while lower competency types would simply rent maximize as they can anticipate their inability to get re-elected (see Persson and Tabellini, 2001). While this would be a weaker result (a lower percentage of first period incumbents would be career concerned) the ability of voter to select higher competency incumbents and hence mitigate second period public goods under-provision would still work (selection effect). Thus, even when relaxing the assumption of no *a priori* knowledge about specific competency, the career concerns model still allows for the selection effect (as in the original Duch-Stevenson model) and a weaker moral hazard effect. While it may be interesting to investigate this, it is beyond the prerogative of this book, especially given that it only weakens the magnitude not the qualitative nature of the results. Given the additional complexity involved, relaxing this assumption is not pursued, although interested readers should consult Persson and Tabellini (2001).

elected officials, as being elected to office and undertaking the activities this entails (making national legislation, oversight of large government departments etc.), are not typical of most other careers<sup>51</sup>. Apart from this intuitive and intrinsic theoretical consistency, there is also now a substantial body of empirical support for the career concerns model (e.g. Alt et al, 2011)- as well as its assumptions- namely that voters care about the incumbent's overall/general competency and update their beliefs about this based on the incumbent's performance in a given policy domain (Green and Jennings, 2012). Thus, not only is the model able to generate potentially falsifiable hypotheses, but the empirical evidence consistent with its expectations is quite robust, making it an ideal generic model to adopt as a basis for modelling the political economy of public policy-making.

Furthermore, as noted in Chapter 1, it is relatively simple to adapt the classical career concerns model to a political economy context. Persson and Tabellini (2001) do this by proving that if voters can credibly commit to a re-election threshold (as in Ferejohn, 1986), based on an incumbent being of a certain competency level, then it is possible to incentivize career concerned incumbents to desist from rent extraction in the short term in order to obtain re-election. Thus, the discrete re-election threshold substitutes for the continuous wage maximization of the classical version of the model (developed to explain the behaviour of managers in firms), but does not change the basic incentive structure of the model.

Finally, as also documented in Chapter 1, the career concerns model has some notable advantages over rival formal models, because it does not make as many

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<sup>51</sup> It is important to note that more sophisticated versions of the career concerns model, in which the agent has some, albeit imperfect knowledge of her own competency, can still yield the same theoretical hypotheses (Persson and Tabellini, 2001).

restrictive assumptions as other models do, even though it can derive many of the same results. Specifically, (1) by assuming the existence of both moral hazard and adverse selection, the model does not have to assume away either type of pathology – which is difficult to defend in reality but is quite commonly assumed in other models; (2) because of the assumption of rational expectations, the model does not have to make a restrictive assumption regarding whether voters are exclusively retrospective or prospective in their evaluation. This therefore, once again, avoids unnecessarily restrictive assumptions. The model is thus able to derive the same results as purely selection and moral hazard models (the conditions under which incumbents can get re-elected) without excessively restrictive assumptions. The only potential caveat of the model is the fact that the career concerns model assumes that adverse selection and moral hazard incentives work in tandem, because both voters and incumbents do not know the latter's competency (see Chapter 1 and next paragraph). If this assumption is relaxed, the prediction of the model becomes more complex (see Chapter 7). However, despite this caveat, the career concern modelling framework is clearly a relatively parsimonious model that is still able to make predictions that are as specific as purely adverse selection or moral hazard models (see Chapter 1), without having to make as many restrictive theoretical assumptions that impinge on its likelihood to reflect real world incentives.

Given its parsimonious set of assumptions and adaptations to the field of political economy, the generic career concerns model shows how the existence of elections (potentially) alters the behaviour of incumbents. Specifically, as noted above, the critical and essential assumption of the model is that, initially, both voters and incumbents are not aware of the latter's competency. That is, they are not aware of the incumbent's

ability to generate publicly-financed goods<sup>52</sup>. As publicly-financed goods are a residual outcome of taxation, once an incumbent has determined the amount of rents she extracts, the model predicts that (1) if incumbents' value remaining in office (that is they are career concerned) and there is a good expected probability that they are of average or high competency (both voters and incumbents know what the likelihood is that an incumbent will be of average or above average competency); and (2) if voters can credibly commit to re-electing high competency incumbents<sup>53</sup>, then incumbents will desist from rent extraction in the short term in order to demonstrate (signal) their competency (ability to generate publicly-financed goods). Thus the assumption that incumbents, as well as voters, do not know their competency to begin with, is so critical because this assumption provides the rationale behind why the level of rent extraction may vary across contexts. The more likely a context is to provide career concerned incumbents with the ability to demonstrate their competency, the fewer rents (due to less moral hazard) and the greater the ability of voters to retain only higher quality incumbents.

As discussed more extensively in Chapter 7, if this assumption is relaxed, and incumbents know their own competence, then rent-minimization will only occur if incumbents are of average or higher competency; lower competency incumbents, knowing that at the end of the first period they will lose office regardless of their rent-minimizing efforts, will simply rent-maximize. However, as noted above, despite the

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<sup>52</sup> While this assumption differs from most competency models, in which it is assumed that the incumbent knows her innate ability, this is not an unrealistic assumption. Until they are in office, potential office holders have no experience of 'steering the ship of state.' Evidence that politicians with specific goals and aspirations were affected by their miscalculation of being in office abound e.g. Jimmy Carter, Tony Blair, etc.

<sup>53</sup> It is important to note that voters are better off in the second period with a high competency rent-maximizing incumbent, as even though rent extraction is high, more publicly-financed goods are still generated.

need for the assumption of no knowledge of individual competency at the beginning of the game, the career concerns model is significantly more parsimonious in its other assumptions vis-à-vis rival models, and is therefore still the most appropriate model to use, albeit with caution.

Consequently, while this basic career concerns model depends on one critical assumption<sup>54</sup>, this basic workhorse model (Persson and Tabellini 2001) serves as a robust basis from which to incorporate the substantive insights of the decision theoretic and exclusive selection, assuming the Duch-Stevenson model into a game theoretic framework.

### 3.1.1 A Simple Two Period Game<sup>55</sup>

Consider a two period game in which an office-holder is randomly assigned, by nature, to hold office for one period, after which voters – who can credibly commit to a re-election rule – elect to either return her to office for a second period, or install a new office-holder drawn from the same distribution. For simplicity, assume that taxes,  $\tau$ , are fixed at  $\bar{\tau}$  and the government budget has to be balanced in both periods ( $t=1,2$ ) of the game.

Individual (i) voter utility in both periods,  $w_{it}$ , is a function of (1) publicly-financed goods and services,  $g_t$ ; and (2) their post-tax income  $y(1 - \bar{\tau})$ ; the specific desirability of public to private consumption is exogenously determined by a parameter

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<sup>54</sup> See Dewatripont, Jewitt and Tirole (1999), Dixit (1997), and Holmstrom and Milgrom (1998) for extensions.

<sup>55</sup> This section is based on Persson and Tabellini's (2001, p.81-85) formalization of the model. Permission to reproduce an adapted version of this model was obtained from the MIT University Press (16/07/2012).

$\lambda \geq 1$  and, for simplicity, it is assumed that voters' marginal utility from public goods consumption is constant<sup>56</sup>. Thus, voters' welfare is determined by:

$$w_{it} = y(1 - \bar{\tau}) + \lambda g_t \tag{3.01}$$

The incumbent's only choice in the model is how to use tax revenue, which they can either allocate to (1) provide publicly-financed goods (pleasing voters); or (2) appropriate rents ( $r$ ) for themselves. Thus the government budget constraint is:

$$g_t = \varepsilon_i(\bar{\tau}y - r) \tag{3.02}$$

where  $\varepsilon_i$  is a variable capturing the incumbent's effort in generating publicly-financed goods. A higher value for  $\varepsilon_i$  denotes more competent incumbents, as the same scarce resources yield a higher flow of positive outcomes for voters. That is, even though all office-holders are rent-maximizers, in the second period high competency office-holders still produce more publicly-financed goods. Thus,  $\varepsilon_i$  is a feature of the incumbent, which

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<sup>56</sup> An assumption that makes voters risk-neutral with regard to the kind of uncertainty is discussed below.

is assumed to persist over time, so that an incumbent's ability is the same in both time periods.<sup>57</sup> It is assumed that  $\varepsilon_i$  is a random draw with uniform distribution<sup>58</sup>:

$$\left[ 1 - \frac{1}{2\chi}, 1 + \frac{1}{2\chi} \right]$$

(3.03)

Thus, the expected value of  $\varepsilon_i$  is therefore 1 and its density is therefore  $\chi$ . The consequences of the range of this distribution is that irrespective of the current realization of  $\varepsilon$  and, given risk-neutral preferences, a substantive choice between rents and publicly-financed goods is always possible. If an incumbent is removed from office, a new one is appointed whose competence is drawn, at random, from the same distribution as the incumbent.

Rents,  $r$ , are assumed to be non-negative<sup>59</sup> but their upper bound is also assumed to be below the available tax revenue<sup>60</sup>; that is,  $r_1 \leq \bar{r} < \bar{\tau}y$ . Consequently, given these preferences and assumptions, the objective of the incumbent office-holder in period 1 is to maximize her utility over the two period game. That is:

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<sup>57</sup> As will be shown below, this assumption can be relaxed. As long as the competency persists between periods and this is sufficiently robust, this will not alter the results of the model. However, this is avoided here in order to retain notational simplicity.

<sup>58</sup> As long as the distribution from which incumbents are drawn is common knowledge, the specific distribution does not affect the model's predictions. In the formalization below, a uniform distribution is used: agents of different competency levels have an equal chance of being selected at random. The use of this distribution is beneficial because its uniformity minimizes notational complexity. However, there is no reason why other distributions could not be used instead.

<sup>59</sup> That is rents can range from zero (non-existent) to a positive number that is less than the tax revenue

<sup>60</sup> This assumption gives voters a motive to keep competent incumbents in office.

$$w_i = r_1 + p_i \delta (R + r_2)$$

(3.04)

$p_i$  is the probability that the incumbent is re-elected,  $\delta$  ( $0 \leq \delta \leq 1$ ) is the time discount factor, and  $R$  is the exogenous ego-rents<sup>61</sup> associated with winning re-election. Policy commitments are not possible ahead of elections. The timing of events in the game is the following: (1) an incumbent is in office, in the first period, and chooses rents for the said period  $r_1$ , without knowing her own competence  $\varepsilon_i$ ; (2) the value of  $\varepsilon_i$  is realised and publicly-financed goods provision commences-  $g_1$  is residually determined so as to satisfy condition (3.02) above; at this point voters observe their own utility but do not observe  $\varepsilon_i$  or  $r_1$ ; (3) at this point elections are held. If the incumbent wins, her competency remains  $\varepsilon_i$ ; if she loses, an opponent with a competency drawn at random from the same distribution as the previous incumbent enters office; 4) period 2 rents,  $r_2$ , are set and publicly financed goods are residually determined, again constrained by the need to satisfy condition 3.02 above.

Given this set-up, office-holders in the second period have no incentive to minimize rent-extraction; they will always appropriate maximum rents; that is,  $r_2 = \bar{r}$ , implying public spending at  $g_2 = \varepsilon_i(\bar{\tau}y - \bar{r})$ . Voters however, are still clearly better off

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<sup>61</sup> Ego rents can be defined as ‘the non-pecuniary benefit from being in office’ (Besley, 2006, p.40) and/or being re-elected. As the large literature in psychology suggests policy-makers may derive utility from the self worth, validation and general self-esteem boost associated from re-election. Several political economy models have incorporated ego rents into policy-makers utility function e.g. Rogoff (1990), and Maskin and Tirole (2004).

with a more competent incumbent (higher  $\varepsilon_i$ ) as this gives them higher second period utility (production of more publicly financed goods via the residual taxes that cannot be expropriated for the purposes of rent extraction). Consequently, voters use elections to reappoint competent incumbents and remove incompetent ones, taking into account their observed utility in period 1 (which can be used to calculate both  $\varepsilon_i$  and  $r_1$ ) and knowing that the alternative candidate's expected competency is 1, i.e.,  $E(\varepsilon_i) = 1$ .

### 3.1.2 Equilibrium

The equilibrium outcome depends on how the probability of re-election conditions the behaviour of incumbents. At the time of the election, voters know that the incumbent is maximizing expression (3.04). If  $\tilde{r}_1$  denote the solution to the incumbent's specific optimization problem in period 1 (yet to be determined)<sup>62</sup>. At the time of the election, voters know  $g_1$  and  $\bar{\tau}$  and can therefore use this information to deduce  $\tilde{r}_1$ . Hence, given expression (3.02), voters can estimate the competency of the incumbent,  $\tilde{\varepsilon}_i$ :

$$\varepsilon_i = \frac{g_1}{\tau y - \tilde{r}} \tag{3.05}$$

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<sup>62</sup> Note that  $\tilde{r}_1$  does not depend on  $\varepsilon$ , since competence is not yet known.

The voters' behaviour is therefore straightforward to describe. The incumbent is re-elected only if her estimated competency exceeds the expected competency of her potential replacement. That is:

$$p_i = \begin{cases} 1 & \text{if } \tilde{\varepsilon} \geq E(\varepsilon) \\ 0 & \text{otherwise} \end{cases} \quad (3.06)$$

It is now possible to determine the probability of winning the elections (as perceived by the incumbent) in the first period when she is choosing the amount of rents,  $\tilde{r}_1$ . By assumption, the incumbent does not yet know her own competence. Her probability of re-election,  $p_i$ , is consequently, given by  $\text{Prob}[\tilde{p}_i = 1] = \text{Prob}[\tilde{\varepsilon}_i = 1]$ . The incumbent sets  $r_1$ , knowing that  $g_1$  is residually determined given the exogenously determined budget constraint:

$$g_1 = \varepsilon_i(\bar{y} - r_1) \quad (3.07)$$

Combining (3.07) and (3.06), the likelihood of event  $\tilde{\varepsilon}_i \geq 1$  is equivalent to the event:

$$\varepsilon_i \geq \frac{\bar{\tau}y - \tilde{r}_1}{\tau y - r_1} \tag{3.08}$$

From the perspective of the incumbent, therefore, the probability of re-election,  $p_1$ , is in fact the same as the probability that (3.08) is satisfied. Given the assumption that the distribution of  $\varepsilon_i$  is uniform, this probability can be written as:

$$p_1 = \frac{1}{2} + \chi \left[ \frac{\bar{\tau}y - \tilde{r}_{il}}{\tau y - r_{il}} \right] \tag{3.09}$$

The incumbent subsequently maximizes (3.04) subject to (3.09) by choice of  $r_1$ . This yields in the following first order condition<sup>63</sup>:

$$1 - \frac{\chi(\bar{\tau}y - \tilde{r}_{il})}{(\bar{\tau}y - r_{il})^2} \delta(R + \bar{r}) = 0$$

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<sup>63</sup> Setting the first derivative of the utility derived to zero (in order to locate the maximization value, assuming the second derivative is negative). More generally, a first order condition is the process of setting to zero the first derivative of the function being optimized, given a variable that can be controlled for.

(3.10)

In equilibrium, the incumbent's optimal choice must be consistent with the voters' conjectures about her choices:  $r_1 = \tilde{r}_1$ . Thus, solving (3.10) for  $r_1$ , the equilibrium rents in the first period can be derived by:

$$r_1 = \bar{\tau}y - \chi\delta(R + \bar{r}) \tag{3.11}$$

Given that  $r_1 = \tilde{r}_1$ , it follows from the logic of (3.09) that in equilibrium the probability of winning is  $p_1 = \frac{1}{2}$ , an outcome which is consistent with the fact that the incumbent does not know her own competency in the first period<sup>64</sup>. Thus, assuming: 1) that the level of uncertainty regarding an incumbent's competency is not excessive (a higher value of  $\chi$ ); and/or 2) the rewards of remaining in office are sufficiently high (a higher value of  $\delta(R + \bar{r})$ ), elections will work to reduce the rent extraction propensity of incumbents in the first period, in order to secure re-election. Of course, rents will still exist, as in the second period, as the re-elected and hence relatively high-competency incumbent will always pursue a rent-maximizing strategy.

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<sup>64</sup> While the logic and assumptions of the game ensures that voters will re-elect high-competency incumbents, it is possible to show how voters can credibly commit to re-electing any incumbent whose competency is above a certain threshold. However, as this does not add anything to the analysis except additional notation it is not pursued here. Interested readers are referred to Persson and Tabellini (2001).

### **3.2 Career Concerns and Context: Vested Rent-Maximizing Actors**

In the simple model above, the strategic interaction of voters and incumbents coupled with the density function of competency and the value of retaining office determine the level of equilibrium rents in the first period. However, it is realistic to assume that in many policy-making contexts, elected officials may only be responsible for generating a proportion of the rents and publicly-financed goods available. Specifically, if: 1) a proportion of public policy is made by electorally unaccountable actors (vested bureaucrats, interest groups, etc.) whose objective is to maximize their private gains (will always pursue a rent-maximizing strategy); and 2) it is common knowledge which public policy outcomes are generated by electorally accountable or electorally unaccountable actors, it follows that, as the proportion of public policy outcomes determined by elected officials falls, the absolute level of rents should, accordingly, increase (as long as elected officials are still incentivized to seek re-election).

The intuition behind examining the role of elected and unelected officials emanates from Duch and Stevenson's (2008, pp.140-147) argument which 'distinguish[es] between two types of decision-makers: EDDs and NEDDs (see Chapter 1), and can be useful in understanding the reaction of voters to elected officials.' (ibid) While Duch and Stevenson use this analytical framework to examine how context (the EDD/NEDD ratio) affects the clarity of a competency signal, with uncertainty and a forward looking electorate (as will now be shown) the same framework can be productively used in a career concerns modelling context.

Formally, let the political elite be composed of two actors: EDDs and NEDDs<sup>65</sup>. These two actors are drawn from the same distribution,  $\chi$ , and have the same average competency of 1 (assuming 3.02). The crucial difference between the two is that NEDDs are not subject to re-election. Thus, they are not potentially motivated by strategic concerns, as are EDDs, and therefore their optimal action is to pursue rent-maximization in both periods of the game. The preferences of NEDDs,  $j$ , over both periods of the game can be captured by modifying (3.04) to take their electoral insularity into account; that is:

$$w_j = r_1 + \delta(r_2) \tag{3.12}$$

Public policy-making is assumed to be the product of the aggregation of decisions made by EDDs and NEDDs and is limited by the exogenously determined level of taxation. Formally, define  $A$  as the aggregate number of consequential policy-making decisions undertaken by EDDs, and let  $B$  be the aggregate number of consequential decisions made by NEDDs. Let  $\alpha$  be the proportion of consequential policy-decisions made by EDDs, that is,  $\alpha = \left( \frac{A}{A+B} \right)$ . Given the finite number of public policy decisions, and the assumption of a democratic context, meaning that elected officials must exercise some powers,  $\alpha$  must satisfy  $0 < \alpha \leq 1$ . Let  $\beta$  be the proportion of consequential public policy-making decisions made by NEDDs; that is  $\beta = \left( \frac{B}{A+B} \right)$ . Here,  $\beta$  must satisfy  $0 < \beta < 1$  and, by definition,  $1 - \alpha = \beta$ .

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<sup>65</sup> As in Duch and Stevenson (2008), this group consists of electorally insulated bureaucrats, rent-seeking interest groups, etc. It is also possible to achieve the same result by assuming that the competency of bureaucrats is fixed and they simply pursue a rent-maximizing strategy.

Recall that it is common knowledge how consequential policy decisions are distributed between EDDs and NEDDs. Therefore, when deducing the competency of the incumbent (EDD), voters, as well as the incumbent herself, will have to take into account the fact that the incumbent does not, unless  $\alpha = 1$ , determine a portion of how tax revenue is allocated between rent extraction and the provision of publicly-financed goods. Specifically, the incumbent's competency will only be assessed based on the use of the portion of tax revenue that she is responsible for allocating. The competency of the EDD can, therefore, still be deduced with certainty as in the baseline model (previous section). The only difference is that now voters will first have to deduce the competency of NEDDs before being able to determine the competency of EDDs. The overall government budget constraint, (3.02), is now determined by the actions of both EDDs and NEDDs. That is:

$$g_{ijt} = \varepsilon_i(\alpha\bar{\tau}y - r_i) + \varepsilon_j(\beta\bar{\tau}y - r_j) \quad (3.13)$$

$\varepsilon_i$  is the competency of the incumbent EDD,  $\tau y_i$  is the tax revenue controlled by her,  $r_i$  is the rent extraction undertaken by her;  $\varepsilon_j$  is the competency of the NEDD,  $\tau y_j$  is the tax revenue controlled by her, and  $r_j$  is the rent extraction undertaken by her.

Beginning with the NEDDs, their optimal strategy is to set  $r_j = \bar{r}_j$  in both time periods ( $t = 1, t = 2$ ), given their lack of electoral or any other strategic considerations, and given the budget,  $\beta\tau y_j$ , they control. Formally the budget constraint of NEDDs is:

$$g_j = \varepsilon_j(\beta\bar{\tau}y - r_j)$$

(3.14)

The competency of NEDDs can be deduced from the residual taxes used to generate publicly-financed goods (recall that  $\bar{r} < \tau y$ ). Thus, the expected solution,  $\varepsilon_j$ , of NEDDs, and hence their contribution to the overall level of rents and publicly-financed goods in the first period, is:

$$\tilde{\varepsilon}_j = \frac{g_{j1}}{\beta\bar{\tau}y - r_{j1}}$$

(3.15)

The competency of NEDDs does not affect their ability to retain policy-making influence; effectively  $p_j = 1$ . Therefore, her actions in the first period do not determine her ability to act in the second period. Thus, the NEDD simply maximizes  $w = r_{j1}$ , subject to her current budget constraint and ignoring what this reveals about their competency. Thus, NEDDs' effective budget constraint is simply  $\beta\bar{\tau}y$  by choice of  $r_{j1}$ .

That is:

$$\beta\bar{\tau}y - r_{j1} \geq 0$$

(3.16)

Differentiating the utility of NEDDs,  $w_j$ , subject to (3.16), yields a corner solution<sup>66</sup> (differentiating with respect  $r_{j1}$  yields 1). Therefore, NEDDs always pursue a rent-maximizing strategy, only generating the publicly-financed goods whose tax cannot be expropriated:

$$\beta\bar{\tau}y - r_{1j} \tag{3.17}$$

That is, in the first period the NEDD maximizes her rent extraction activities<sup>67</sup>. While NEDDs always pursue a rent-maximizing strategy, the residual publicly-financed goods,  $g_{j1}$ , generated by the tax revenue that cannot be expropriated,  $(\tau - \bar{\tau})$ , reveals the NEDDs' competency, (3.14), which allows their specific contribution to be calculated with certainty. It is now possible to deduce, with certainty, the competency of EDDs, given (3.13) and the behaviour of NEDDs. Formally, the budget constraint faced by the EDD is:

$$g_i = (\alpha\bar{\tau}y - r_i)$$

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<sup>66</sup> Corner solutions are special cases in which the maximization of an agent's utility is to set her consumption/action of a given good to zero. (An alternative definition is a situation in which an interior solution is not optimal). For example, in this case, NEDDs do not face electoral pressure to pursue a rent minimizing policy. Thus, they set their effort level to zero (corner solution) and, as a consequence, receive maximal rents.

<sup>67</sup> The net present value of the rents NEDDs collect over the two period game is  $(\beta\bar{\tau}y - r_{1j}) + \delta(\beta\bar{\tau}y - r_{2j})$ .

(3.18)

As in the basic model, the EDD is only reappointed if her competency is estimated to be greater than or equal to 1 (see 3.06). As before, the EDD and voters do not know the former's competency but can calculate her probability for re-election:  $Pr ob[\tilde{p}_i = 1] = Pr ob[\tilde{\varepsilon}_i = 1]$ , which is simply the level of  $r_{il}$  set by the EDD knowing that the level of  $g_{il}$  is residually determined from the electorally dependent budget constraint  $\alpha\tau y$ . The estimated competency of the incumbent EDDs,  $\tilde{\varepsilon}_i$ , can be calculated by:

$$\tilde{\varepsilon}_i = \frac{g_{il}}{\alpha\tau y - r_{il}}$$

(3.19)

The interesting thing to note about (3.19) is that unless there are no NEDDs (that is,  $\beta_{j1}^* = 0$ ) the overall level of rents in a polity will be higher, *ceteris paribus*, as  $\beta \rightarrow 1$ . As will now be shown, this is not due to the fact that voters are any less capable of evaluating the competency of the incumbent, but simply because a larger percentage of policy-making is not under the control of agents who can be incentivized via elections to refrain from maximal short-term rent extraction. Thus, the effect of a higher (lower) EDD/NEDD ratio is because voters will only use the EDD's contribution to policy-making to assess her competency. Pervasive corruption may persist in a polity due to the activity of NEDDs, even if the democratic context works to limit rent extraction by EDDs.

Combining (3.18) and (3.19), the event  $\tilde{\varepsilon}_i \geq 1$  is equivalent to:

$$\varepsilon_i \geq \frac{\alpha\bar{\tau}y - \tilde{r}_i}{\alpha\bar{\tau}y - r_i} \quad (3.20)$$

Consequently, the probability of winning the election is, as before, the probability that (3.20) is satisfied. It is important to note that  $\tilde{r}$  here refers to the rent solution over those substantive policy decisions an EDD has discretion, and not the rents generated by NEDDs. Given the above noted distribution assumptions (3.03), the task discounted probability<sup>68</sup>,  $p_1$ , is :

$$p_1 = \frac{1}{2} + \chi \left[ 1 - \frac{\alpha\bar{\tau}y - \tilde{r}_i}{\alpha\bar{\tau}y - r_i} \right] \quad (3.21)$$

Thus, the incumbent maximizes (3.11) subject to (3.21) by choice of  $r_i$ . Yielding the resulting first order condition is:

$$1 - \frac{\chi(\alpha\bar{\tau}y - \tilde{r}_i)}{(\alpha\bar{\tau}y - r_i)^2} \delta(R + \bar{r}) = 0 \quad (3.22)$$

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<sup>68</sup> The likelihood of being re-elected given the distribution of innate competency, the actions of the EDD and the expected actions of the EDD of average competency.

In equilibrium, EDDs' choices must be consistent with voters' conjunctures about those choices:

$$r_{i1} = \alpha \bar{\tau} y - \chi \delta (R + \bar{r}) \quad (3.23)$$

Thus, the overall level of rents in a polity is dependent on the policy-making powers of EDDs and NEDDs. Therefore, it is possible to estimate aggregate first period rents (recall the relationship between  $w_j = r_1 + \delta(r_2)$  and  $\beta$ <sup>69</sup>):

$$r_{ij1} = (\alpha \bar{\tau} y - \chi \delta (R + \alpha \bar{\tau} y) + (1 - \alpha) \bar{\tau} y) \quad (3.24)$$

Differentiating with respect to  $\alpha$  yields the comparative effects of altering the EDD/NEDD ratio on overall rents in the first period. Intuitively, as the first order derivative with respect to  $\alpha$  has a negative sign,  $\partial r_{ij1} / \partial \alpha = (\bar{\tau} y - \chi \delta (\bar{\tau} y) - \bar{\tau} y)$ , the amount of rents extracted decreases as  $\alpha$  increases. This is because  $|\chi \delta (\bar{\tau} y)|$  increases as  $\alpha \rightarrow 1$  so that the gap between  $|\bar{\tau} y - \chi \delta (\bar{\tau} y)|$  and  $|\bar{\tau} y|$  increases. Intuitively, as  $\alpha \rightarrow 1$ , then a greater percentage of first period rents will be derived by the utility considerations of

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<sup>69</sup> Rents can only be expropriated from the policy tasks from which an actor has discretion. Therefore,  $\chi \delta (r_i) = \chi \delta (\alpha \bar{\tau} y)$ , that is, the amount of rents an EDD can export is a positive monotonic function of the policy-making discretion her office accords her. Also by definition,  $\beta = 1 - \alpha$ .

career concerned<sup>70</sup> EDDs who have an incentive to take into account the possibility of retaining office ( $\bar{\tau}y - \chi\delta(\bar{\tau}y)$ ). Conversely, as  $\alpha \rightarrow 1$ , a greater percentage of first period rents will be derived by the utility considerations of NEDDs who have no incentive to pursue anything other than a rent-maximizing strategy ( $\bar{\tau}y$ ). Thus, on the margin, as  $\bar{\tau}y - \chi\delta(\bar{\tau}y) < \bar{\tau}y$  it follows that a higher EDD/NEDD ratio will reduce the average incidence of rents over the two periods. This is because in the first period, the discretionary policy-maker has marginally more incentives to limit her rent-extracting activities in order to secure her tenure in office.

How robust is this extension of the model? For simplicity, as in Persson and Tabellini (2001), the model focuses solely on the incentivizing and selection effect of elections. However, it is in fact quite simple to enrich the model to take into account the possibility that both electorally accountable and electorally unaccountable policy-makers may be subject to alternative, common oversight mechanisms that may ensure that policy-makers who engage in excessive rent extraction in the first period are removed from office<sup>71</sup>. However, as the focus of this investigation is on the differences between electorally accountable and electorally unaccountable policy-makers, it is not necessary to model such common factors, as they increase algebraic complexity without altering the basic results. A more interesting extension of the model is to examine how the existence of non-electoral mechanisms of oversight (which affect electorally dependent and electorally independent differently; see Appendix C) affects the robustness of the model's predictions. While such an extension of the model does generate more sophisticated

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<sup>70</sup> Obviously, if EDDs are not career concerned they will pursue a short-term strategy of rent-maximization and thus their behavior will be similar to that of NEDDs. Intuitively, if EDDs are not career concerned,  $|\chi\delta(\bar{\tau}y)|$  would tend towards zero and thus the inequality  $\bar{\tau}y - \chi\delta(\bar{\tau}y) < \bar{\tau}y$ .

<sup>71</sup> Such mechanisms may include the existence of a free media etc.

hypotheses (which are tested in Chapter 4) the main result holds; that is, it is still the case that, conditional on certain parameter values for the different non-electoral oversight mechanisms, the existence of elections continues to provide an additional incentive for electorally dependent policy-makers to minimize rent extraction, that does not exist for their non-electorally accountable counterparts (see Appendix 3.5). In short, it is possible to derive the basic hypotheses of interest from this model without the need for further mathematical complexity.

### **3.3 Career Concerns and Context: The Efficacy of Elections (EoE)**

If the need for re-election does indeed have the critical effect on incentives and selection formalized above, it follows that *how* elections take place may also be critical in explaining the level of rent extraction. As the now huge literature on the economic effect of constitutions (Persson and Tabellini, 2003) attests, there are good theoretical reasons to expect that the nature of electoral competition may impact on the magnitude of such selective and incentive effects; that is, the efficacy that elections accord voters to incentivize and retain incumbents with certain characteristics. As noted in Chapter 1, a large part of the economic voting literature is concerned with investigating how specific institutions (especially the electoral system and form of government<sup>72</sup>) affect the magnitude of retrospective evaluation within a democratic context.

While much of this economic literature has been motivated by a classical ‘clarity of responsibility’ approach, Duch and Stevenson (2008) have shown that even when rational voters can analyze/anticipate the complexity of policy-making, there may be

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<sup>72</sup> The seminal contribution here being Powell and Whitten (1993).

conditions under which retrospective evaluation may be problematic. Specifically, Duch and Stevenson (ibid) show that when the distribution of policy-making responsibility amongst elected officials is equal, it becomes impossible for voters to distinguish between the individual competency (of an incumbent or party) and that of the average electorally accountable policy-maker. As will now be shown formally, under such conditions (although not under conditions of less equal distribution of policy-making distribution) elected officials lose their incentive to pursue a rent-minimizing strategy, as such officials rationally anticipate that their individual actions cannot be evaluated by voters. This generates a classical ‘tragedy of the commons’ dynamic in which individual policy-makers have an incentive to pursue rent-maximizing strategies, as only the average, rather than their individual (marginal), contribution to rent extraction can be observed. Anticipating this, voters know that all incumbents will pursue a rent maximizing strategy, and thus their re-election prospects are now independent of their actions. The way elections condition incentives (the efficacy of elections: EoE), therefore, can affect the incentives of EDDs, independent of the EDD/NEDD ratio.

The exercise, of investigating how specific variation in the distribution of policy-making responsibility amongst EDDs affects the magnitude of retrospective evaluation, and hence EDD incentives, has the objective of making the theoretical predictions of the model more nuanced. The analysis allows for a more specific examination of how variation in institutions within democracies affects the level of rents independently and in conjunction with the EDD/NEDD ratio (see Section 3.3.1). This theoretical extension, therefore, motivates the empirical analysis of Chapter 6, which brings together all institutions and contextual factors that affect the incentives of elected

policy-makers to engage in different levels of rent extraction. Thus, this sub-section facilitates the development of a theoretical link between some of the institutions identified in incentivizing rent extraction amongst EDDs, which exists in the economic voting literature.

### **3.3.1 The Efficacy of Elections and Career Concerns**

The extent to which office-holders make policy (EDD/NEDD ratio), as well as the ability of voters to reward/punish them individually via elections for their performance, have been shown to alter the incentives for rent extraction. However, in many cases, many areas of policy-making are made jointly by a set of office-holders (usually as members of the same political party/coalition). At the limit, if the distribution of responsibility for joint policy-making is perfectly equal over all policy areas, it becomes impossible to deduce the individual competency of a given incumbent (here defined as either an individual or a cohesive political party).

However, if policy-making is unequal at least with respect to some joint decisions then it becomes possible to incentivize a minimization in rent extraction, at least in these policy domains, as incumbents know that voters will be able to deduce their competency given their actions. Given the variety of decision-making, it is quite possible that different policy areas may engender different distributions of administrative responsibility. Thus, the provision of constituency goods and services or the decisions to accept a bribe or campaign contributions are likely to be made by the individual incumbent (highly unequal distribution of responsibility). At the national level, the existence of a strong party system may engender a more equal distribution of responsibility, with members of

the ruling party/coalition being jointly responsible for public policy-making. However, constitutional amendments, which require super-majorities, may demand an even more equal distribution of responsibility, as opposition incumbents/parties have to vote in favour of any such change.

While the existence of at least one policy area – in which the distribution of policy-making responsibility is unequal – is sufficient to deduce the incumbent's competency, the existence of a more equal distribution of administrative responsibility still affects the average level of rent extraction. This is because both incumbents and voters do not use the policy outcomes (level of rents) generated under conditions of equal responsibility to update their beliefs about the said incumbent's competency. Thus, even though they can deduce an incumbent's competency from the sub-set of decisions made under conditions of more unequal decision-making, they cannot incentivize rent-minimization in those policy areas in which responsibility is more equally distributed. Therefore, it is possible to anticipate that the distribution of public policy-making responsibility for the joint production of national publicly-financed goods and rents will decrease or increase the ability of voters to utilize elections to incentivize rent-minimization amongst career concerned incumbents. That is, the distribution of responsibility directly affects the efficacy of elections (EoE).

Formally, let  $\theta \in [0,1]$  be a binary variable that denotes the nature of the policy-making process. If the realization of  $\theta = 0$ , then voters can only deduce the average competency of incumbents ( $i=1\dots n$ ) responsible for generating publicly-financed goods and rents. That is, (3.02) becomes:

$$\sum_{i=1}^n \frac{g_i}{n} = \sum_{i=1}^n \frac{\varepsilon_i}{n} (\bar{\tau}y - r) \quad (3.25)$$

Conversely, if  $\theta$  is equal to one, then voters can deduce the individual contribution of incumbents, as in (3.02)-(3.11). As the realization of  $\theta$  at the beginning of the first period is common knowledge, it is simple to analyse how this will affect the strategies and, hence, outcomes, of the game.

It is simple to incorporate the effect of  $\theta$  into the calculation of an incumbent office-holder, with (3.04) becoming:

$$w_i = r_{i1} + p_1 \delta \theta (\bar{\tau}y - r_2) \quad (3.26)$$

If  $\theta = 0$ , that is if both voters and the incumbent can anticipate that they will not be able to deduce the individual competency of the said office-holder over the second term,  $p_1 \delta \theta (\bar{\tau}y - r_2)$ , then (3.26) drops out and the welfare of the incumbent is now purely determined by first period rents. Thus, the incumbent simply maximizes  $w_i = r_{i1}$ , subject to her current budget constraint. Thus, her effective budget constraint is simply  $\bar{\tau}y$  by choice of  $r_{i1}$ , that is:

$$\bar{\tau}y - r_{i1} \geq 0 \quad (3.27)$$

Differentiating the utility of the incumbent,  $w_i$ , subject to (3.27), yields a corner solution (differentiating with respect to  $r_{il}$  yields 1). Therefore, in situations in which only the average actions of incumbents can be deduced, incumbents will pursue a rent-maximizing strategy:

$$\bar{\tau}y = r_{il} \tag{3.28}$$

Conversely, if  $\theta = 1$  then (3.26)=(3.04) and the incentives incumbents face can be deduced from (3.04)-(3.11), since it is now possible to determine their individual competency.

The determinants of the realization of  $\theta$ , therefore, have a direct impact on the level of rent extraction. Contexts which increase/decrease the likelihood of a higher/lower average realization of  $\theta$  will exhibit less/more rent extraction, as a greater number of incumbents at any one time are likely to be incentivized to rent-minimize/maximize. Given how the nature of incentives affects incentives for rent extraction, it is now possible to examine how the existence of different distributions of administrative responsibility in different policy-areas can predict marginal changes in rents.

Given that the way in which marginal changes in the institutional context may affect the incentives that career concerned incumbents have to set, rents can now easily be deduced. Let  $\gamma$  be the proportion of policy-making decisions an incumbent makes, under conditions via which voters can deduce her individual competency (that is, the logic of (3.04)-(3.11) holds);  $\gamma = \sum \theta = 1$ . By definition,  $0 \leq \gamma \leq 1$  and therefore,  $1 - \gamma$

denotes those decisions that an incumbent makes, from which voters can only deduce the average competency and not the individual competency of incumbents (that is, the logic of (3.26)-(3.38) holds):  $1 - \gamma = \sum \theta = 0$ . Also assume that voters can credibly commit to only re-electing incumbents who demonstrate high competency in all policy areas in which their individual contribution can be observed<sup>73</sup>. Therefore, when setting rents in the first period, an incumbent will only face a rent-maximizing re-election trade-off over those decisions that will be used to deduce her competency. Thus, if she wishes to retain office and pursue a maximal rent-extracting strategy in the second period, she will have to desist from short-term rent-minimization over those competency-revealing decisions in the first period. Conversely, for those decisions to which she knows voters cannot deduce her individual contribution, and do not therefore affect her re-election prospects, she is free to pursue a rent-maximizing agenda. Therefore, rents in the first period are given by:

$$r_{it} = \gamma(\bar{t}y - \chi\delta(R + \bar{t}y)) + (1 - \gamma)\bar{t}y \tag{3.29}^{74}$$

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<sup>73</sup> Otherwise a sub-optimal equilibrium (from the voters perspective) could emerge in which elected officials would only have an incentive to demonstrate their competency in one policy-making context, as this would suffice to deduce competency. Substantially, this does not change the prediction that a minimal amount of unequal policy-making discretion would result in less rent extraction. Furthermore, if more unequal distributions of policy-making responsibility gave different agents the opportunity to distinguish themselves, then the original results hold even more robustly. However, introducing such considerations only increases notational complexity without changing the derived hypotheses and is not pursued here.

<sup>74</sup>  $\gamma$  affects the ego rents, because it is only actions in these decisions that determine re-election prospects, and hence ego rents associated with retaining office. In the absence of any policy domain in which individual competency could be deduced, voters would not intentionally re-elect incumbents (they would randomly alternate between re-election and the selection of a new candidate), thus diminishing if not eliminating the ego rents associated with re-election due to personal characteristics.

Differentiating with respect to  $\gamma$  yields the comparative effect of changing the proportion of decisions that are used by voters to update their beliefs about an incumbent's competency. Intuitively, as the first derivative with respect to  $\gamma$  has a negative sign,  $\partial r_{it} / \partial \gamma = (\bar{\tau}y - \chi\delta(R + \bar{\tau}y) - \bar{\tau}y)$ , the amount of rents extracted, over all policy decisions an incumbent makes, decreases as  $\gamma$  increases. This is because  $|\chi\delta(R + \bar{\tau}y)|$  increases as  $\gamma \rightarrow 1$  so that the gap between  $|\chi\delta(R + \bar{\tau}y)|$  and  $|\bar{\tau}y|$  also increases. In short, as  $\gamma \rightarrow 1$  then a greater percentage of first period rents will generate a higher opportunity cost for the incumbent (increased likelihood of not being re-elected). Conversely, as  $\gamma \rightarrow 0$ , a greater percentage of first period rents will not affect the re-election prospects of the incumbent, as voters cannot use this information to update their beliefs about the incumbent, and therefore the incumbent will have no incentive other than to pursue a rent-maximizing strategy. Thus, on the margin, it follows that as  $\chi\delta(R + \bar{\tau}y) < \bar{\tau}y$ , an increase in the proportion of policy-making that is made under conditions in which the individual contribution of an incumbent can be deduced should be associated with a reduction in rent extraction<sup>75</sup>.

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<sup>75</sup> While utilizing very different motivating assumptions, the results derived below are not dissimilar from career-concerned models that deal with the existence of unknown exogenous shocks to the state of the world (affecting the cost of producing publicly-financed goods). As Besley and Case (1995) and Persson and Tabellini (2001) show, the existence of multiple jurisdiction can allow voters to deduce the competency of individual incumbents based on the fact that they can use information from adjoining consequences to deduce the state of the world, and hence their own incumbent's competency. Thus, the notion that a lack of information about the individual competency of incumbents can incentivize rent-maximization is well established in the career-concerned literature.

### **3.4 Combining the Distribution of Policy-Making and the Distribution of Public Policy-Making Responsibility**

Do the EDD/NEDD ratio and the distribution of policy-making responsibility amongst elected officials affect career concerns jointly? The previous two sections showed how, independently of each other, the EDD/NEDD ratio and the nature of electoral competition can alter incentives for career concerned policy-makers to minimize their level of rent extraction. In practice, the two contexts may work in tandem (complementarily/interactively).

The reason these two contextual factors may work in tandem is that elected policy-makers face two major tasks: (1) enacting legislation (determined by the nature of electoral competition); and (2) exercising oversight of accountable bureaucrats (determined by the EDD/NEDD ratio and possibly the nature of electoral competition). Therefore, examining how these two factors interact to enhance or diminish career concerned rent minimization can now be investigated. There are several ways in which the EDD/NEDD ratio and the distribution of public policy-making responsibility may interact. The impact of both factors may be particularly prominent if electoral results affect the composition of the legislature as well as the nature of bureaucratic oversight. For example, if the distribution of committee membership or ministerial portfolio allocation are proportionally determined by party strength in the legislature, then the distribution of public policy-making responsibility will also shape the nature of interaction between EDDs and NEDDs. The oversight activities of EDDs will therefore reflect the power of different parties in the legislature.

This multiplicative relationship can be modelled as an interaction term, between the distribution of policy-making responsibility and the EDD/NEDD ratio:

$$r_{ijt} = (\alpha * \gamma)\bar{\tau}y - \chi\delta(\gamma R + (\alpha * \gamma)\bar{\tau}y) + (1 - \gamma)\bar{\tau}y - (1 - \alpha)\bar{\tau}y \quad (3.31)$$

From (3.31) it is simple to derive the fact that, as  $\alpha$  and  $\gamma \rightarrow 1$  the utility of remaining in office increases as the gap between the utility from remaining in office  $|\chi\delta(\gamma R + \gamma\bar{\tau}y) + (1 - \gamma)\bar{\tau}y|$  and extracting maximal rents  $|\bar{\tau}y|$  becomes greater, as  $\alpha \rightarrow 1$ ; as does the gap between  $|\chi\delta(R + (\alpha\bar{\tau}y))|$  and  $|\bar{\tau}y|$  as  $\gamma \rightarrow 1$ . From this it is simple to see that if either  $\alpha$  or  $\gamma$  are (approximating) zero but the other is not, the incentives for rent minimization weaken but still exist, while if and  $\gamma = 0$ , then the magnitude of career concerns is minimized.

### 3.5 Conclusion

The simple careers concern model (Section 3.1) shows how the existence of elections can potentially incentivize incumbents to minimize their rent-extracting activities in the short term, in order to remain in office. According to the outcomes of the generic model, the existence of elections can potentially incentivize office-holders to (1) desist from short-term rent-maximizing strategies, and, by extension, (2) reveal their competency in providing publicly-financed goods and services. This generic modelling tradition thus generates the prediction that polities with greater incentives for incumbents to seek re-election should, on average, exhibit lower rents and the provision of publicly-financed goods at lower unit costs.

Enriching this basic framework to take into account the public policy-making context allows for even more refined hypotheses to emerge. Specifically, the policy-making context potentially affects the ability of (1) elected officials to control public policy-making (EDD/NEDD ratio), (2) the incentives elected officials face given the distribution of responsibilities amongst themselves (EoE), and (3) the effect of the interaction between the two. Given that these contextual considerations give rise to specific, testable implications, it is possible to establish whether these theoretical implications can in fact robustly predict empirical regularities.

## Section 2

The first section of this thesis focused on identifying, analyzing, and theorizing how the context in which decision-making occurs in high-income democracy contexts might be a robust explanatory variable in accounting for the persistence of rent extraction in high-income democratic contexts. By documenting the existence of statistically significant, and only partially accounted for, variation in rent extraction amongst this sub-set of countries (Chapter 1 and 2), a good rationale emerged for developing a new theoretical model, with the explicit aim of accounting for some of this variation (Chapter 3). Specifically, by combining: (1) the insights of the economic voting literature, with regard to how contextual factors may determine the magnitude of voter evaluation, with (2) the logic of the classical career concerns model, it became possible to deduce a set of new hypotheses. These hypotheses concern the conditions under which more/less rent extraction should be observed, given a high-income democratic ‘macro’ context. In short, the first section developed a theoretical model whose empirical implications are potentially falsifiable, and can, therefore, be operationalized and tested. This objective is the preserve of the next three chapters.

The focus of the second section of this thesis is, therefore, to operationalize and test these newly derived hypotheses. While the focus of each empirical chapter is to test different implications of the model, the empirical identification strategy of each chapter follows a similar generic logic. As the model assumes both a well-established democratic context, and there is empirical evidence that there is variation in both the EDD/NEDD

ratio and the EoE amongst high-income democracies, it becomes possible to develop a multi-pronged research strategy in which different elements of the model are progressively tested. Specifically, each chapter tests whether, controlling for rival explanations: (1) there is a robust association between variation in contextually induced electoral efficacy and rent extraction within the high-income democracy sub-set of countries (positive test), and then (2) whether this robust association breaks down/is qualitatively different when it is tested using non-high-income democracies (negative test).

Chapter 4 critically evaluates the first substantive implication of the model (Section 3.2). Namely, that an increase/decrease in the distribution of policy-making responsibility of electorally accountable, and hence possibly career concerned, policy-makers, away from electorally unaccountable policy-makers, alters the efficacy of elections in predictable ways (less/more rent extraction). Utilizing an enhanced version of Persson and Tabellini's (2003) dataset, it becomes possible to test whether: (1) increments/reduction in the EDD/NEDD ratio should be associated with less/more rent extraction within a high-income democracy context (positive test), and (2) this relationship should not exist in non-high-income democracies (negative test).

While Chapter 4 is the critical first step in testing the model, it does not provide a great deal of evidence that voters (and not just elites) perceive rent extraction to vary given the EDD/NEDD ratio. While focusing on elite perceptions of rent extraction is important, as such groups are more likely to experience rent extraction in high-income contexts vis-à-vis ordinary voters, it is only a first step in testing the theoretical implications of the model. This is because the theoretical model specifically anticipates

that reduced rent extraction is due to the anticipated reaction of voters (and not just elites) to the behaviour of incumbents. Chapter 5 seeks to address this concern using data from a *Flash Eurobarometer Survey*, and the unique multi-level structure of EU decision-making (national and EU level) to examine whether: (1) voters' perceptions of rent extraction of national institutions can be predicted by the national EDD/NEDD ratio (positive test); and (2) that the level of perceived rent extraction of the EU, whose EDD/NEDD ratio is constant across member states, and does therefore vary, as the national EDD/NEDD ratio does, cannot be predicted by the national level EDD/NEDD ratio (negative test). Thus, the Chapter demonstrates that the empirical evidence is consistent with the rational expectations assumption of the model (voters update their expectations of rents based on the EDD/NEDD ratio) and not just its equilibrium outcome (elites perceive rent extraction to vary with the EDD/NEDD ratio).

Chapter 6 begins by examining *how* the nature of electoral competition amongst EDDs can also affect their incentives. That is, the Chapter examines the extent to which institutions (electoral system and form of government) affect the efficacy of elections (EoE) by altering the distribution of policy-making responsibility. Once again utilizing an enhanced version of Persson and Tabellini's (2003) dataset, it becomes possible to develop an index of electoral efficacy (EoE) that is capable of testing the relevant implications of the model. That is, do increments or a reduction in the interaction term of electoral efficacy (EoE) and the EDD/NEDD ratio, predict less rent extraction within a high-income democracy context (positive test)? And does this relationship not exist/become weaker in non-high-income democratic contexts (negative test)?

At the end of this process it becomes possible to assess the overall robustness of the theoretical model. Specifically, the empirical tests show that (1) the EDD/NEDD ratio can predict variation in perceptions and objective measures of rent extraction amongst both elites and voters in the manner anticipated by the theoretical framework; (2) that the interaction term between the EoE and the EDD/NEDD ratio is also a robust predictor of outcomes, consistent with the notion that the electoral accountability and the nature of the electorally induced decision-making context are critical in shaping policy-makers incentives; and (3) these results are most robust in high-income democracies, but break down in non-democratic and lower income contexts, a finding that suggests that the determinants of rent extraction may differ significantly amongst different sub-sets of countries. Of course, given the limitations noted in Chapter 2 (especially sample size and testing over time variation) it is important to treat these results with some caution. However, despite this, the results do provide a solid basis for further testing the model with both quantitative and qualitative data, as this becomes available over time.

## **4 The Distribution of Public Policy-Making Responsibility Between Electorally Accountable and Electorally Unaccountable Public Policy-Makers and the Magnitude of Rent Extraction**

The model developed in Section 3.2 suggested that the distribution of public policy-making responsibility between electorally accountable decision-makers (EDD, or  $\alpha$ ) and electorally unaccountable decision-makers (NEDD, or  $\beta$ ) could potentially explain variations in the level of rent extraction, at least in stable high-income democracies<sup>76</sup>. Specifically, the model demonstrates that because: (1) voters in a given policy-making context will know which policy-maker (EDD or NEDD) is responsible for a given policy outcome<sup>77</sup>, (2) they are more able to incentivize, via their electoral strategy (in the second stage, which is to re-elect only higher competency incumbents), (3) career concerned policy-makers who are electorally accountable (EDD) to pursue a rent minimizing strategy in the first stage (in order to secure re-election). The empirically testable implication of the model is therefore that (1) as the EDD/NEDD ratio ( $\alpha/\beta$ ) increases, rent extraction should decrease (due to the strategic incentives faced by policy-makers); and (2) voters and/or elites will use the EDD/NEDD to anticipate the average level of rent extraction amongst senior policy-makers involved in political life. That is, if the

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<sup>76</sup> All career concern models require the existence of competitive elections and, given the assumption of voter knowledge of the distribution of public policy-making decisions, it is assumed that a relatively advanced level of socio-economic development is required in order to limit substantial information costs.

<sup>77</sup> It is important to note, as outlined in Section 3.3, that in this book NEDD refers to specific individual decision-makers (interest groups, bureaucrats, lobbyists, etc.), rather than random shocks (trade shocks, exchange rate shocks, etc.). This definition is somewhat narrower than the definition used by Duch and Stevenson (2008), who define the term to include both types of actors/events. It is possible, however, to integrate such uncertainty into career concerns models (see Persson and Tabellini 2001). Such an extension would enrich the baseline model, although as the two types of NEDD are analytically distinct, this preliminary research focuses on the more simple case that assumes voters know the distribution of responsibility between individual EDD and NEDD policy-makers.

theoretical model is correct, one would expect democratic polities with a higher EDD/NEDD ratio to have lower levels of rent extraction vis-à-vis their counterparts with a lower EDD/NEDD ratio, and voters to be aware of how the EDD/NEDD ratio affects incentives for rent extraction.

Although not utilizing the framework of the EDD/NEDD ratio explicitly (as originally developed by Duch and Stevenson, 2008), many authors working in the field have, in practice, tacitly relied on a similar theoretical framework to motivate and test explanations regarding the determinants of rents. Vishny and Shleifer (1998) argue that, left unhindered, the ‘grabbing hand’ of the state (electorally unaccountable public policy-makers) could easily pursue rent-maximizing strategies with little fear of electoral reprisals. According to these authors, as well as the empirical work that supports their claims (e.g. La Pombara, 1994, Sandholtz and Koetzle, 2000), devising ways to limit the policy-making discretion of all public policy-makers and shifting any residual public policy-making powers to EDD rather than NEDD, should mitigate the incentives public policy-makers face to pursue aggressive rent-extracting strategies. This therefore limits the scope of government and is thus expected to increase incentives for rent extraction.

Conversely, a number of theorists (Lienhart, 2004) and empirical contributors (Adsera et al, 2000; Elliot, 1997) argue/suggest that the electoral incentives that incumbents face may exacerbate rather than ameliorate rent extraction in high-income democracies, due to the relative short-term incentives that elected officials face (Prat, 2005). According to this logic, granting public policy-making powers to NEDDs may reduce overall rent extraction. This is because some such electorally insulated decision-makers may have an incentive to deliver optimal outcomes (rent-minimization) to further

their own private interests (e.g. peak interest groups with a stake in long-term economic growth. See Soskice and Hall, 2001; Beramendi and Rueda, 2007) and/or bureaucrats concerned about peer review-contingent career progress (Alesina and Tabellini, 2007, 2008). Thus, according to this account, maximizing the number of electorally unaccountable stakeholders involved in public policy-making may actually reduce rent extraction.

If the model developed in Section 3.2 is correct, it follows that as the EDD/NEDD ratio increases, the amount of rent extraction will fall, as will elite and voters' perception of the average level of rent extraction. Conversely, if the model is incorrect, and NEDDs in advanced democracies are better able to make public policy-making decisions, it follows that the predictions of the theoretical model will fail to anticipate variation in rent extraction. Specifically, if mechanisms that incentivize NEDDs (e.g. peer review, judicial mechanisms) to limit their rent extraction as well as EDDs, then it follows that changes in the EDD/NEDD ratio should yield insignificant changes in aggregate levels of rent extraction. However, if the incentives faced by NEDDs are even more effective than those faced by their electorally dependent counterparts, then it follows that increments in the EDD/NEDD ratio will be associated with higher levels of rent extraction. By developing a measure of the EDD/NEDD ratio, then, and examining its marginal impact on the level of rents, this Chapter will provide an empirical answer regarding the impact of the EDD/NEDD ratio on perceptions of rent extraction.

It is important to reiterate here that the argument derived from the model is that the EDD/NEDD ratio influences '*politically determined perceptions*' of rent extraction (hereafter simply referred to as rent extraction; see Section 2.3.1). This type of rent

extraction specifically pertains to macro-level (legislative policy-making) and ‘grand political’ corruption that can easily be monitored by legislators (and hence, potential voters, interest groups etc). Thus, while a higher EDD/NEDD ratio is hypothesized to limit the aggregate incidence of this type of rent extraction, it is important to note that other elements of rent extraction may not be affected by it. Specifically, rent extraction due to certain types of bureaucratic decision-making (such as request for petty bribes, or delays in routine administrative tasks) is always far removed from democratic control, due to insurmountable information asymmetries or technologically determined policy costs. This type of rent extraction is therefore determined by factors entirely independently of the EDD/NEDD ratio, and thus no robust association should be expected between measures of such rents and the EDD/NEDD ratio itself. Thus, if the model is correct, a higher EDD/NEDD ratio should be associated with less perceived or actual ‘political’ rent extraction but not necessarily overall rent extraction in a polity, which includes petty and bureaucratic rent extraction.

The rest of this Chapter proceeds as follows. Section 4.1 provides evidence that it is possible to operationalize a measure of the EDD/NEDD ratio. This simple bivariate exercise serves not only to demonstrate the existence of the robust associations one would expect to find between changes in the components of the EDD/NEDD ratio and rent extraction, but by replicating the logic behind Duch and Stevenson’s (2008) operationalization of the EDD/NEDD ratio, the exercise serves to illustrate how the results obtained herein are consistent with the existing corpus of work in the field. Of course, proving the existence of robust bivariate associations, even ones consistent with previous findings, does not in and of itself provide convincing evidence that the model is

robust, as rival explanations may be better able to explain the observed variation in rent extraction. Therefore, Section 4.2 is concerned with utilizing both a simple and advanced multivariate specification in order to test the robustness of the theoretical expectations, in which rival explanations are identified and systematically controlled for. This section, therefore, robustly establishes the efficacy of the EDD/NEDD ratio, and hence the theoretical model of Section 3.2, in predicting variation in rent extraction above and beyond what can be explained by rival explanations. Section 4.3 is concerned with examining in more detail whether voter (rather than elite) perceptions of the average level of rent extraction controlled by elected officials, varies, as anticipated, with the EDD/NEDD ratio. This will thereby provide additional evidence that not only elite perceptions, but also the general public, use the EDD/NEDD ratio in the manner anticipated by the model.

#### **4.1 Measuring the EDD/NEDD Ratio**

In order to test the robustness of the theoretical model, especially against rival explanations, it is essential to *firstly* develop a measure of the EDD/NEDD ratio. Fortunately, a blueprint for devising such a measure has already been developed by Duch and Stevenson (2008), albeit a blueprint designed to measure how changes in the EDD/NEDD ratio affect the economic vote, rather than the incentives office-holders have in order to engage in rent extraction. However, adapting this measure for the present purpose of explaining the ratio's effect on the marginal propensity of public policy-makers to engage in rent extraction is relatively straightforward. Similar measures of the

size of the public sector, regulatory density, and statist public policy-coordination (policy coordination by public policy-makers in the absence/controlling for the existence of alternative means of oversight by peak interest groups or alternative oversight mechanisms<sup>78</sup>) are utilized to measure the ratio. As Duch and Stevenson's (2008) blueprint shows, these measures capture the extent to which public policy-making is extensive and dominated by NEDD (large public sector, high regulatory density and public policy coordination), or limited and dominated by EDD (small public sector, low regulatory density and a lack of labour/policy-coordination).

Thus, a more extensive public sector is associated with a lower EDD/NEDD ratio and, if the model is correct, a greater proportion of policy-makers who, unconcerned about re-election incentives, follow a rent-maximizing strategy at all times. Of course, if the model is incorrect and other sanctioning mechanisms (detection) and incentives (long-term growth concerns; peer reviewed career trajectories) incentivize NEDDs to be as effective or more effective in the delivery of publicly-financed goods and services, then an increase in the EDD/NEDD ratio will either be an insignificant or a negative predictor of the level of rent extraction. Having established the logic of the link between the EDD/NEDD ratio and the existence of an extensive or limited government, it is now possible to examine the different components of public policy-making, (which are the size of the public sector, the regulatory density, and policy-coordination) to specifically explain how these affect the EDD/NEDD ratio.

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<sup>78</sup> As Section 4.2 will show, the existence of stakeholder oversight of public policy coordination can reduce, although not eliminate, the magnitude of rent extraction. This point is made by Olson (1981) and illustrated, with respect to the efficient use of taxation, by Beramendi and Rueda (2007). Once such oversight mechanisms are controlled for, increased coordination of public policy-making is associated with increased rent extraction.

#### 4.1.1 The Size of the Public Sector

Broadly, public sector outputs entail two distinct activities: the redistribution of monetary resources (transfers) and the provision of publicly-financed goods and services. The size of the public sector is usually measured by either the amount of revenue raised or the value of expenditure undertaken by the state as a percentage of GDP. Therefore, expenditure as a percentage of GDP is a cardinal measure<sup>79</sup> that can be represented as a relative proportion of a sum (or a percentage) and is usually greater than 0 and less than 100 (at least in high-income democracies.). This measure has long been one of the factors identified as potentially explaining the incidence of rent extraction (Tanzi, 1998). As Duch and Stevenson (2008) have shown, a more extensive public sector results in both more EDDs and NEDDs but, critically, the proportion of EDDs/NEDDs decreases as the complexity, and hence specialist knowledge, associated with an ever-increasing scope of publicly-financed decision-making, has the effect of increasing the prominence of NEDDs relative to EDDs. Formally, as the size of the public sector increases:

$$\alpha_l > \alpha_s \text{ and } \beta_l > \beta_s$$

(4.01)

where  $l$  denotes a large public sector and  $s$  denotes a small public sector. Given that increments in government size are associated with increased complexity, and hence relatively more policy-making power for NEDDs, it follows that:

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<sup>79</sup> As it can, in theory, range from positive to negative infinity.

$$\frac{\alpha_l}{\beta_l} < \frac{\alpha_s}{\beta_s}$$

(4.02)

That is, the EDD/NEDD ratio in large states is less than the EDD/NEDD ratio in small states. If the model is correct, it follows that countries with smaller public sectors and hence a higher EDD/NEDD ratio will experience rent extraction. As Figure 4.01 below shows, high-income democracies with relatively small public sectors appear to experience less rent extraction<sup>80</sup> vis-à-vis high-income democracies with larger public sectors. For ease of interpretation, the x-axis measures the value of the private sector, i.e. the relative size of the private sector vis-à-vis the size of the public sector (as a percentage of GDP). Essentially, this relative measure of the size of government is calculated by subtracting 100 from the size of public sector expenditure (measured by the size of public expenditures as a percentage of GDP). A country's relative size of the 'private sector' will obviously be smaller as the size of the public sector is larger, as 100 minus an ever-larger number yields an ever-smaller outcome<sup>81</sup>. Therefore the measure generates a simple cardinal measure of public sector size that is easy to interpret and easy

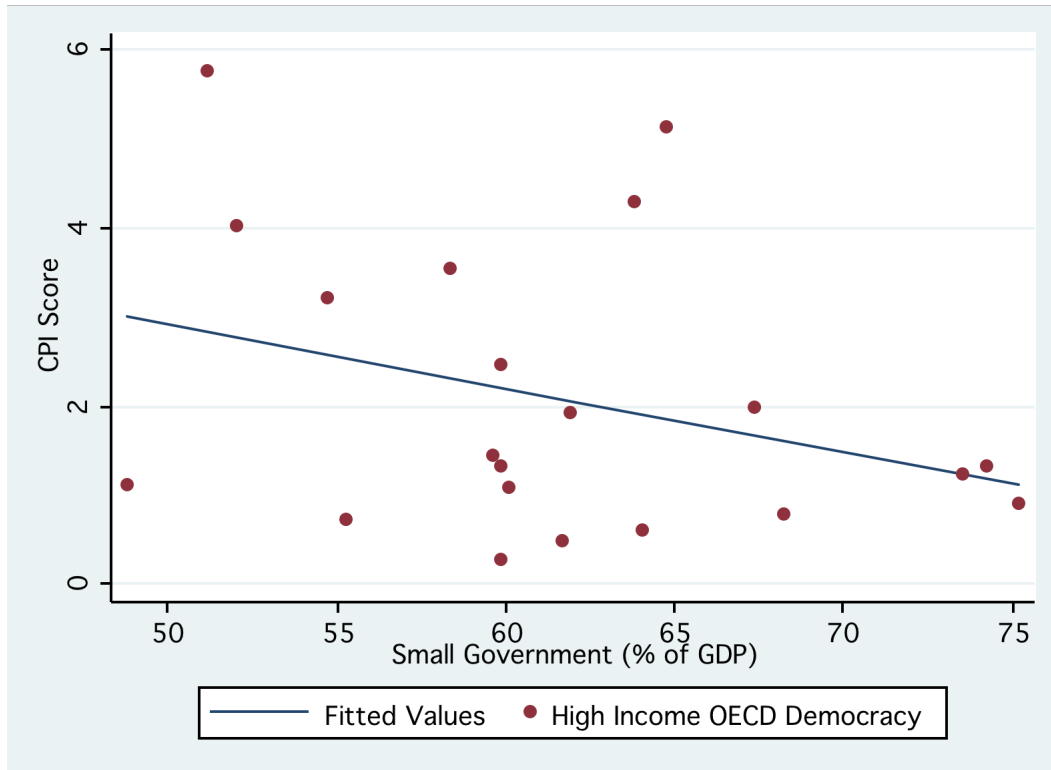
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<sup>80</sup> Measured by the standard error weighted averaged Corruption Perceptions Index (CPI) score of countries between 1995-2000 (higher scores denote less rent extraction).

<sup>81</sup> Obviously, as this measure is an inversion of public sector size it is perfectly and negatively correlated (-1.00) with the size of the public sector as a percentage of GDP.

to convert into a fraction (simply dividing the final score by 100 – critical when combining the different measures of limited government into an index; see below)<sup>82</sup>.

Figure 4.01: *The Inverse of the Size of Government and Rent Extraction*<sup>83</sup> (High-Income OECD)



Source: Persson and Tabellini, (2003)

Therefore, at least when utilizing a simple bivariate analysis, it appears to be the case that there is tentative empirical support for the proposition of the model regarding the size of government and rents in high-income democracies. Specifically, a higher EDD/NEDD ratio will reduce the level of rent extraction, because a smaller state is associated with

<sup>82</sup> As in all the countries in the sample, the level of government expenditure is not equal to zero (or less) and is not greater than 100. The level of government expenditure is the inverse of the size of government as a percentage of GDP.

<sup>83</sup> The data for each country is the average between the years 1995-2000 (Persson and Tabellini, 2003).

proportionally more decision-making being made by EDDs rather than NEDDs, because the size of the state is positively associated with policy-making complexity that favours NEDD decision-makers.

#### 4.1.2 Regulatory Density

A second critical dimension of the extensiveness of the state is regulatory density. This dimension of statism has already been linked to increased complexity and subsequently exacerbated oversight problems for elected office-holders (Spiller, 1990). Regulatory density has also been linked to increased rent extraction both theoretically (Tullock, 1967; Posner, 1971) and empirically (Djankov et al 2001, 2010). Furthermore, it is not difficult to argue that, as regulatory density increases, the proportion of NEDDs (e.g. regulatory experts, lobbyists of specialist industries, etc.) versus EDDs will favour the former (Duch and Stevenson 2008). Thus, the proliferation of increasingly specialist policy-making by independent experts, lobbyists, and other stakeholders in an increasingly dense regulatory environment, has the effect of reducing the EDD/NEDD ratio.

As before, this reasoning can be summarized formally: as regulatory density increases, more public policy decision-making is made (both EDDs and NEDDs increase). However, regulatory complexity ensures that while the volume of both EDDs and NEDDs has increased, proportionally more decision-making is made via NEDDs than EDDs. That is:

$$\alpha_{dr} > \alpha_{tr} \text{ and } \beta_{dr} > \beta_{tr}$$

(4.03),

where  $dr$  denotes a dense regulatory environment and  $lr$  denotes a limited regulatory environment. Given that increments in regulatory density are associated with increased complexity and hence relatively more policy-making power for NEDDs, it follows that:

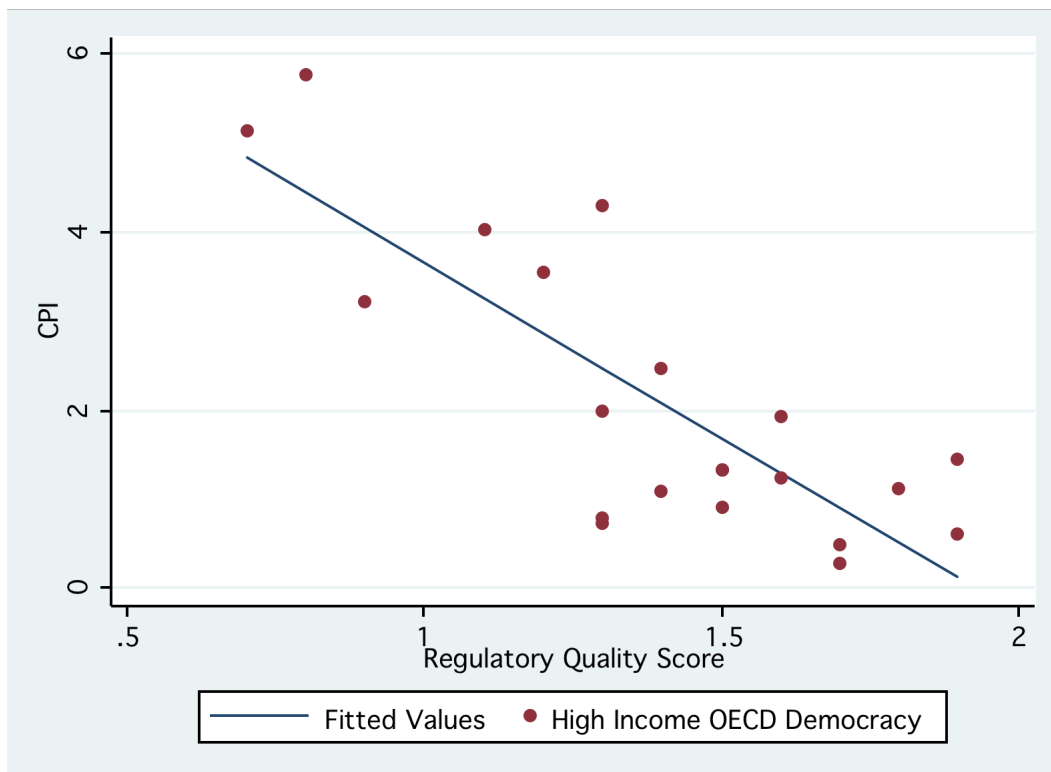
$$\frac{\alpha_{dr}}{\beta_{dr}} < \frac{\alpha_{lr}}{\beta_{lr}}$$

(4.04)

Figure 4.02 shows the bivariate relationship between effective regulatory density and rent extraction. Regulatory density is measured using the World Bank's good governance indicator of regulatory quality (for 1999). Each country receives a score ranging from -2.5 (very poor regulatory quality/unnecessarily extensive regulation) to 2.5 (very high regulatory quality/low relative regulatory burden). This interval measure is designed in exactly the same way as the other Good Governance indicators, such as the CC and the GE (see Chapter 2 and Appendix 4.B for details). Specifically, a country's score combines a host of indicators of regulatory density (volume and costs of regulations) and is designed to capture the extent to which government implements 'sound policies and regulations that permit and promote private sector development. (World Bank 2011)'

Representative measures<sup>84</sup> used to construct the measure include: (1) the density of import and export regulations; (2) the level of business regulations; (3) the magnitude of tariffs, price controls and non-tariff barriers; (4) the total burden of administrative regulations; and (5) the ease of starting as well as closing a business – all variables that are traditionally associated with capturing the density of regulations (ibid). As Appendix A notes this indicator is very similar to the original one used by Duch and Stevenson (2008) to measure regulatory density<sup>85</sup>. Consistent with the expectations of the model, higher regulatory density scores are associated with more rent extraction.

Figure 4.02: Regulatory Density and Rent Extraction (High-Income OECD)



Source: The World Bank, 2012. Data from 1999.

<sup>84</sup> See Appendix 4.B for details.

<sup>85</sup> For example, the regulatory costs associated with starting a business are now a standard way of measuring a snapshot of regulatory density (World Bank, 2012b).

#### 4.1.3 Public Policy Coordination

A final critical dimension of the expansiveness of the state is the extent to which public policy-making allows for the formal and informal participation of key ‘stakeholder groups’. A corporatist or coordinated *modus operandi* in which large labour unions and business associations coordinate to make policy-decisions (especially on wages), developed in many European countries following World War II (Hall and Soskice, 2001). As Hall (1999) explains, such a policy-making *modus operandi* results in a significant role for organized interest groups. More generally, ‘policy-coordination’ can be described as a *modus operandi* in which elected policy-makers may play a critical role (agenda setting or mediating), but in which key stakeholder positions in decision-making are at least shared by unelected officials.

As Alesina and Perotti (2004), amongst others, have noted, one institution that encourages more coordinated policy-making, amongst at least some OECD countries, is the European Union (EU). While the specific extent to which EU law requires coordination differs (in regulations and directives; see Muller, 2003), EU membership requires EU member states to make many laws that are: (1) initiated by the EU Commission (unelected executive arm of the EU); (2) agreed upon by at least some other member states (unelected officials from the perspective of domestic constituents) and; 3) in a more limited number of cases, influenced by the opinions of the Committee of Regions, and the Social and Economic Committee. From this it follows that if EU membership, by fostering public policy-coordination in a wide range of fields, increases the role of NEDDs in policy-making, then the level of (politically sensitive) rent extraction should be higher in EU states relative to other high-income OECD countries.

However, as will be argued below, not all types of policy-coordination might result in increased rent extraction.

Of course, given that the original powers of the EU emanate from (and can be revoked by, albeit with extreme difficulty) the decisions of nationally elected EDDs, it is possible to argue that the logic of electoral accountability should extend to the EU itself (see Moravcsik, 2004, for a strong argument in favour of the EU as an inter-governmentally controlled entity). In fact, there is theoretical and empirical evidence to suggest that the nature of EU policy can be explained by pre-existing national preferences. Thus, Beramendi (2007) argues that pre-existing economic disparities between EU member states can explain why EU competences extend to the common market and, in the case of euro-members, monetary, but not fiscal, policy (lack of national level consensus).

While it is the case that national level decisions made by EDDs are critical in authorizing the growth of EU powers, it does not follow that the governance consequences of EU membership do not insulate public policy-makers from future electoral scrutiny. As Besley and Coate (2000) have formally demonstrated, it is possible that voters may be willing to accept sub-optimal outcomes on some dimensions if elected policy-makers can present them with ‘take-it-or-leave-it’ bundles of policy positions. As the EU may confer other benefits (the common market, geopolitical stability, etc.), new EU member state electorates face a ‘take-it-or-leave-it’ decision on whether to join the EU. Thus, it is entirely possible that the EU results in a deterioration of electoral accountability due to public policy-coordination, even if it was originally designed to address the substantive concerns of national level EDDs.

As before, it is possible to formalize this argument that increased policy-coordination results in a lower EDD/NEDD ratio, namely:

$$\alpha_{cw} > \alpha_m \text{ and } \beta_{cw} > \beta_m \tag{4.05}$$

where  $cw$  denotes a coordinated policy environment and  $m$  denotes a limited or market oriented policy-making environment<sup>86</sup>. Given that increments in coordination density are associated with increased participation of NEDDs in policy-making, it follows that:

$$\frac{\alpha_{cw}}{\beta_{cw}} < \frac{\alpha_m}{\beta_m} \tag{4.06}$$

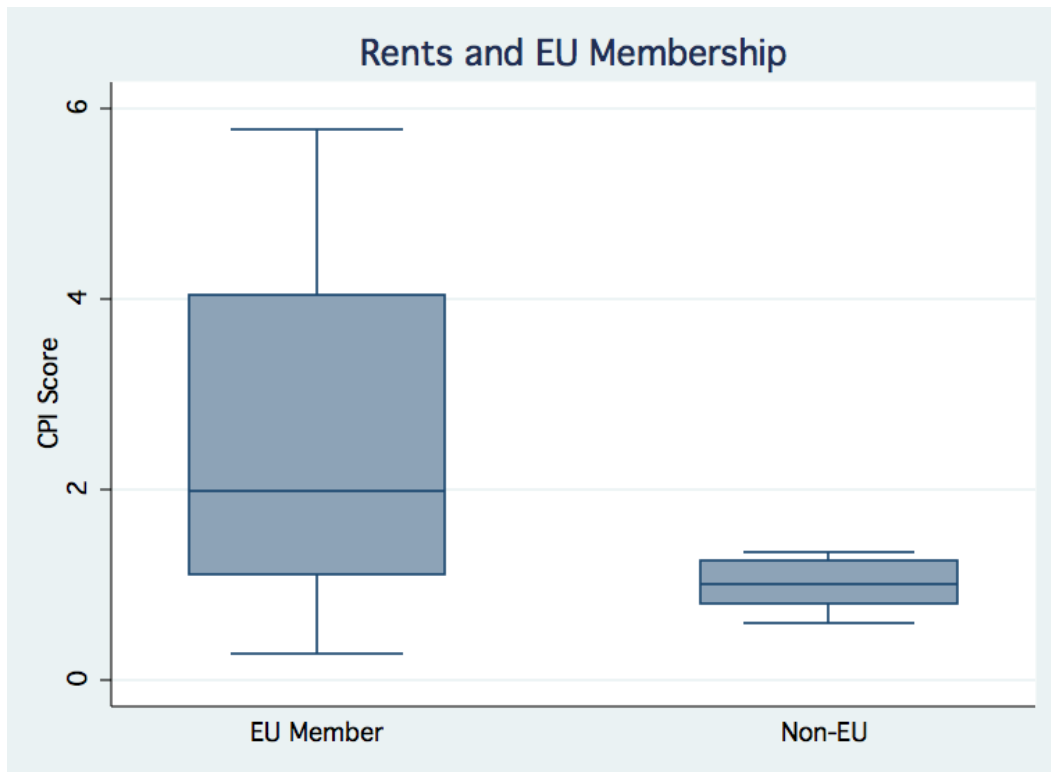
As Figure 4.03 shows, as a box-plot of the level of rents by high-income democracies that are/are not EU member states, EU membership amongst these countries (captured by a dummy variable that takes the value of 1 if an OECD state is an EU member) is

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<sup>86</sup> As Duch and Stevenson (2008, pp.192) argue, with respect to economic corporatism, an absence of corporatism or general public policy coordination – more decision-making in a market context – increasing the proportion of EDD decision-making is not odd if there is ‘a careful distinction between governmental and electoral accountability. In a free market for labour, the government makes some decisions and is electorally accountable for them (say, investment in education). But in a corporatist system, these decisions, and many others, become party to the overall societal bargain that is as much the responsibility of labour unions and business as it is of the politicians.’

associated with more rent extraction. Of course, because self-selection into the EU is restricted by geography and a host of other factors<sup>87</sup>, these bivariate results have to be treated with caution. Still, the fact that the median non-EU state had a lower (inverted) CPI score than even the best performing EU state, suggests that a robust association, as anticipated by the model, is consistent with the empirical evidence.

*Figure 4.03: Policy-Coordination and Rent Extraction*



EU Members: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden, and the UK.

Non-EU: Australia, Canada, Iceland, New Zealand, Norway, and Switzerland. The outlier case of Japan is omitted.

*Source: The Author*

However, it is important to note that policy coordination, while reducing the efficacy of elections, may generate countervailing effects that limit the incentives for rent

<sup>87</sup> For example, Greece's entry in 1981 occurred despite the recommendations of the Commission as the Council (EU member states) considered the geopolitical factors as well as the consolidation of democracy as reasons to override concerns regarding socio-economic governance.

extraction. This is because successful policy-coordination amongst encompassing or ‘peak organizations’ may limit the incentives for rent seeking (Olson, 1982). Narrow rent-seeking interest groups may have an incentive to organize in order to lobby for the public financing of private goods (narrow benefits diffuse costs) at the expense of latent groups. Unlike these, however, peak organizations may have an incentive to take into account the societal consequences of their actions, because they represent the interests of large latent groups. Given the potentially ambiguous effect of policy-coordination on incentives for rent seeking – due to its effect on the efficacy of elections and the possibility of allowing peak organizations to make policy – it is necessary to control for the possible positive effects of such a *modus operandi*. Thus, in the multivariate analysis that follows, a dichotomous control will be introduced to take into account those countries identified as having successfully developed a coordinated policy-making context<sup>88</sup>, in which the peak (economic) organizations make policy alongside elected officials (coordinated capitalist economies, or CMEs; see Hall and Soskice, 2001<sup>89</sup>). Introducing the control for CMEs alongside the dummy variable for EU membership (next section) therefore allows the effect of different types of policy-coordination to be identified. Membership of the supra-nationally bureaucratic nature of policy-coordination within the EU can be contrasted with the effect of national level peak group policy-making amongst coordinated capitalist economies.

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<sup>88</sup> Austria, Belgium, Denmark, Finland, Iceland, Germany, Japan, the Netherlands, Norway, Sweden and Switzerland (Hall and Soskice, 2001).

<sup>89</sup> It is important to note that the typology of coordinated capitalist economies was developed to explain the organization of production, by firms, in the economy. However, the notion of successful coordination is essentially complementary to Olson’s notion of peak organizations and, unsurprisingly, Switzerland, which is noted by Olson as being the paragon of a country that has successfully developed a peak organization based policy-making process, and is also considered a coordinated capitalist economy.

#### 4.1.4 A Combined Index of the Extensiveness of Government

The logic behind the selection of the three above-noted variables (government size, regulatory density, and public policy-coordination) is that they are measuring the extensiveness of government, which in turn determines the EDD/NEDD ratio. From this it follows that combining these measures should provide an index of the overall level of government extensiveness and hence the EDD/NEDD ratio ( $\alpha/\beta$ ). This is important because any individual measure of government extensiveness may be unrepresentative of the scores on other dimensions of extensiveness<sup>90</sup>. A country may have a very low tax burden – suggesting a high EDD/NEDD ratio – but a very dense regulatory environment may counter this effect. One simple way to produce such a ‘multi-dimensional’ measure of the EDD/NEDD ratio is to combine the indicators into an additive scale. In order to do this, it is essential to first rescale the two interval indicators – the inverse of government expenditure and regulatory quality – into fractional data, ranging from 0-1, so they are on the same scale as the dichotomous EU dummy variable<sup>91</sup> (additive approach). That is:

$$\frac{\alpha}{\beta}(\text{extensivness}) = \sum (\text{fiscal} + \text{regulatory} + \text{coordination}) \quad (4.07)$$

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<sup>90</sup> For example, while the Scandinavian countries tend to have a larger formal tax burden vis-à-vis other countries (Diagram 4.01), they also tend to have some of the lowest regulatory burdens vis-à-vis other high-income democracies (Diagram 4.02)

<sup>91</sup> This is simply achieved by dividing the inverse of government expenditure by 100 as it is already in percentage format (no country has negative expenditure so this is unproblematic). In the case of the regulatory quality indicator, which ranges from -2.5-+2.5, 5 is added to every country score (eliminating negatives but not changing the rank ordering) and then the results are divided by 10.

Where *fiscal* is the inverse of government expenditure (the size of the private sector) as a proportion, ranging from 0-1, *regulatory* is the nature of regulatory density ranging from 0-1, and *coordination* is a dummy variable which takes the value of 1 if a country is an EU member state. In short, the three indicators now have the same weighting, as they can, theoretically, only range from 0-1.

However, while the results for the additive index are robust and consistent with the theoretical arguments (as it is simply the addition of the effect of the three independent variables; see (4.01) – (4.03)), it is important to treat them with caution. This is because while the theory suggests that the three variables used to generate the additive index should be measuring the same underlying latent variable of government extensiveness, the theory does not suggest that the three variables have equal effect on this underlying measure. In reality, it may be the case that an increment in, for example, regulatory density reduces the EDD/NEDD ratio at a faster rate than an increment in fiscal expenditure. Given that the theory provides no basis for deducing what analytical weights may be the most valid, it may thus be the case that the additive index suffers from non-random measurement error.

While the nature of the bias in the additive index may be impossible to estimate, it is possible to use confirmatory factor analysis as a robustness check, both for the underlying theory and the additive index. This is because by utilizing the correlation matrix between the three independent measures of government extensiveness, in order to determine ‘factor loadings’ of any potential underlying latent variables, it becomes possible to test empirically whether, as the model would suggest, these three variables do in fact positively load on a potential latent measure of government extensiveness. This is

because confirmatory factor analysis uses the actual data (correlation matrix) rather than arbitrary weights to construct an index/measure of the underlying latent variable. Of course, given its confirmatory nature, it is not necessarily the case that any underlying latent variable is in fact a measure of government extensiveness. However, the logic of the proposed model would suggest that such a variable should exist, and therefore if the results are consistent with the theory, this would constitute a significant robustness check of its predictions.

Consistent with the theoretical expectations, the confirmatory factor analysis does indicate that the three variables of government extensiveness have factor loadings of the same sign, and the latent variable's Eigen value is greater than one (Eigen value=1.31). In short, the factor analysis provides an alternative, cardinal indicator – in this case ranging from -1.07-+2.02 – with which to check the initial additive results (see Appendix B for more details). Furthermore, the spearman rank correlation between the additive index and the confirmatory factor analysis scores is 0.85, and the null-hypothesis that the two scores are independent of each other cannot be rejected even at the 1% confidence interval. Thus, while it is not possible to know, with certainty, whether the additive index or the confirmatory factor analysis are capturing a multi-dimensional measure of government extensiveness, the results are robust, indistinguishable from each other, and entirely consistent with prior theoretical expectations. This suggests that while measurement error may be present, it is not driving the results, as the use of different weights (equal weights in the case of the additive index; empirically-derived for the confirmatory factor analysis) yields statistically similar outcomes.

## 4.2 From Bivariate to Multivariate Results

The results in the previous section suggest that there is a strong positive association between an expansive state sector (depressed EDD/NEDD ratio) and the level of rent extraction. Of course, such simple bivariate associations cannot prove causality, and the problem of omitted variable bias means that even their robustness needs to be treated with caution. In order to establish whether a robust negative association between the EDD/NEDD ratio and the level of rent extraction exists, as the model would predict, it is essential to utilize a multivariate specification that can control for the determinants of rent extraction that might also be correlated with the EDD/NEDD ratio. As noted in the beginning of Chapter 3 of this thesis, testing the career concerns models in a political context requires the identification of a dependent variable which measures the level of rent extraction (change in behaviour of incumbent policy-makers), as well as an independent variable that measures a change in the incentives of incumbents (usually institutional variation) (Persson et al, 2003; Aswwoth, 2005; Aswworth and De Moisquita, 2006). The identification strategy developed below is substantively similar to the existing corpus of work in the field. However, given the focus on advanced income democracies, two separate datasets and two slightly different identification strategies are utilized to test the theoretical predictions, that a higher EDD/NEDD ratio (independent variable of interest) reduces the level of rent extraction (dependent variable of interest).

The data used to test the model is the same dataset used by Persson and Tabellini (2003) in their seminal analysis of the economic effects of constitutions. The dataset has been augmented to include a measure of regulatory quality (one of the independent variables of interest) as well as additional control variables identified in the literature as

being potentially critical determinants of rent extraction. Furthermore, two separate analyses of the dataset are undertaken. One utilizes only high-income democracies (n=19-21), with the aim of establishing whether the theoretically anticipated relationship between the EDD/NEDD ratio holds, given a relatively homogenous set of countries. The other utilizes all countries available (n=52-58), which introduces heterogeneity in the sample (hence a need to control for more variables), but also enables more tests of the robustness of the initial results. In both cases, the substantive results should be the same. Specifically, it should be observed that an increase in the EDD/NEDD ratio is associated with a reduced level of rent extraction.

The baseline identification strategy, for use with the small sample model is:

$$RENT_i = \beta_{1i} EDDs_i + Z_i + u_i \tag{4.08}$$

$RENT_i$  is a measure of rents in country  $i$ ,  $EDDs_i$  is country  $i$ 's score on either (1) an individual measure of the EDD/NEDD ratio, or (2) the EDD/NEDD index (combined score on all three dimensions using factor analysis; see below), and  $Z_i$  is a vector of control variables.

The baseline identification strategy when using the large sample model is:

$$RENT_i = \beta_{1i}(EDD * DEM) + \beta_{2i} EDD + \beta_{3i} DEM + Z_i + u_i \tag{4.09}$$

where  $EDD*DEM$  is the interaction term between country  $i$ 's score on one of the combined EDD/NEDD index score, and (2)  $DEM$  is a dummy variable which takes the value of one, if a country is considered a high-income democracy.

Aside from the identification strategy, it is also critical to consider the distribution of the independent variables of interest. As discussed extensively in Chapter 2, in order to take into account controversies over the distribution of the dependent variable and the small sample size the regression models below utilize a GLM (fractional specification) and test these initial results using both an ordered probit and OLS specifications as well as an IRLS model (which controls for the effects of outliers). Finally, as also discussed in Chapter 2, the major results of this Chapter are replicated using the CC and the Tickets variables, as independent variables of interest. These findings are available in Appendix B.

#### **4.2.1 Basic Multivariate Model (Positive Test)**

Before examining the robustness of the ability of the different measures of the EDD/NEDD ratio to predict variation in rent extraction (using both the high-income and the pooled datasets), it is important to first establish whether the most basic theoretical assumptions of the model hold. Specifically, if the model is correct, at a minimum, it should be the case that each component variable of the measure of government extensiveness should significantly predict variation in rent extraction amongst high-income democracies, as anticipated by the model (higher scores on all these variables should, individually, be associated with lower levels of rent extraction).

Table 4.01 shows that, using the raw scores of each individual indicator of limited government (higher EDD/NEDD ratio), each indicator is a robust predictor of the level of rent extraction within a high-income democracy context. This is independent of (1) the use of the two different datasets and their associated vector of controls variables<sup>92</sup>; and (2) the distributional assumptions made, regarding the dependent variable of interest (interval regression, OLS, and ordered probit all yield the same qualitative results; see note underneath the table).

Specifically, Regression Models 1, 2, and 3 all show that when utilizing the homogenous sub-sample of countries that are considered high-income democracies, each one of the independent variables of interest, has the expected predicted effect on the level of perceived rent extraction. Namely, each of these measures of a higher EDD/NEDD ratio (low regulatory density, the inverse of the size of government, and non-membership of the EU), is significantly (at the 1% level respectively) associated with less perceived rent extraction. Utilizing the larger sample, which allows for the inclusion of all the additional control variables identified in Chapter 2- (Ethno-linguistic fragmentation, income inequality, (log) population, size of extractive industries, democratization (current), demographic dummy variables, economic openness (current), religious make-up variables, regional dummies) also yields the anticipated results. Specifically, the interactions effect of each of the independent variables of interest (low regulatory density and the inverse of government size<sup>93</sup>) and whether a country is a high-income democracy,

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<sup>92</sup> The basic control variables consist of the most robust determinates of rent extraction (see Treisman 2007) while the additional control variables consist of all the determinants of rent extraction utilized by Persson and Tabellini (2003).

<sup>93</sup> Due to the partial collinearity of the interaction term between the non-EU and EU OECD interaction term, the appropriate model could not be estimated. However, following standard practice combining the variables into additive and latent variable indices, allows for the inclusion of this theoretically important variable in subsequent regression models below.

is significantly (at the 10% and 5% level) associated with less perceived rent extraction. Interestingly, once this interaction effect is controlled for, the independent effect of each independent variable becomes erratic. Thus, while the measure of regulatory density continues to exert an independent effect on rent extraction (negative and significant at the 1% level: Regression Model 4), the independent effect of the inverse of the size of government is statistically insignificant (Regression Model 5). These results are thus entirely consistent with the predictions of the model; specifically, that all measures of the EDD/NEDD ratio should have a consistent effect on incentives for rent extraction within a high-income democracy context.

Table 4.01 The Individual Measures of Limited Government (EDD/NEDD Ratio) and Rent Extraction

	Corruption Perceptions Index (CPI)				
	(1) (GLM)	(2) (GLM)	(3) (GLM)	(4) (GLM)	(5) (GLM)
	Raw Score	Raw Score	Raw Score	Raw Score	Raw Score
<b>Regulatory Density*High-Income Dem</b>				-3.80* (2.16)	
<b>Small Govt* High-Income Dem</b>					-4.49** (2.22)
<b>Regulatory Density</b>	-19.37*** (4.00)			-1.00*** (0.12)	
<b>Non-EU</b>		-1.01*** (0.36)			
<b>Small Govt</b>			-7.00*** (2.00)		1.31 (1.33)
<b>High-Income Democracy</b>				-0.057 (0.35)	1.92 (1.40)
<b>Coordinated Capitalist Economies</b>	-0.43 (0.32)	-0.61* (0.34)	-0.52 (0.38)	-0.27* (0.16)	-0.096 (0.32)
<b>Economic Openness (Long-Term)</b>	-0.43 (0.84)	2.01*** (0.59)	2.83*** (0.70)	0.0094 (0.0036)	-0.095 (0.30)
<b>Latitude</b>	-1.73 (1.53)	-3.39** (1.54)	-4.75** (1.91)	-0.44 (0.57)	-1.50 (1.19)
<b>(log) Per capita income</b>	-0.42 (0.41)	-0.73 (0.48)	-0.93** (0.45)	-0.37** (0.11)	-0.47** (0.20)
<b>School Enrolment</b>	0.014 (0.12)	-0.014 (0.020)	-0.02 (0.01)	-0.0038 (0.0038)	-0.020** (0.0089)
<b>Additional Controls</b>				√	√
<b>Sample</b>	High-Income Dem	High-Income Dem	High-Income Dem	All	All
<b>Number of Observations</b>	21	21	21	54	52
<b>Log-Likelihood</b>	-6.69	-6.42	-6.97	-20.41	-19.90

Note: robust standard errors in parentheses. \* Denotes significant at the 10% level, \*\* significant at the 5% level, \*\*\*significant at the 1% level. CPI score divided by 10 to aid interpretation. OLS results are -0.36\*\* (0.08); 0.14\* (0.07); 0.01\*\*\* (0.005); -0.0031 (0.067),-0.013\* (0.0068); for models (1), (2), (3), (4) and (5) respectively. Additional controls: Ethno-linguistic fragmentation, income inequality, (log) population, size of extractive industries, democratization (current), demographic dummy variables, economic openness (current), religious make-up variables, regional dummies (see Chapter 2, Section 4.1.3, and Appendix A for details of variable descriptions).

Source: The Author

However, while the results in Table 4.01 are consistent with the model's theoretical expectations, they remain a relatively limited test of its robustness. Firstly, if the model is correct, it should be the case that (1) these three measures of the EDD/NEDD ratio are measuring the same underlying latent variable (extensiveness of government); and 2) while the most robust control variables were utilized, it is essential to include other control variables that may affect these results. Given the small sample size, it is not possible to introduce all the potential control variables using the OECD country sub-set alone (due to the problem of model saturation/lack of degrees of freedom), and therefore it becomes essential to utilize a larger dataset.

#### **4.2.2 Advanced Regression Analysis (Positive Test)**

Using either the identification strategy encapsulated in expressions (4.07) or (4.08), the high-income or pooled dataset, and the different combined measures of limited government (additive index and confirmatory factor analysis results), it is possible to determine, with greater confidence, whether the predictions of the model can robustly anticipate empirical outcomes. This is because not only is the use of an overall index of limited government more likely to convey a country's actual (multi dimensional) EDD/NEDD ratio, but the use of a larger sample also allows all major theoretically and empirically identified determinants of rent extraction to be controlled for, thus reducing the risk of omitted variable bias. However, as noted above, given that the model does not provide a basis for predicting appropriate weights for the different variables, measurement error is a concern. The use of two different measures of the limited government, several different robustness tests, and the ability to compare the results with

the results in Table 4.01 can be used to assess the validity of the findings. In this case, if the theoretical predictions are correct, the results below should be significant and not qualitatively different from the above-noted findings.

Table 4.02 reports the results of seven different regression specifications used to examine the theoretical expectations derived from the model. Irrespective of the specification used, the results are the same. As anticipated by the model and the theory, more limited government (a higher EDD/NEDD ratio) in an advanced income democratic context is associated with less perceived rent extraction. Specifically, these results remain robust despite the use of: (1) different independent variables (additive versus factor); (2) different sample size (OECD only versus pooled sample/all observation); (3) different distributional assumptions (GLM versus OLS versus Ordered Probit); (4) different robustness tests (reweighting observations to eliminate outliers); and (5) the inclusion of different control variables (Basic Controls, All additional Controls, Coordinated Capitalist Economies; see Section 2.4 for details).

Regression Model 1 of Table 4.03 is the simplest model possible, and conveys how the additive index of limited government (higher EDD/NEDD ratio) affects the level of perceived rent extraction utilizing only the most basic control variables, and restricted to the sub-sample of OECD countries. The results, which are significant at the 1% level and consistent with the theoretical expectations of the model, suggest that more limited government (a higher EDD/NEDD ratio) is associated with less perceived rent extraction. Regression Model 2 is identical to Regression Model 1, but also includes a control for ‘coordinated capitalist economies’ in which peak organizations play a critical role in policy-making (Hall and Soskice, 2001). These may, therefore, provide an alternative

incentive for public policy-makers to minimize their rent extraction (Olson, 1981). While this control has the expected negative sign (more peak organizations engender less rent extraction) the results are insignificant and do not alter the basic result of the Regression Model 1. Here, a higher EDD/NEDD ratio is associated with less rent extraction. Utilizing the factor analysis measure of limited government (higher EDD/NEDD ratio), Regression Model 3 yields the same qualitative results, indicating that measurement error due to miss-specified weights may not be a major problem. Once again, the dependent variable, assuming it is ordinal and discrete, rather than interval and continuous (Regressions 4 and 5) has no effect on the results which are still significant at the 1% level, and have the theoretically anticipated sign. Utilizing the pooled dataset and all possible determinants of rent extraction identified in the literature (Regression Model 6 and 7) also does not affect the results, which remain significant at the 1% level. Finally, Regression Model 8 shows the importance of the macro-level context. As both the interaction term of the EDD/NEDD ratio and a high-income and democratic context and the independent effect of both the EDD/NEDD ratio and a high-income democracy context, are all negative and significant on the level of perceived rent extraction. Furthermore, when utilizing the subsample of countries that are not high-income democracies (not shown), the EDD/NEDD ratio is positive and statistically significant. The reasons for this may be multiple (government extensiveness may be correlated with state capacity in some developing countries) and it is beyond the scope of this work to investigate. However, the fact that the effect of the EDD/NEDD ratio in high-income democracies differs from non-high-income democracies clearly demonstrates the

importance of how macro-contextual and meso-contextual factors may have different interaction effects.

Table 4.02 Extensive Regression Analysis (High-Income Democracies)

	Corruption Perceptions Index (CPI)							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	(GLM)	(GLM)	(GLM)	(OP)	(OP)	(GLM)	(IRLS)	(GLM)
	Additive	Additive	Factor	Additive	Factor	Additive	Additive	Factor
<b>Higher EDD/ NEDD* DEM</b>								-0.58* (0.34)
<b>Higher EDD/ NEDD Ratio</b>	-0.55*** (0.08)	-0.51*** (0.12)	-1.21*** (0.28)	-1.91*** (0.43)	-3.22*** (0.84)	-0.31*** (0.10)	-0.31*** (0.06)	-0.31*** (0.06)
<b>High- Income Democracies</b>								-0.78** (0.31)
<b>Coordinated Market Economies</b>		-0.35 (0.50)						-0.17 (0.35)
<b>Standard Controls</b>	√	√	√	√	√	√	√	√
<b>Additional Controls</b>						√	√	√
<b>Sample</b>	High- Income Dem	High- Income Dem	High- Income Dem	High- Income Dem	High- Income Dem	All	All	All
<b>Number of Observations</b>	19	19	19	19	19	52	52	52
<b>(Pseudo Log)- Likelihood</b>	-6.04	-6.03	-6.10	-35.78	-39.59	-19.81	NA	-19.97

Note: robust standard errors in parentheses. Dependent variable converted into fractional form for GLM estimations. OLS results are: -1.94\*\* (0.71), -0.046\*\* (0.021) for models' (1) and (5) respectively Standard controls: age of democracy, education attainment, latitude, (log) per capita income, and economic openness (long-term). Additional controls: Ethno-linguistic fragmentation, income inequality, (log) population, size of extractive industries, democratization (current), demographic dummy variables, economic openness (current), religious make-up variables, regional dummies (see Chapter 2 and Appendix A for details). Varieties of Capitalism Control is a dummy variable which takes the value of one for 'Coordinated Capitalist Economies.' (see Chapter 1, above, 4.1.4 and Appendix A for details). \* Significant at the 10% level, \*\* significant at the 5% level, \*\*\*significant at the 1% level.<sup>94</sup>See Chapter 2, Section 4.1.3, and Appendix A for details of variable descriptions).

Source: The Author

<sup>94</sup> Running the regressions to include bureaucratic salaries controls increases the robustness of the EDD/NEDD index. Running regression 4 using a ranking of bureaucratic salaries (n=18) yields an EDD coefficient of -2.41 (0.80), significant at the 5% level. The rank on bureaucratic salaries is not significant.

The results in Table 4.02 do not only hold for high-income democracies, but also for democracies in general. As Table 4.03 indicates, when replicating the regression models using the sub-sample of all effective democracies, rather than just high-income democracies (Regression Models 1-5), the results remain qualitatively the same. Namely, the EDD/NEDD ratio is robustly and negatively associated with less rent extraction. The magnitude of this effect, though, is diminished in all the regression models (compare Regression Models 1-5 in Tables 4.02 and 4.03), and, with respect to the ordered probit models (Regression Models 4 and 5), the results are significant at the 5% rather than the 1% level. In summary, independent of the sub-sample of countries used, the robust negative association between the EDD/NEDD ratio and the level of rent extraction predicted by the model remains robust.

Table 4.03 Extensive Regression Analysis (Democracy Sub-Sample)

	Dependent Variable: CPI				
	(1) (GLM)	(2) (GLM)	(3) (GLM)	(4) (OP)	(5) (OP)
	Additive	Additive	Factor	Additive	Factor
<b>Higher EDD/NEDD Ratio</b>	-0.32*** (0.069)	-0.28*** (0.12)	-0.65*** (0.17)	-0.57** (0.22)	-0.99** (0.48)
<b>Coordinated Market Economies</b>		-0.57** (0.24)			
<b>Standard Controls</b>	√	√	√	√	√
<b>Sample</b>	Democracy	Democracy	Democracy	Democracy	Democracy
<b>Number of Observations</b>	28	28	28	28	28
<b>(Pseudo Log)-Likelihood</b>	-10.11	-10.29	-10.21	-66.15	-66.14

Note: robust standard errors in parentheses. Age of democracy, education attainment, latitude, (log) per capita income, and economic openness (long-term). Varieties of Capitalism Control is a dummy variable which takes the value of one for ‘Coordinated Capitalist Economies’\* Significant at the 10% level, \*\* significant at the 5% level, \*\*\*significant at the 1% level. See Chapter 2, Section 4.1.3, and Appendix A for details of variable descriptions).

Source: The Author

Aside from the EDD/NEDD ratio itself, the standard set of controls includes mechanisms that might capture the existence of alternative oversight mechanisms. The standard controls include the age of a democracy, controlling for the fact that democratic learning and institutionalization may affect the efficacy of elections. Furthermore, the controls include the Gastil Index whose civil liberties component controls for the existence of a free media and the ability of civil society to operate independently of government. This controls for some other critical contextual variables that may affect the efficacy of elections.

Apart from these broad contextual variables that may affect both EDD and NEDD, it is also necessary to control for NEDD-specific, non-electoral oversight mechanisms, as these may provide effective substitutes for electoral control. To do so, the

Chapter uses the Index of Executive Oversight, an interval indicator (ranging from 0-9) constructed by Staphenurst (2009) using data on the following factors to determine to what extent the non-elected elements of a polity are under the supervision of elected officials/voters at large: (1) the existence and powers of a parliamentary public finance committee (0-3); (2) the ability of elected officials to summon and scrutinize the actions of un-elected officials (0-2); (3) the ability of elected officials to censure and dismiss members of the executive (0-2); (4) the existence of an Ombudsperson (0-1); and (5) the existence of an Access to Information Law (0-1). In addition to this measure, it is also possible to use the World Bank's indicator for Government Effectiveness as a potential measure of the existence of oversight mechanisms faced by NEDDs. While, as noted in Chapter 2, this measure is usually used as a measure of rent extraction (e.g. Persson and Tabellini, 2003), the index is in fact supposed to be measuring the extent to which non-elected policy-makers are independent of political control (World Bank, 2010). Therefore, while caution needs to be exercised in interpreting the results, it is possible to use this measure as a robustness check, to see whether the existence of an efficient non-electoral mechanism of oversight, associated with an independent non-elected public sector, is in fact associated with less perceived rent extraction.

As Table 4.04 shows, controlling for the existence of non-electoral oversight mechanisms does not alter the basic results, which remain the same: the EDD/NEDD ratio exhibits a highly statistically significant and negative effect on rent extraction, especially in high-income democracies. Consistent with the large literature on the importance of oversight, both the Index of Oversight and the measure of Government

Effectiveness are also associated with reduced rent extraction. These findings suggest that while non-electoral mechanisms clearly play a role in determining rent extraction, they do not affect the role played by the EDD/NEDD ratio, which continues to exercise a large independent effect.

*Table 4.04 Extensive Regression Analysis with Additional Bureaucratic Control Mechanisms (High-Income Democracy Sub-Sample)*

	Corruption Perceptions Index		
	(1) (GLM)	(2) (GLM)	(3) (GLM)
	Additive	Additive	Factor
<b>Higher EDD/NEDD* DEM</b>			-0.60* (0.33)
<b>Higher EDD/NEDD Ratio</b>	-0.50*** (0.06)	-0.46*** (0.10)	-0.30*** (0.09)
<b>High-Income Democracies</b>			-0.82** (0.27)
<b>Oversight Index</b>	-0.30** (0.10)	-0.23* (0.12)	
<b>Government Effectiveness</b>		-1.02*** (0.09)	-1.00*** (0.05)
<b>Coordinated Market Economies</b>	-0.33 (0.48)	-0.34 (0.39)	-0.17 (0.35)
<b>Standard Controls</b>	√	√	√
<b>Additional Controls</b>			√
<b>Sample</b>	High-Income Dem	High-Income Dem	All
<b>Number of Observations</b>	19	19	52
<b>(Pseudo Log)-Likelihood</b>	-6.00	-6.86	-19.00

Note: robust standard errors in parentheses. Dependent variable converted into fractional form for GLM estimations. Age of democracy, education attainment, latitude, (log) per capital income, and economic openness (long-term). Varieties of Capitalism Control is a dummy variable which takes the value of one for 'Coordinated Capitalist Economies'. Significant at the 10% level, \*\* significant at the 5% level, \*\*\*significant at the 1% level. See Chapter 2, Section 4.1.3, and Appendix A for details of variable descriptions).

Source: *The Author*

#### **4.2.3 The Effect of the EDD/NEDD Ratio on Non High-Income Democracies? (Negative Test)**

A final test of the robustness of the model is whether the consistent relationship between the EDD/NEDD ratio and its component parts remains a consistent and significant determinant of rent extraction in the sub-set of countries that are not high-income democracies. The model and its antecedent literature assume that a higher EDD/NEDD ratio, and by extension all of its component measures, should be *consistently* associated with less perceived rent extraction. It follows, then, that if the model is correct, this conditional effect should break down when the EDD/NEDD ratio is used, to predict variation in rent extraction in non-high-income democracies.

This is because the micro-theoretical assumptions of the theory postulate that the EDD/NEDD ratio affects the efficacy of elections, and that means high-income democracies, based on the antecedent literature. Therefore, it is anticipated that, while individual component measures of the EDD/NEDD ratio may be positively or negatively associated with variation in rent extraction amongst non-high-income democracies, increments in the EDD/NEDD ratio as a whole should not be negatively and robustly able to predict variation in rent extraction in the absence of a high-income democracy context. This is because the efficacy of elections is non-existent and cannot, therefore, be affected by the EDD/NEDD ratio.

As Table 4.05 indicates, the empirical evidence is consistent with this theoretical expectation. The individual measures of the EDD/NEDD ratio (low regulatory density

and the inverse of government spending<sup>95</sup>) are inconsistently but significantly (at the 1% and 5% level respectively) associated with less and more rent extraction (Regression Model 1 and 2). Interestingly, the interaction term between the EDD/NEDD ratio and whether a country is not a high-income democracy is positive, and just statistically significant (at the 10% level), a result that suggests that in a non-high-income democracy context, a higher EDD/NEDD ratio is associated with more rent extraction (Regression Model 3). It is beyond the scope of this analysis to speculate as to why this may be. For example, it may be the case that some components of the EDD/NEDD ratio (inverse of government spending) may be associated with state capacity. Regardless of this, these results provide additional support for the theoretical model, as they clearly demonstrate that only within a context of a strong and stable electoral context (high-income democracy sub-set) does the EDD/NEDD ratio reduce the level of rent extraction.

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<sup>95</sup> As membership of the EU is confined to high-income democracies in this dataset (Persson and Tabellini's dataset and measures were developed before the 2004 enlargement of the EU) the non-EU component cannot be used, as no non-high-income democracy is a member and, therefore, there is no variation in this variable.

Table 4.05 The Individual Measures of Limited Government (EDD/NEDD Ratio) and Rent Extraction in Non-High-Income Democracies

	Corruption Perceptions Index (CPI)		
	(1) (GLM)	(2) (GLM)	(3) (GLM)
	Raw Score	Raw Score	Additive
<b>EDD*</b> <b>Non-High-Inc Dem</b>			0.51* (0.26)
<b>Regulatory Density</b>	-7.65*** (2.01)		
<b>Small Govt</b>		3.32** (1.48)	
<b>EDD/NEDD Ratio</b>			-0.33 (0.25)
<b>Non-High-Inc Dem</b>			0.78*** (0.32)
<b>Basic Controls</b>	√	√	√
<b>Additional Controls</b>			√
<b>Sample</b>	Non-High-Income Dem	Non-High-Income Dem	All
<b>Number of Observations</b>	22	22	52
<b>Log-Likelihood</b>	-9.34	-9.05	-19.91

Note: robust standard errors in parentheses. Standard Control: Age of democracy, education attainment, latitude, (log) per capita income, and economic openness (long-term). Additional controls: Ethno-linguistic fragmentation, income inequality, (log) population, size of extractive industries, democratization (current), demographic dummy variables, economic openness (current), religious make-up variables, regional dummies (see Chapter 2 for details). \* Significant at the 10% level, \*\* significant at the 5% level, \*\*\*significant at the 1% level. CPI score divided by 10 to aid interpretation. OLS results are -0.009 (0.0055); 0.19\*\*\* (0.06); 0.14\* (0.081), for the interaction term-for models (1), (2) and (3) respectively. Replicating the results using bootstrap standard errors does not yield significantly different outcomes. See Chapter 2, Section 4.1.3, and Appendix A for details of variable descriptions).

Source: The Author

Overall, the finding of the regression analysis suggests that in a high-income democracy context, consistent with the model, in which retrospective evaluation of incumbents is most likely to be feasible, a higher EDD/NEDD ratio is associated with less rent extraction, as the model in Section 3.2 and its antecedent literature would

anticipate. These findings remain robust, irrespective of the use of different dependent variable specifications, distributional assumptions, omitted variables (small/large datasets), or outlier observations.

### **4.3 Do Voters Use the EDD/NEDD Ratio to Explain the Level of Political Rent Extraction?**

Do voters really use the EDD/NEDD ratio to anticipate the level of rent extraction? So far this Chapter has shown that perceptions of the behaviour of EDDs by elite experts vary, as anticipated, given the EDD/NEDD ratio. However, an additional test of the robustness of the theory is to examine whether in fact voters perceive that the EDD/NEDD ratio affects the average level of rent extraction in ‘political life.’ If the model is correct, and rent minimization occurs in the first stage due to the anticipated ability of voters to retrospectively punish/reward only EDDs (second stage), this outcome should also be observed. This is because voters can use the EDD/NEDD ratio to infer the proportion of senior policy-makers insulated from the incentives of elections, and will thus use this to infer the magnitude of rent extraction in political life (positive test). Furthermore, if this assumption of the model is correct, it should also be the case that perceptions of the level of rent extraction undertaken by policy-makers far removed from the control of elected officials, should not be predicted variation in the EDD/NEDD ratio, as such activities are rarely directly handled or supervised by elected officials (e.g. petty street level corruption) (negative test).

It is relatively easy to identify the sort of activities likely to fall (or potentially fall) under the oversight of elected officials, and those activities that will, even in high EDD/NEDD ratio countries, fall under the control of NEDDs. Rent extraction involving

the passage of legislation, the abuse of parliamentary allowances, illicit payments to elected officials by lobbyists etc. are clearly the preserve of elected officials. Conversely, the demand for petty bribes to undertake routine administrative tasks, administrative malpractice (at the local level) etc., are the preserve of bureaucrats who are, at least in high-income democracies, far removed from the direct oversight of elected officials<sup>96</sup>.

Of course, on the margin, many activities can be undertaken by either bureaucrats or elected officials. Thus, laws may be passed by the legislature but formulated primarily by elected officials or bureaucrats (as determined by the EDD/NEDD ratio). Therefore, rents perceived to be associated with ‘political life’ (broadly defined to include macro-level governance, e.g. the making of legislation or ‘grand political corruption’) should be determined by the EDD/NEDD ratio, since a greater control of these activities by elected versus unelected officials affects the magnitude of career concerned rent minimization. Conversely, even if oversight of the bureaucracy is substantial, many every day occurrences of ‘petty’ (family or personal) rent extraction are only very indirectly associated with elected officials. It is, therefore, irrational to expect voters to attach much significance to the competency of elected officials if lower level bureaucrats, not directly or easily accountable to elected officials, are held responsible for the actions of such actors.

Using the data from the Global Corruption Barometer (see Chapter 2 for details) it is possible to examine whether voters’ perceptions of rent extraction in different policy domains does in fact conform to these predictions. The specific questions of interest are: (1) ‘Corruption is a significant problem in political life’ (yes/no/don’t know) and (2) ‘Corruption is a significant problem in personal/family life’ (yes/no/don’t know). Both

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<sup>96</sup> A point now conceded even by the ‘congressional dominance literature’ (see Muller, 2001, pp. 386-405).

questions are focused on corruption rather than the broader issue of rent extraction, which potentially generates measurement error and means that the results need to be treated with caution. However, despite this, the empirical evidence does conform to the expectations of the model.

As Table 4.06 shows, whether utilizing either the Additive or Factor measures of the EDD/NEDD ratio as well as the vector of all basic control variables, the multivariate results mirror the bivariate ones. Namely, the EDD/NEDD ratio robustly predicts declines in perceptions of rent extraction in the case of political life (Regression Model 1 and 2) but not in the case of rents in every day life (Regression Model 3 and 4).

Table 4.06: The Determinants of Voters' Perception of Rent Extraction

	Corruption is a Problem in Political Life (Proportion)		Corruption is a Problem in Personal/Family Life (Proportion)	
	(1) (GLM)	(2) (GLM)	(3) (GLM)	(4) (GLM)
	Additive	Factor	Additive	Factor
<b>Higher EDD/NEDD Ratio</b>	-0.16** (0.067)	-0.36** (0.16)	0.0083 (0.092)	0.026 (0.21)
<b>Varieties of Capitalism</b>	0.53* (0.28)	0.58** (0.28)	-1.32*** (0.41)	-1.31*** (0.42)
<b>Economic Openness (Long-Term)</b>	-4.51*** (1.33)	-5.04** (1.99)	5.17*** (1.76)	5.17*** (1.60)
<b>Latitude</b>	-5.06*** (1.82)	-5.68*** (1.91)	1.30 (2.18)	1.37 (0.69)
<b>(log) Per capita income</b>	-0.77* (0.40)	-0.95 (0.87)	-0.11 (0.65)	-0.12 (0.64)
<b>School Enrolment</b>	-0.017 (0.18)	-0.021 (0.017)	0.031 (0.023)	0.030 (0.022)
<b>Sample</b>	High-Income OECD	High-Income OECD	High-Income OECD	High-Income OECD
<b>Number of Observations</b>	17	17	17	17
<b>(Pseudo Log)-Likelihood</b>	-7.18	-7.23	-4.40	-4.42

Robust standard errors in parentheses. \* Denotes significant at the 10% level, \*\* significant at the 5% level, \*\*\*significant at the 1% level. See Chapter 2, Section 4.1.3, and Appendix A for details of variable descriptions.

Source: The Author

#### 4.4 Conclusion

The theoretical model derived in Chapter 3 predicted that an increase in the EDD/NEDD ratio, in a functioning democratic context (operationally a high-income democracy), should reduce the incidence of rent extraction. This is because a greater ratio of policy-makers (in the first stage) would be incentivized by the anticipated reaction of voters in the second stage, to consider the opportunity cost of re-election before deciding to pursue a policy of short-term rent-maximization. As increments in the EDD/NEDD ratio reduce the level of policy-making complexity, and thus increase the efficacy of elections, it follows that a decrease/increase in the scope of government (level of expenditure, regulatory output, etc.) and the level of policy-coordination, should decrease/increase the EDD/NEDD ratio and, therefore, at least in high-income democracies, result in increased rent extraction.

Using similar determinants of the EDD/NEDD ratio, such as Duch-Stevenson (2008), the bivariate (Section 4.2) and the multivariate analysis (Section 4.3), show that, broadly consistent with these theoretical expectations, a more limited (higher EDD/NEDD ratio) or more extensive (lower EDD/NEDD ratio) policy-making context can robustly predict increases or decreases in rent extraction primarily in a high-income democracy context. That is, these findings show that even when controlling for alternative control mechanisms, a higher EDD/NEDD ratio is associated with less rent extraction within this sub-set of countries.

Furthermore, as anticipated by theory, tentative evidence from voter surveys also suggests that the EDD/NEDD ratio can explain the level of rents pertaining to political life (likely to entail the activities of elected and accountable bureaucrats) and less able to

explain the level of rents amongst activities always likely to be outside the purview of elected officials (street level bribery), an outcome also broadly consistent with the rational calculus behind the model.

However, it is also important to note the limitations of this approach. Firstly, the fact that components of the EDD/NEDD ratio have a positive and statistically significant effect on the level of rents in non-democracies cannot be explained by the theoretical model. It may well be the case that amongst this group of countries, measures like government expenditure are capturing uncontrolled for variables such as state capacity. Nevertheless, such findings may also help explain why empirical studies linking rent extraction with government expenditure and/or regulatory density (see Introduction) have produced mixed results, because they have usually failed to treat high-income democracies as a separate category to both democracies and non-democracies. Secondly, the fact that, due to the nature of the dependent variable (see Introduction and Chapter 2), it is not possible to measure over time variation in voter perceptions of rent extraction, changes in the EDD/NEDD ratio, and hence the dynamic reaction of voters and incumbents to changes in their strategic bargaining position. Despite this, the cross-sectional evidence, with respect to both elite perceptions and voter perceptions, is broadly consistent with the expectations of the strategic interaction anticipated by the theoretical model.

Of course, the interaction of electorally accountable and electorally unaccountable public policy-makers is not the only determinant of the efficacy of elections in incentivizing career concerned, electorally-dependent decision-makers to pursue a rent-minimizing agenda in order to secure re-election. As Section 3.3 formally demonstrates, the nature of electoral

competition may also alter the incentives that incumbents face in order to pursue different rent-extracting strategies. Specifically, if the electoral context makes it more/less likely that the individual contribution of incumbents (whether individuals or cohesive parties) can be deduced, it shows how it affects the incentives incumbents face in order to pursue less/more rent-extracting strategies. Thus, while having some policy discretion vis-à-vis NEDDs is important in anticipating variation in rent extraction, the manner in which EDDs make policy now needs to be investigated if the full extent of the extended career concerns model is to be determined.

## **Chapter 5 Variation in the EDD/NEDD Ratio Across Institutions, and Voter Perceptions of Rent Extraction**

Are voters' perceptions of the magnitude of rent extraction, of any given institution, determined by the said institution's distinct EDD/NEDD ratio? In other words, is there evidence that voters' beliefs about the level of rents generated by an institution are consistent with the rational expectations that underpin the theoretical model? The empirical results in Chapter 4 were mainly focused on demonstrating that the EDD/NEDD ratio can predict variations in (1) perception of rent extraction amongst elites (academics, business people etc.) as well as (2) (narrow) objective indicators of rent extraction (see Appendix B). As such elites are, at least in high-income democracies, the most likely subset of the population to suffer (or at least be aware of) the magnitude of rent extraction<sup>97</sup> this was a critical endeavour and a necessary first step in testing how robust the theoretical predictions of the model truly were. However, this evidence only provides an incomplete test of the theoretical model's predictive capabilities.

This is because while the model does predict that the *overall* incidence and elite perceptions of rents should be a function of the EDD/NEDD ratio, it also predicts *how* this incentivization will occur: via the anticipated or actual reaction of voters to incumbents' actions (level of rents) and what this allows voters to deduce about an incumbent's competency. As (1) the distribution of policy-making responsibility between EDDs and NEDDs is common knowledge, it follows that, if the theoretical model is

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<sup>97</sup> Demand for lobbying contributions, bribes etc.

correct, and voters subjective perceptions of rent extraction reflect objective reality, then (2) voters can also use the EDD/NEDD ratio to predict the average level of rent extraction undertaken by policy-makers. Therefore, determining whether voters' perceptions of rent extraction are in fact determined by an institution's unique EDD/NEDD ratio is the next critical step in more comprehensively testing the theoretical assumptions and predictions, and hence overall robustness, of the proposed theoretical model.

More specifically, if this theoretical model is correct, then it follows that an institution's perceived average level of rent extraction at any one time should be predicted by its unique (institutional) EDD/NEDD ratio. That is, (1) the higher the EDD/NEDD ratio, and assuming that perceptions of the levels of rents by voters closely correspond to the actual level of rents extracted, then (2) the greater the incentive for career concerned rent-minimization amongst a greater proportion of the institution's decision-makers, and therefore (3) a lower level of average actual and perceived rent extraction by these actors. Of course it is important to note that while such perceptions of rent extraction may be noisy this should not generate significant biases in the results. This is because, as already shown by the strong correlation between elite, voter, and narrow objective indicators of rent extraction (see Chapter 2), as well as the ability of the EDD/NEDD ratio to predict (1) elite perceptions of rent extraction (Chapter 4) and (2) narrow objective indicators of rent extraction (Appendix B) there is little evidence to suggest that the perceptions of voters are at odds with those of experts or actual events. Testing this hypothesis that voters, and not just elites, are updating their beliefs about the level of rent extraction, based on an institution's specific EDD/NEDD ratio, is therefore

both feasible and critical.

This Chapter achieves this research objective by using survey data of voter perceptions of rent extraction from across the high-income democracies that are also EU member states (the EU-15<sup>98</sup>). Using the EU sub-sample of high-income democracies is desirable, because of the fact that voters in EU member states face a unique multi-level governance mode of decision-making in which (1) there *is significant variation* of the EDD/NEDD ratio across EU member states (different member states have very distinct EDD/NEDD ratios; see Chapter 4 and Appendix A), but also (2) there is a second institutional decision-making level – the EU – whose *modus operandi* (EDD/NEDD ratio) is *constant* across all EU member states (that is, the EU level EDD/NEDD ratio cannot be correlated with the national level EDD/NEDD ratio across all EU member states, as the first one varies across all member states while the second one is constant across all member states).

This substantive (multi-level) setting allows for the rigorous testing of the link between an institution's EDD/NEDD ratio and voter perceptions of rent extraction, as it allows for the utilization of both (1) a 'positive test' of the hypothesis – a given institution's EDD/NEDD ratio should predict voter perceptions of the said institution's average level of rents – as well as (2) a 'negative test' of the hypothesis – a given institution's EDD/NEDD ratio does not predict the level of perceived rents of another institution – assuming that the two institutions have a different EDD/NEDD ratio.

More specifically, it follows that, if the model is correct, (1) the national EDD/NEDD ratio should predict voters' perception of national rent extraction (in the

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<sup>98</sup> Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden and the United Kingdom.

same manner as elite perceptions of rent extraction were predicted by the national EDD/NEDD ratio in Chapter 4 – positive test), but (2) the national EDD/NEDD ratio should not, as explained above, be able to predict voter perceptions of rent extraction at the EU level (negative test). Unlike in the national context, in which the EDD/NEDD ratio varies considerably across member states, the EU level EDD/NEDD ratio is constant, and therefore the two cannot be correlated across all member states<sup>99</sup>.

In addition to providing a multi-level context in which to test the nuanced implications of the model, the use of the EU dataset also allows for two complementary tests of the robustness of the results reported in Chapter 4. Specifically, by (1) **using a more homogenous sample of countries** – EU member states are, on average, less geographically, historically, and, in some ways, institutionally distinct from each other vis-à-vis other OECD countries<sup>100</sup> – it is possible to control for some potentially unobserved cross-sectional omitted variable bias not controlled for in the larger OECD sample that may be driving the results reported in Chapter 4. Of course, the disadvantage of this approach is that the smaller sample size reduces the number of controls that can be used in any regression model, due to a smaller number of degrees of freedom; (2) **the use of a different dependent variable** – while the previous Chapter clearly demonstrated the consistency of the results when using multiple indicators of rent extraction, the fact that the findings below are based on the use of a different survey instrument, developed by Eurostat (2006, online), and not one of the organizations devoted to measuring rent

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<sup>99</sup> Of course, it is important to note that, in some member states, the national EDD/NEDD ratio may be similar to the EU level EDD/NEDD ratio. However, given the significant variation in EDD/NEDD ratios across EU member states (see Appendix A) this is unlikely to result in a spurious correlation.

<sup>100</sup> Especially, with respect to South Korea, Japan and to a lesser extent Australia, Canada, New Zealand, and the USA. In particular, European countries share a common legacy of close geographic proximity, the legacy of World War II, and a much larger welfare state vis-à-vis other high-income democracies. Of course, this may be less true of the UK, and Ireland vis-à-vis the other English speaking democracies.

extraction, but still yield the same outcome (a strong negative association between the (appropriate) EDD/NEDD ratio and the magnitude of perceived rent extraction) increases the confidence we can have in the use of subjective instruments to consistently measure perceptions of rent extraction. Of course, consistency does not necessarily imply validity, but given the large amount of evidence linking subjective indicators to objective outcomes of rent extraction (Chapter 2) these findings do increase confidence in the robustness of the main results. In short, the different dataset and dependent variables used to test the implications of the model in this Chapter, while not immune from criticism (small sample size etc.), provide a necessary extension of (as well as a complementary robustness test to) the data analysis undertaken in Chapter 4.

The research objective of this Chapter is realized via the following sections: Section 5.1 expounds on the theoretical logic and substantive assumptions behind the case study. Essentially, the aim of this section is to formally establish why the multi-level configuration of public policy-making institutions (the EDD/NEDD ratios) may alter voter perception of the levels of rent extraction at the national and EU levels in predictable ways, and thereby providing a basis for deriving the identification strategy (Section 5.2), as well as the testing of the ensuing, theoretically derived and substantively enriched, hypotheses (Section 5.3). The Chapter concludes with a critical evaluation of the findings that are, despite the limitations noted above, consistent with the predictions of the model. Thus, the Chapter provides a complementary robustness check of the empirical veracity of the model.

### **5.1 The EDD/NEDD Ratio and Perceptions of an Institution's Average Level of Rents**

In order to operationalize and test the proposed hypotheses, it is first necessary to explore how, according to the theoretical model, the EDD/NEDD ratio of different policy-making institutions will be used by voters to make predictions about the said institutions' average level of rent extraction. This essentially entails disaggregating the results in Chapter 3, which focus on predicting the overall level of rents in a country as determined by the said country's overall EDD/NEDD ratio, so that the contribution of *each* institution involved in policy-making (at the national and supra-national level) can be analyzed separately. This will enable specific predictions to be made about how rational voters would be expected to use a given institution's EDD/NEDD ratios to make predictions about its average level of rents (positive test), but also that the said institution's EDD/NEDD ratio should not be able to predict voters' perceptions of rent extraction of another institution, which has a very different EDD/NEDD ratio (negative test).

Having provided a generic formalization of these theoretical mechanisms, it then becomes possible to examine, substantively, the nature of national and EU policy-making. This exposition thus facilitates the operationalization of the 'negative test' – that rational voters will not use the EDD/NEDD ratio of one institution to make predictions about another institution – as the exercise demonstrates that EU policy-making is constant across member states, and therefore that this constant supra-national EDD/NEDD ratio cannot be correlated with the national EDD/NEDD ratio as the latter varies considerably across member states.

### 5.1.1 Institutions with Different EDD/NEDD ratios and Rational Voter's Perceptions

Recall that, as the model in Section 3.2 formally demonstrates, the overall EDD/NEDD ratio of a country is hypothesized to predict variation in the level of rent extraction it generates, as career concerned EDDs are likely to have a stronger incentive to pursue a rent-minimizing strategy vis-à-vis NEDDs. It therefore follows that if a specific policy-making institution has a significantly higher EDD/NEDD ratio than another institution, voters will perceive the former institution to be, on average, less rent-extracting than the latter. Formally, recall that overall rents in any one period (3.24) are a function of both the activities of EDDs ( $\alpha$ ) and NEDDs ( $1 - \alpha$ ):

$$r_{ij1} = (\alpha\bar{\tau}y - \chi\delta(R + \alpha\bar{\tau}y)) + (1 - \alpha)\bar{\tau}y \quad (5.01a)$$

If policy-making is a function of two distinct institutions (say, national – NAT – and EU decision-making) then the total rents in a polity, at any given time, will simply be the sum of rents generated by the policy-makers working in both these institutions. These are, in turn, at least partly a function of the distinct EDD/NEDD ratio of each of these institutions. That is:

$$\sum r_{ij1} = r_{ij1}^{NAT}((\alpha\bar{\tau}y - \chi\delta(R + \alpha\bar{\tau}y)) + (1 - \alpha)\bar{\tau}y) + EU_{rij1}((\alpha\bar{\tau}y - \chi\delta(R + \alpha\bar{\tau}y)) + (1 - \alpha)\bar{\tau}y) \quad (5.01b)$$

If the rational expectations hypothesis underpinning the theoretical model is correct, then

it follows that the contribution of each specific institution to the level of overall rents can be deduced from the EDD/NEDD ratio of the said institution, and is assumed to be common knowledge. That is:

$$P(REN_{nat}) = f\left(\frac{EDD}{NEDD} NAT\right) \tag{5.02a}$$

and

$$P(REN_{EU}) = f\left(\frac{EDD}{NEDD} EU\right) \tag{5.02b}$$

Where  $P(REN)$  is voter perceptions of rent extraction of a given institution and  $f()$  denotes a function of the institution's EDD/NEDD ratio. As the EDD/NEDD ratio is common knowledge (see Chapter 3), it follows that rational voters will use an institution's specific EDD/NEDD ratio to update their beliefs about how much rent extraction an institution will generate. Thus, this formalization allows the derivation of the 'positive test' that voter perceptions of the EDD/NEDD ratio of a given institution should be able to predict the said institution's level of perceived rent extraction.

Furthermore, if there are substantial disparities between the EDD/NEDD ratios of different institutions, then it follows that the EDD/NEDD ratio of one institution will not be able to predict (or, more accurately, be correlated with) the level of rent extraction of the other. Formally, using the national level and EU level institutions as an example, if:

$$\frac{EDD}{NEDD} NAT \text{ does not equal to } \frac{EDD}{NEDD} EU \quad (5.03)$$

Then:

$$P(REN_{nat}) \neq corr\left(\frac{EDD}{NEDD} EU\right) \quad (5.04a)$$

And

$$P(REN_{EU}) \neq corr\left(\frac{EDD}{NEDD} NAT\right) \quad (5.04b),$$

Where ‘corr’ is the correlation coefficient.

From this fact, it is possible to predict that if the EU level EDD/NEDD ratio is constant across member states but the national EDD/NEDD ratio varies significantly across EU member states, then the national EDD/NEDD ratio will not be able to predict the EU level EDD/NEDD ratio (as this varies significantly across member states) – the negative test. Furthermore, if the model is correct, the national level EDD/NEDD ratio will predict variation in voters’ perceptions of rent extraction at the national level -the positive test.

### **5.1.2 Substantive Assumptions Regarding Institutional Choice and the EU**

Before considering how voters perceive EU and national institutions, it is necessary to briefly consider (1) why rational voters might tolerate a multi-level institutional context in which different institutions generate different incentives for rent extraction (have different EDD/NEDD ratios) and (2) whether, substantively, it makes sense to assume that the EU has a constant EDD/NEDD ratio across EU member states. This thereby establishes why rational voters might tolerate a multi-institutional modus operandi in which different institutions generate different levels of rents and why the national EDD/NEDD ratio should not be correlated with perceptions of rents at the EU level.

#### ***5.1.2.1 The Instrumental Selection of Institutions***

Why would voters tolerate the existence of different policy-making institutions if they are substitutes, and generate different incentives for rent extraction? A large literature now exists whose aim is to examine how and why specific institutions can evolve and be sustained over time. While a critical evaluation of this vast literature is beyond the scope of this Chapter, briefly engaging with some of the key findings and assumptions of this work is helpful. This is because these works can explain why rational voters may tolerate the development of institutions with different EDD/NEDD ratios, even though from a purely rent-minimizing perspective it might have been assumed that such voters would only allow the development of the most rent-minimizing (high EDD/NEDD) institutions to occur.

The positive literature on institutional genesis assumes, like the political economy

literature in general, that it is common knowledge (amongst voters) as to how different institutions can affect the strategic interaction of actors (Riker, 1982) by the way in which they generate structure-induced equilibria (Shepsle, 1979). Therefore, a large number of scholars have argued that specific institutional configurations and/or their popularity can be explained by recourse to how institutions alter the relative bargaining position of different groups. Thus, for example, Acemoglu and Robinson (2004) argue that the political regime a country embraces (democratic/non-democratic) is a function of the relative costs and benefits of revolution and repression. Additionally, Alesina and Spolaore (2003) argue that the institutional and fiscal attributes of federations/political unions are determined by sub-national political considerations. Furthermore, Hubber and Shippan (2002) argue that the nature of legislation authorizing bureaucratic activities (either granting wide or narrow discretion) is a function of policy uncertainty and policy conflict amongst legislators. In short, because institutions condition the subsequent nature of public policy outcomes, it is reasonable to assume that rational voters would be reluctant to form and distribute policy tasks to a new institution that has a lower EDD/NEDD ratio (higher propensity for rents) than existing institutions<sup>101</sup>.

With respect to policy-making at the EU, there is definitely evidence that national electorates play a critical role in shaping the functions, and hence the EDD/NEDD ratio of the said institution, as the rational expectations assumption of the model would suggest. As Beramendi (2007) has argued, the preferences of voters could explain why

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<sup>101</sup> A good example of how the logic of the instrumental selection of institutions' works can be seen from the evolution of the literature on bureaucratic oversight, b. Beginning with Niskanen's (1971) argument that, in the absence of effective oversight (non-institutional setting), bureaucrats would have an incentive to deviate from the policy preferences of their principals, helped spawn a vast literature on how elected officials instrumentally design institutions in order to diminish the powers of bureaucracies. Thus, by establishing specialist committees of oversight, designing bureaucratic set-up in specific ways and/or wording enabling legislation in different ways, can alter the dynamics of interaction between bureaucrats and elected officials (see Muller, 2001).

the EU, despite its common market and increasingly homogenized regulatory structure, has never adopted a common fiscal structure (opposition from member state electorates generated by cross-national variations in income and subsequent redistribution expectations). Micro-level evidence also suggests that EU electorates condition their perceptions of the desirability of EU policy-making, given how it affects the national security and trade interests of their country (Alvarez, 2002). Still, it is difficult to see why, from a rent-minimizing perspective, rational voters in high EDD/NEDD member states would tolerate the development of a relatively insular (lower EDD/NEDD) policy-making context (EU policy-making), or at the very least continue to tolerate the transfer of decision-making to the EU, even though such transfers limit their ability to minimize rent extraction via the incentives provided by elections.

However, the rational choice literature is also able to answer this puzzle as to why voters might tolerate the existence of institutions with different EDD/NEDD ratios. This is due to the fact that the minimization of the EDD/NEDD ratio is the only factor affecting voters' decisions to tolerate and/or accept the existence of different institutions. As Besley and Coate (2000) have formally shown, the ability of policy-makers to 'bundle decisions' together means that voters may still re-elect incumbents who pursue sub-optimal policies (establishing institutions with lower EDD/NEDD ratios) in one or more dimensions, but who still provide enough of the critical 'bundle' of goods and services in other areas to satisfy voters' re-election thresholds (e.g. in the context of the career concerns model, signalling a high competency in providing publicly-financed goods and services). For example, EU voters in countries with a relatively high EDD/NEDD ratio face a greater 'governance' cost of EU membership than their peers in other EU member

states. Still, voters may re-elect a policy-maker who pursues further EU integration, even if this is deeply unpopular<sup>102</sup>, because such a policy-maker can still demonstrate, over the other areas they control, that they are of average or above-average competency<sup>103</sup>. In this way, once established, institutions with different EDD/NEDD ratios may persist, even if voters would be better off abolishing some of them or limiting their functions to only certain activities.

### ***5.1.2.2 The Nature of EU Policy-Making***

How does EU level policy-making compare to national policy-making? Is it reasonable to assume that it does not vary much across EU member states? If rational voters' perceptions of the relative level of rent extraction at the EU versus the national level is determined by their respective EDD/NEDD ratios, it is necessary to briefly explore the nature of EU policy-making in order to identify how voters, nested in different national policy-making contexts, will perceive the EU's performance. Given the institutional set-up of the EU, it is easy to deduce that EU policy-making has the following characteristics: (1) EU policy-making is constant across EU member states

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<sup>102</sup> One only has to observe the reluctance of national policy-making elites to subject the expansion of EU competencies to national referenda, to see the importance of issue- bundling in order to limit voter control of institutional genesis.

<sup>103</sup> Indeed, while the arguments presented here focus on how the EDD/NEDD ratio predicts the relative institutional 'cost' of EU membership, it cannot be used to predict the net effect of EU membership. For example, countries with a high EDD/NEDD ratio (more liberal political economies) may wish to join the EU in order to benefit from a reduction in inequality and increased incentives for intermediate training opportunities (Iversen and Soskice, 2009). In such a case, EU membership by altering the EDD/NEDD ratio may generate more costs (loss of political accountability) as well as increased benefits (less inequality). Testing such a hypothesis would require, in the first instance, determining whether EU membership reduces the percentage of respondents who have no opinion about EU membership, as higher costs and benefits would most likely induce clearer/more-polarized opinions about the net effect of EU membership. Voters more concerned with the increased costs would become increasingly euro-skeptic, and voters concerned with reduced inequality would become more pro-European.

(uniform EDD/NEDD ratio); and therefore, (2) holding constant for other factors, countries with a relatively high national EDD/NEDD ratio, and hence relatively low incentives for national level rent extraction, will, on the margin, suffer a greater loss/enjoy less of a ‘governance dividend’ when joining the EU vis-à-vis countries that have a lower pre-existing EDD/NEDD ratio. That is, voters in these countries will perceive the EU to be, on average, more rent-extracting vis-à-vis their national institutions. Generally, this is because the nature of EU policy-making allows for a relatively greater role for unelected public policy-makers (NEDDs) who, in practice, enjoy more lax oversight from elected (supra-national and or intergovernmental) actors Alesina and Perrotti (2004).

Irrespective of how it compares to the national context, the EU EDD/NEDD ratio will be constant across member states as most of its activities have a direct effect on all member states. Specifically:

- (1) The bureaucratic arm of the EU – the European Commission – has the power to initiate all legislation (agenda setting powers) and to supervise regulatory implementation across all the member states. This thereby generates a constant initiation and implementation *modus operandi*, which clearly does not vary across member states. While EU commissioners are appointed by member states, and the European Parliament must approve and can dismiss the Commission as a whole, the ability of elected officials to exercise day to day oversight of this bureaucracy, especially with respect to their agenda-setting powers, is significantly less than the power that elected officials have at the national level. Furthermore, the

decisions of commissioners affect all EU member states not just their country of origin.

- (2) EU Regulations and the intended effect of EU Directives (different types of legislation) made at the EU level by the interaction of the Commission, EU Parliament, and the Council of Ministers are either immediately applicable at the national context (Regulations) or allow some leeway for implementation, but only as long as this realizes their intended effect (Directives). Thus, the legislative activities of the EU are undertaken at the EU level and have legal effect across all member states.
- (3) The European Court of Justice (ECJ) has the power to strike down any laws that contravene EU legislation, ensuring that the activities of the other EU institutions enjoy uniform legal enforcement across the EU.

In short, in terms of executive activities, legislative initiation, transposition, and judicial oversight, the EU's *modus operandi* (EDD/NEDD ratio) is constant across all its member states. Therefore, it should be the case that when taking EU member states together, the national EDD/NEDD ratio variable should not be able to predict EU levels of rent extraction as the two should be uncorrelated (negative test) while at the same time it should be able to predict perceptions of rent extraction at the national level (positive test).

## **5.2 Identification and Operationalization of the Theoretical Model**

Given the generic implications of the model (positive and negative hypotheses) as well as the substantive assumptions that the EU EDD/NEDD ratio is constant across EU states (while the national EDD/NEDD ratio is not), testing the model requires, at a minimum, data on: (1) comparative information regarding voters' perception of rent extraction at the national and EU levels (dependent variable of interest); (2) a measure of the national EDD/NEDD ratio for each member state (independent variable of interest); as well as (3) an identified vector of control variables that may also determine the perceptions of rent extraction and may be correlated with the EDD/NEDD ratio.

### **5.2.1 Comparative Information on Voters Perception of Rent Extraction**

Comparative information on perceptions of the magnitude of rent extraction of different institutions – in this case national and EU level institutions – is available from a special 'Flash Eurobarometer' (Eurostat, 2006) survey on perceptions of organized, cross-border crime and corruption within the EU (see Appendix A for details)<sup>104</sup>. The survey provides consistent data on answers provided by a weighted sample of EU citizens across all member states. Specifically, the survey asks respondents a set of questions regarding their perception of corruption amongst different institutions. In this case, the two questions of interest are ones that asked respondents to agree, disagree, or respond that they did not know the answer to the following statements: (1) 'There is corruption in national institutions in our country,' (ibid, p.12) and (2) 'There is corruption within the institutions

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<sup>104</sup> See (<http://www.gesis.org/dienstleistungen/daten/umfragedaten/eurobarometer-data-service/>).

of the European Union' (ibid, p.14).<sup>105</sup> The survey therefore provides interval data on the perceptions of rent extraction by a representative sample of EU voters.

Unfortunately, this survey was only conducted once and, critically; information on individual respondents is not available, thereby precluding multi-level analysis. While this means that the number of controls and the validity of the results need to be treated with caution, the fact that the empirical data conforms so closely with the expectations of the model and its robustly tested empirical hypotheses (see Chapter 4), as well as with antecedent work in the field (Duch and Stevenson, 2008), means that the results presented below provide a useful complementary, confidence-increasing test of the robustness of the model.

### **5.2.2 The National EDD/NEDD ratio**

The national EDD/NEDD ratio can be developed using a subset of variables developed to measure the overall EDD/NEDD ratio outlined in Chapter 4. Given the fact that: (1) the small size of fiscal transfers in the EU (the EU budget is fixed by the EU treaties) to just over 1% of EU GDP; and (2) while the EU policy is implemented by changes in national regulations (via EU regulations, directives and other legal instruments), the implementation of much of this regulation is left to national institutions (with the expectation of EU regulations, which have automatic legal effect). Thus, within the subset of high-income democracies that are also members of the EU, any variation in

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<sup>105</sup> The survey also asked respondents the same question with respect to regional and local governments, but as data on the EDDs/NEDDs ratio at these levels does not exist, the questions were not used. However, the fact that these questions do exist means that respondents should have been more likely to draw a distinction between their perceptions of national level and local/regional level rent extraction.

regulatory density is either due to (1) regulation in areas of national competency, or (2) the nationally conditioned implementation of EU legislation. Therefore, as EU laws that have direct effect on all member states (which do not require national implementation) do not vary across member states, relative variation in the regulatory density within EU states reflects the nature of national policy-making. It is therefore possible to use the first two components of the additive EDD/NEDD ratio constructed in Chapter 4 (see Section 4.2: the size of the private sector and regulatory quality), which can be utilized as a measure of the national EDD/NEDD ratio for the purposes of testing the implications of the model<sup>106</sup>. As in Chapter 4 the data is combined and turned into a fractional score.

Having data on perceptions of rent extraction at the national and EU level as well as the national EDD/NEDD ratio is therefore, sufficient to test the predictions of the model. Ideally, having data on the EDD/NEDD ratio at the EU level would allow for more robustness tests to be undertaken. Unfortunately, it is not possible to construct such an index, as information on the regulatory effect of the EU is not available.

### **5.2.3 Identification Strategy**

Given the existence of valid dependent and independent variables of interest, it is possible to test the two main hypotheses, utilizing the following identification strategies:

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<sup>106</sup> That is the EDD/NEDD ratio is constructed by using the inverse of government spending (as a proportion from zero-one) and the proportional score for regulatory quality (as a proportion from zero-one)-just as in the construction of the additive EDD/NEDD ratio (see Section 4.1). The only difference being that

$$RENT\_INST_i = \beta_i EDDs\_NAT_i + Z_i + u_i \quad (5.06)$$

*RENT\_INST* is the percentage of voters in country *i* who perceive national level policy-making to be rent-extracting; *EDDs\_NAT* is country *i*'s score on the national EDD/NEDD ratio (constructed as in Chapter 4, but without the dummy variable for EU membership); *Z<sub>i</sub>* is a vector of control variables. Expression (5.06) can be used to deduce whether (1) the national EDD/NEDD ratio can predict the absolute level of perceived rent extraction at the national level (Hypothesis I) and if (2) it fails to predict the absolute level of perceptions of rent extraction at the EU level (Hypothesis II).

#### **5.2.4 Controls and Distributional Considerations**

Given the relatively small population of cases (n=15), there is a limit to the number of controls that can be introduced. Fortunately, all the major variables, which have been identified by the literature on the determinants of perception of the EU, can be included, despite the lack of degrees of freedom. In order to take into account the fact that poorer member states may be less able to afford good quality institutions, controls for per capita income (interval) and economic growth (averaged over the last 5 years also interval) are included (see Chapter 2 and below for a description of these variables). In addition, and in order to take into account redistribution concerns, a dummy variable control for whether a country is a net contributor to the EU budget is also included. As in Chapter 4, a control for whether a country is a coordinated capitalist economy is included, as is a regional dummy to take into account whether a country is in the 'core

West' of the European Union (founding members: Belgium, France, Germany, Italy, Luxembourg, and the Netherlands). Finally, standard demographic controls, described in Chapter 2, are also included, as these may affect the EDD/NEDD ratio as well as respondents' perceptions of rent extraction.

As in Chapter 4, the dependent variable of interest is a fraction, ranging from 0-1 (0%-100% of respondents) and clearly not ordinal. Therefore, as explained in Chapter 2, a GLM specification, as recommended by Papke and Woolridge (1996), is likely to yield the most valid results. However, because the dependent variables may approximate a normal distribution, the OLS results are also reported in order to see how sensitive the initial results are to changes in distributional assumptions. As before, the IRLS model is used to test initial results when controlling for outliers (see Chapter 2 for details).

### **5.2.5 Rival Explanations of the Determinant of Voter Perceptions of Rent Extraction at the EU Level**

While the link between the national EDD/NEDD ratio and the efficacy of elections (retrospective voting) has been well established (Duch and Stevenson, 2008), and the same basic controls (described in detail in Chapter 2 and used in Chapter 4) are also utilized below. Generally, the determinants of voter perceptions of rent extraction at the EU level remain somewhat under-theorized and under-tested. However, a large corpus of theoretical and empirical work has linked changes in voters' attitude towards the EU (enthusiasm for, trust of, etc.) to specific micro- and macro-level variables. While significant research continues to take place regarding how different contextual variables may interact with each other (Garry and Tilley, 2009), the theoretical literature suggests

two broad categories of factors may affect voter perceptions of EU-level governance, and may also be associated with the EDD/NEDD ratio: ‘political economy’ and ‘identity’ factors.

While it is beyond the scope of this Chapter to examine the robustness of the theories and determinants of voter public opinion of EU level governance, it is essential to identify the major rival theoretical explanations as to why there may be a link between the EDD/NEDD ratio and perceptions of rent extraction at the EU level. This is especially important as many of the political economy determinants of rent extraction are likely to be correlated with both the EDD/NEDD ratio and the perceptions of EU rent extraction. Briefly, the following factors have been identified in the literature as being theoretically and empirically linked to perceptions of EU governance structures. Controlling for the impact of these other independent variables is important because, to some extent, the predictions of the theoretical work – linking these variables to perceptions of the quality of EU institutions – generate hypotheses, which in turn generate predictions that are sometimes similar to those linking the EDD/NEDD ratio to the quality of EU institutions. Controlling for these rival explanations, and determining whether the EDD/NEDD ratio can still predict outcomes independent of these effects, is therefore critical in assessing the robustness of the model.

- 1) **The Impact of the Common Market on Economic Specialization and Voter Adaptability.** As Alvarez (2000) has noted, the reduction in trade barriers between EU member states may result in the outward movement of the production possibility frontier (potentially benefiting everyone at the macro-level). However, the distribution of benefits arising from such an outcome is likely to benefit highly

educated white-collar workers vis-à-vis less educated workers who may be less mobile and hence less able to adjust to changing specializations. Therefore, controlling for educational attainment (at the macro-level level of education) is a critical explanatory variable of hostility or support of the EU. Countries with less-educated (mobile) workers are anticipated to have more Euro-sceptic publics than countries with better-educated voters. Therefore, unlike the EDD/NEDD ratio, it is anticipated that education attainment should be positively linked to perceptions of less rent extraction associated with EU membership. Alternatively, of course, to the extent that EU regulations and red tape are associated with reducing the benefits of free trade in high EDD/NEDD member states (many of which have open economies to the rest of the world), it is possible that increased education is associated with higher perceptions of rent extraction at the EU level: voters view the EU as a bastion of rent-seeking interest groups restricting their opportunities with counterparts in other parts of the world. Thus, the interval education variable of primary and secondary school enrolment of the relevant age group (see Chapter 2 for details) is included in some of the regression models.

**2) The Net Fiscal Impact of the Common Market on Public Finances.**

Independent of their individual circumstances, a large theoretical literature suggests that whether a country is a net recipient of, or contributor to, the EU, affects voters' perceptions of the utility and effectiveness of the European Union (Anderson, 1998). Thus, controlling for whether a country is a net receiver or net contributor of EU funds, as well as its per capita income, determines the opportunity cost of transfers from/receipts of EU on the national economy. Both a

high national EDD/NEED ratio and high contribution level to the EU should thus be negatively associated with increased perceptions of the quality of EU institutions. A dummy variable denoting whether a country is a net contributor to the EU's budget is therefore included in the some regression models (developed using data from Eurostat 2006). The interval indicator of the log of per capita income (see Chapter 2) is also included to capture the level of socio-economic development.

**3) GDP Growth.** Perceptions of the efficiency of institutions may determine or be determined by a country's EDD/NEED ratio. Furthermore, voters may attribute growth to the national EDD/NEED ratio or the EU. Therefore, it is quite possible that the national EDD/NEED ratio and perceptions of rent extraction at the EU level are correlated with GDP growth. In order to control for this, an interval variable, which averages GDP growth over the last five years before the survey (2000-2005; source: The World Bank, 2012) is included.

**4) The Variety of Capitalism.** The nature of EU policy-making necessitates adjustment at the national level. Countries whose policy-making *modus operandi* is similar to that of the EU – most often, although not in every issue dimension, coordinated capitalist economies – are more likely to have voters who perceive EU membership to be beneficial/less disruptive than countries in which the overall national decision-making *modus operandi* is not conducive to EU policy-making (liberal and Mediterranean political economies) (Hall and Soskice, 2001). As such, a dummy variable controlling for whether a country is a coordinated capitalist economy (most likely, but not always, to be institutionally compatible to

EU decisions) is included. The varieties of capitalism stipulate that support for a given EU policy should be conditional on whether an EU proposal is consistent with a member state's national political economy framework (Fioretos, 2001). Thus, Liberal Market Economies (LMEs) or Coordinated Market Economies (CMEs) will support proposals consistent with their institutional legacy and oppose ones that are inconsistent with it. Given that much of the EU *modus operandi* is based on a French institutional setup, which does not easily fit with either the LME or the CLE institutional legacy, it is not clear whether perceptions of the quality of the EU should vary systematically between CMEs and LMEs. However, the more consensus-based nature of EU policy-making is at odds with the more accountability-focused adversarial legacy of LMEs. The dummy variable denoting whether or not a country is a CME (see Chapter 4 for details) is therefore included in the regression analysis.

While none of the major political economy factors identified in the literature anticipate the link between the EDD/NEED ratio (independent variable) and perceptions of rent extraction at the national and EU level (dependent variable), controlling for these factors is important in mitigating omitted variable bias and, at the very least, showing that the regression results are robust to the inclusion of all standard political economy controls in the literature. In addition to these theoretically important variables, a large literature in the sociological and psychological tradition has linked geographical and demographic variables to voters' perceptions of rent extraction and the desirability of EU membership etc. (Trodal, 2001, for a review). While these controls are sometimes not motivated by

rational choice mechanisms, and their link to the EDD/NEDD ratio may not be robust, it is worth including them in some of the regression analyses in order to test the robustness of the baseline models. These controls are as follows:

**(1) Founding member of the European Union (West).** The six signatory states to the Treaty of Rome (1957) not only constitute the core of Western Europe (Belgium, Germany, France, Italy, the Netherlands, and Luxembourg) but also have a shared experience of the devastation of World War Two and the implications of Franco-German antagonisms emanating from the nineteenth century. As such, these countries may have been keen to create the EU even if it meant decision-making by institutions with less democratic accountability. Furthermore, given their geographical proximity and destruction during the Second World War, this factor may also be correlated with the national EDD/NEDD ratio: the consensual nature of policy-making in Germany and Italy was certainly encouraged by post-war institution-building, and is likely to depress the EDD/NEDD ratio. Thus, a dummy variable, taking the value of 1 if a country is a founding member of the EU, is included in some of the regression models.

**(2) Losing Side of the Second World War.** By linking the economies beginning with the militarily important coal and steel sectors, the EU was designed to help rehabilitate Germany, and to a lesser extent Italy, into European decision-making. Even today, Germany is the highest net contributor of EU spending. Again, these international relations dynamics affect the utility of EU membership (as perceived by voters), as well as the domestic EDD/NEDD ratio (if EU contributions can be

seen as technical or NEDD expenditure). Controlling for this factor is critical because voters in these countries are more willing to tolerate a lower EDD/NEDD ratio associated with EU membership. This can be important as it may affect both perception of rent extraction of the EU and the domestic EDD/NEDD ratio. Therefore, a dummy variable, taking the value of 1 if a country was on the losing side of the Second World War, is included in some of the regression models.

**(3) Demographic controls.** A country's demography is intricately linked with its EDD/NEDD ratio (aging populations tend to generate higher demands for welfare spending, public health etc.). Furthermore, older age groups are generally found to be more Euro-sceptic (Eurostat, 2012). Therefore, controlling for demographic variables using the percentage of the total population that is over 65 and the percentage of the population that is under 15 (dropped reference category of between 15-65) are included in some of the models (see Chapter 2 and Appendix A for details).

Having identified how to operationalize and test the hypotheses, given the substantive nature of the EU, it is now possible to assess whether the data is consistent with the theoretical expectations.

### **5.3 Results**

Three major patterns in the data should be present if the rational voter assumptions of the model and the substantive assumptions about the nature of EU policy-making are correct. Firstly, voters across the EU should perceive EU level rent extraction to be similar across countries (EU level homogenous EDD/NEDD ratio), while national level rent extraction

should be more varied (more significant variation at the national level). Secondly, the national EDD/NEDD ratio should predict national variation in rent extraction (Positive Test), but not EU level rent extraction across states (Negative Test).

### **5.3.1 Empirical Patterns in Voter Perceptions**

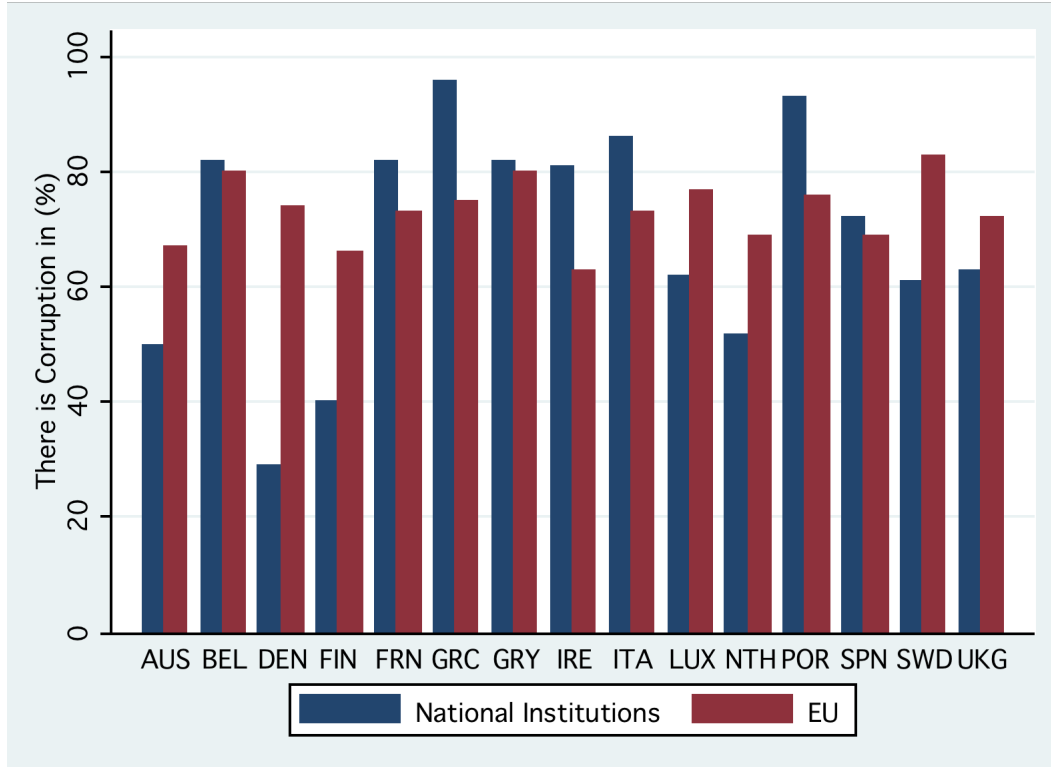
Do the patterns in the data conform to the anticipated theoretical and substantive expectations noted above? Namely, (1) is there significant variation in perceptions of rent extraction at the national level? (2) is the cross-national variation in perceptions of rent extraction significantly less with respect to the EU versus national institutions?

As both Table and Diagram 5.01 indicate, there is significant variation in perceptions of national level rent extraction amongst voters. Specifically, on average 68.7% of EU citizens perceive rent extraction to be a problem at the national level. However, this average masks significant variation, with the standard error being almost 20.0 percentage points when the full sample is used. Perceptions of rent extraction at the national level are smallest in Denmark (29% of respondents consider national institutions to be corrupt) and highest in Greece (96% of respondents consider national institutions to be corrupt). Even removing the most extreme cases in the sample does not change the fact that there is considerable variation in voter perceptions of rent extraction at the national level. Removing the two countries with the lowest perceptions of rent extraction at the national level (Denmark and Finland) does not eliminate the large variation: the standard error remains quite large at 15.0 percentage points. Going even further, and eliminating the countries with the highest perceptions of rent extraction at the national level (Greece and Portugal) in addition to Denmark and Finland, still yields a standard

error of 13.00 percentage points. Of course, while this variation is consistent with the theoretical expectations, it is only possible to verify whether they support the model once the bivariate and multivariate results establish whether the EDD/NEDD ratio is in fact correlated with this variation, in the manner anticipated by the model.

The second important piece of evidence from Table and Diagram 5.01 is that the variation in perceptions of rent extraction at the EU level is significantly less than that at the national level. This is what would be expected given the substantive assumption of rational voters and a constant EU level EDD/NEDD ratio. While the average voter does not perceive rent extraction at the EU level to be significantly greater than the average national institution (73% versus 69%) the variation in perceptions is significantly different. Specifically, variation in voter perceptions at the national level (where the EDD/NEDD ratio is also expected to vary significantly) is almost four times greater than variation in perceptions of rent extraction at the EU level (20% versus 6%, as the theory anticipates). Even when removing potential outlier cases, the magnitude of difference in variation remains significant. Specifically, the removal of Finland and Denmark still leaves the level of variation between national and EU institutions at a factor of three (15% versus 6%), while removing Greece and Portugal still leaves the variation in perceptions at the national level over twice that of the EU level (13% versus 6%).

Diagram 5.01 Variation in Perceptions of Rent Extraction at the National and EU Level (By Country)



Source: Author

Table 5.01: Percentage of Respondents Agreeing That There is Corruption in National Institutions/The European Union

Institution	Observations	Mean	Standard Error	Minimum	Maximum
National	15	68.73%	19.81%	29.00%	96.00%
EU	15	73.13%	5.64%	63.00%	83.00%
National	13	74.00%	15.07%	50.00%	96.00%
EU	13	73.62%	5.71%	63.00%	83.00%
National	11	70.27%	13.15%	50.00%	86.00%
EU	11	73.27%	6.18%	63.00%	83.00%

Source: Author

These results are very encouraging because, although not conclusive, they are consistent with the expectations of the model. As the EDD/NEDD ratio varies

significantly between EU countries, it is expected that if this determines voter perceptions of rent extraction, then variation in perceptions of rents at the national level would also vary considerably. Furthermore, the fact that EU decision-making ensures a uniform EDD/NEDD ratio across member states can be used to test the more nuanced implications of the model. Namely, that because the EU level EDD/NEDD ratio does not vary across member states, perceptions of rent extraction at the EU level should vary considerably less at the EU versus the national level, which is indeed the case. Of course, it now remains to be seen whether these patterns in the data are explained by the EDD/NEDD ratio.

### **5.3.2 Main Hypotheses**

The first empirical implication of the model is that the EDD/NEDD ratio of a given institution should predict voters' perception of the said institution's level of rent extraction (positive test). However, the EDD/NEDD ratio of one institution should not be able to predict the perceptions of rent extraction of another institution, assuming the two institutions have different EDD/NEDD ratios (negative test). With respect to the first hypothesis, as Table 5.02 indicates, the data is consistent with the theoretical expectations derived from the model. The national EDD/NEDD ratio is negatively and robustly associated with voter perceptions of more rent extraction at the national level. The magnitude and robustness of the predictive power of the EDD/NEDD ratio does not vary significantly when utilizing different vectors of control variables. This increases confidence in the robustness of these results, even though the small population size limits the confidence we can have in the result. The parsimonious first Regression Model,

which includes no additional control variables, can therefore easily be dismissed due to the possibility of omitted variable bias. However, given that these results do not vary with the inclusion of different controls (regional and demographic (Regression 2) or political economy variables (Regression 3) or all control (Regression 4)), are consistent with the empirical results in Chapter 4, as well as the antecedent literature (Duch and Stevenson, 2008), and not affected by outlier values (Regression 5), means that the results are quite robust. In short, the national EDD/NEDD ratio predicts voters' perceptions of rent extraction at the national level.

Table 5.02: Perceptions of National Rent Extraction and the National EDD/NEDD ratio

	Dependent Variable: Standardized Ratio of Perceptions of Rent Extraction (% of Respondents who Agree that Corruption is a Problem)				
Institutional Level	National				
	(1) (GLM)	(2) (GLM)	(3) (GLM)	(4) (GLM)	(5) (RWLS)
<b>National EDD/NEDD ratio</b>	-0.29** (0.12)	-0.28** (0.13)	-0.23** (0.11)	-0.17** (0.070)	-0.063** (0.025)
<b>Western European Core</b>		0.33 (0.46)		0.54** (0.23)	0.035 (0.062)
<b>Lost World War 2</b>		0.22 (0.70)		0.89*** (0.31)	dropped
<b>Population under 15</b>		-0.23 (0.19)		0.045 (0.12)	
<b>Population over 65</b>		-0.11 (0.20)		0.16 (0.13)	
<b>(log) Per Capita Income</b>			-0.23** (0.11)	0.17 (0.59)	
<b>Net Contributor</b>			0.70*** (0.20)	1.13*** (0.42)	0.14 (0.076)
<b>Growth in per Capita Income</b>			0.061 (0.16)	0.18 (0.13)	
<b>Coordinated Market Economies</b>			-0.76*** (0.25)	-0.69*** (0.25)	-0.19** (0.072)
<b>Number of Observations</b>	15	15	15	15	13
<b>Log-Likelihood</b>	-6.37	-6.20	-5.89	-5.62	NA

Note: robust standard errors in parentheses. \* Significant at the 10% level, \*\* significant at the 5% level, \*\*\*significant at the 1% level. OLS results are -0.057\*\* (0.025), -0.053 (0.30), -0.045 (0.028), -0.024 (0.023) for Models (1), (2), (3), and (4) respectively.

Source: The Author

Of course, given the small sample size and the lack of micro-level data, the results in Table 5.02 still have to be treated with considerable caution. However, as Table 5.03 indicates, the data does not only support the positive hypothesis (the link between the national EDD/NEDD ratio and voter perceptions of national level rent extraction), but also supports the negative hypothesis; namely, that the national EDD/NEDD ratio does

not predict the perceptions of rent extraction at the EU level. As Regression Model 1, 2, 3, 4 and 5 of Table 5.03 indicate, whether utilizing a very parsimonious specification (no controls; see Regression Model 1), political economy controls (Regression Model 2), geographical and demographic controls (Regression Model 3), all the controls identified in the literature (see Regression Model 4), or re-weighting to eliminate the effect of outlier observations (Regression Model 5), the national EDD/NEDD ratio fails to predict voter perceptions of rent extraction at the EU level. This outcome is consistent with the expectations of the theoretical model, that the cross-sectional constant EU level EDD/NEDD ratio cannot be correlated with the national level EDD/NEDD ratio (which varies considerably).

Thus, the findings in Table 5.03 increase the confidence that the model's hypotheses are robust, as it is significantly less likely that the findings of both Table 5.02 and 5.03 are driven by omitted variable bias, small sample size, etc.

Table 5.03: Perceptions of EU Rent Extraction and the National EDD/NEDD ratio

	Dependent Variable: Standardized Ratio of Perceptions of Rent Extraction (% of Respondents who Agree that Corruption is a Problem)		
Institutional Level	EU-Level		
	(1) (GLM)	(2) (GLM)	(3) (RWLS)
<b>National EDD/NEDD ratio</b>	-0.17 (0.070)	0.023 (0.033)	0.0014 (0.0080)
<b>Western European Core</b>		-0.032 (0.12)	
<b>Lost World War 2</b>		0.11 (0.14)	
<b>Population under 15</b>		0.23*** (0.053)	0.055*** (0.013)
<b>Population over 65</b>		0.34*** (0.054)	0.081*** (0.012)
<b>(log) Per Capita Income</b>		0.59* (0.35)	0.12* (0.059)
<b>Net Contributor</b>		0.59** (0.21)	0.17*** (0.039)
<b>Growth in per Capita Income</b>		-0.024 (0.059)	
<b>Coordinated Market Economies</b>		0.28** (0.13)	0.099*** (0.027)
<b>Number of Observations</b>	15	15	14
<b>Log-Likelihood</b>	-5.93	-5.80	NA

Note: robust standard errors in parentheses. Standard controls: aged (% over 65) net budget contributor, core EU, coordinated market economy, growth in GDP, log-per capita income and young (% under 16). \* Significant at the 10% level, \*\* significant at the 5% level, \*\*\*significant at the 1% level. OLS results are -0.014 (0.012) and 0.0064 (0.011) for Models (1) and (2) respectively.

Source: The Author

### 5.3.3 Ancillary Hypothesis/Robustness Test

Given the small number of observations, it is difficult to introduce a considerable number of controls in order to limit the possibility that the results are driven by omitted variable bias. However, it is possible to try and control for some potential omitted variables by developing a normalized version of the dependent variables of interest, that measure how

much perceptions of national/EU level rent extraction deviate from the average level of voters' perceptions of rent extraction across all institutions- national, local, and EU level- for which the data is available. Such a normalization is useful because it has the effect of controlling for any omitted variable that has a homogenous effect on perceptions of rent extraction within a given country. For example, if voters in all English-speaking countries have a greater likelihood of perceiving *all* public institutions as being more rent extracting than other countries, this normalization should control for this effect. Thereby, by examining how much a given institution is perceived as being more or less rent extracting than the average institution it becomes possible to eliminate the effect of any variables that influence the average level of perceptions across institutions within a country.

Of course such a normalization does not eliminate omitted variable bias, as if there is an uncontrolled variable which has a heterogeneous effect on the perceptions of rent extraction across institutions within a country, then this normalization will not control for this effect. Say, for example, if voters in English speaking countries are more prone to perceive the EU as being more rent extracting vis-à-vis other institutions then this normalization will not control for this effect.

This normalized dependent variable (theoretically) is interval and varies from 0.00-3.00. By dividing the raw normalized score by 3 it becomes a fraction ranging from 0-1, therefore it is possible to use the GLM specification to test the model (see Chapter 2)<sup>107</sup>. Formally the identification strategy becomes:

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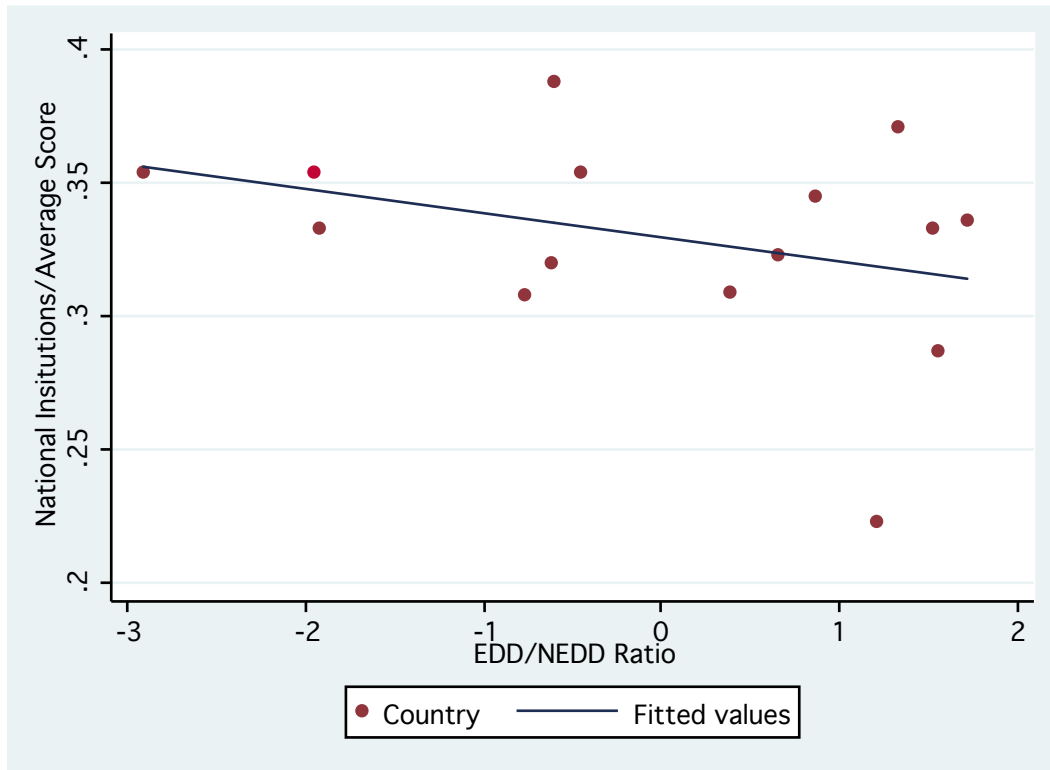
<sup>107</sup> As perceptions of rent extraction, of each institution, can range from 0-100% the maximum value the normalized score could take would be 3- if 100% of respondents considered national level institutions rent extracting and no respondents considered other institutions rent extracting; while the minimum score possible is 0 if no respondents considered national level institutions to be rent extracting.

$$\left( \frac{RENT\_INST_i}{(RENT\_NAT_i + RENT\_EU_i + RENT\_LOCAL_i)/3} \right)^3 = \beta_i EDDs\_NAT_i + u \quad (5.07)$$

Where  $\frac{RENT\_INST_i}{(RENT\_NAT + RENT\_EU + RENT\_LOCAL)/3}$  is the normalized and standardized percentage of voters in country  $i$  who perceive national or EU level policy-making to be rent extracting, relative to the average perception of rent extraction of all institutions (national, EU, and local). If an institutions' score is greater than 1 it is more rent extracting than average, while if it is less than 1 it is less rent extracting than average.

As Diagram 5.02 indicates, there is a robust bivariate association between the EDD/NEDD ratio and the extent to which national institutions are perceived as being more rent extracting than average. These results are very similar to the ones using the fraction of respondents, above- an unsurprising outcome given that the two indicators are highly – but not identically – correlated at 0.89. Despite the similarity, given the small sample size, and possible control for some types of omitted variables, the fact that the bivariate results remain robust is encouraging. Of course until the multivariate analysis is reviewed, it is not possible to determine whether the use of this dependent variable yields the same results as the initial analysis.

Diagram 5.02 Rent Extraction and the EDD/NEDD Ratio (Bivariate Results)



Source: Author

As Table 5.04 indicates, controlling for the vector of control variables noted above does not alter the robustness of the initial bivariate results. Namely, the national EDD/NEDD ratio can predict the standardized level of voter perceptions of rent extraction. While the most parsimonious model (Regression Model 1) is (just) not statistically significant, the introduction of geographical and demographic (Regression Model 2) or political economy (Regression Model 3), all control variables (Regression Model 4) and reweighting for outliers (Regression Model 5) yields statistically significant results that are consistent with the model's theoretically derived positive test (Section 5.1). This, even when normalizing against perceptions of rent extraction of other

institutions.

Table 5.04: Perceptions of National Rent Extraction and the National EDD/NEDD ratio

	Standardized Ratio of Perceptions of Rent Extraction (% of Respondents who Agree that Corruption is a Problem)				
Institutional Level	National/((National+EU+Local)/3)				
	(1) (GLM)	(2) (GLM)	(3) (GLM)	(4) (GLM)	(5) (IRLS)
<b>National EDD/NEDD ratio</b>	-0.066 (0.042)	-0.094** (0.043)	-0.049 (0.025)	-0.048*** (0.017)	-0.0037*** (0.00096)
<b>Western European Core</b>		0.12 (0.15)		0.26*** (0.096)	0.015*** (0.0024)
<b>Lost World War 2</b>		0.059 (0.17)		0.23*** (0.046)	0.019*** (0.0033)
<b>Population under 15</b>		-0.13* (0.070)		-0.045 (0.038)	
<b>Population over 65</b>		-0.12 (0.82)		-0.028 (0.27)	
<b>(log) Per Capita Income</b>			0.21 (0.15)	0.012 (0.11)	
<b>Net Contributor</b>			0.22*** (0.062)	0.24*** (0.057)	0.029*** (0.0038)
<b>Growth in per Capita Income</b>			0.0024 (0.029)	0.039 (0.029)	
<b>Coordinated Market Economies</b>			-0.37*** (0.089)	-0.35*** (0.057)	0.018*** (0.0033)
<b>Number of Observations</b>	15	15	15	15	14
<b>Log-Likelihood</b>	-3.44	-3.42	-3.41	-3.40	NA

Note: robust standard errors in parentheses. Standard controls: aged (% over 65), net budget contributor, core EU, coordinated market economy, growth in GDP, log-per capita income, and young (% under 16). \* Significant at the 10% level, \*\* significant at the 5% level, \*\*\*significant at the 1% level. OLS results are -0.0057 (0.037), -0.0079 (0.0044), -0.0038 (0.0030), -0.0041\*\* (0.0020) for Models (1), (2), (3), and (4) respectively.

Source: The Author

Furthermore, as Table 5.05 below indicates, there is also support for the negative hypothesis, namely that the national EDD/NEDD ratio cannot predict the standardized

level of rents at the EU level. Again, while this variable is very closely correlated with the raw proportion of citizens who consider the EU to be rent extracting (correlation coefficient 0.85), the fact that the results are the same as Table 5.02 suggests that the findings are robust to changes in the dependent variable specification, especially when this also controls for potentially unobserved omitted variables.

*Table 5.05: Perceptions of EU Rent Extraction and the National EDD/NEDD ratio*

	Standardized Ratio of Perceptions of Rent Extraction (% of Respondents who Agree that Corruption is a Problem)				
Institutional Level	EU/((National+EU+Local)/3)				
Model Specification	(1) (GLM)	(2) (GLM)	(3) (GLM)	(4) (GLM)	(5) (IRLS)
<b>National EDD/NEDD ratio</b>	0.081 (0.050)	0.098 (0.34)	0.049 (0.025)	0.055 (0.023)	-0.0030 (0.00018)
<b>Controls as in Table 5.04)</b>	√	√	√	√	√
<b>Number of Observations</b>	15	15	15	15	15
<b>Log-Likelihood</b>	-6.55	-6.48	-6.45	-6.40	NA

Note: robust standard errors in parentheses. Standard controls: aged (% over 65), net budget contributor, core EU, coordinated market economy, growth in GDP, log-per capita income, and young (% under 16). \* Significant at the 10% level, \*\* significant at the 5% level, \*\*\*significant at the 1% level. OLS results are -0.0074 (0.048), 0.0066 (0.0066), 0.0012 (0.0020), 0.0032 (0.0025) for Models (1), (2), (3), and (4) respectively.

Source: *The Author*

## 5.4 Conclusion

The aim of this Chapter has been to provide an alternative robustness check of the theoretical expectations of the model developed in Chapter 3, whose empirical implications were tested in Chapter 4. By focusing on voter rather than elite perceptions of rent extraction, the Chapter's results provide additional evidence that the theoretical

mechanisms that motivate the model are consistent with the empirical evidence.

Specifically, the Chapter examines the proposition that a higher EDD/NEDD ratio incentivizes electorally dependent and career concerned policy-makers to minimize their level of rent extraction, and voters to select higher competency incumbents. Exploiting the fact that EU policy-making imposes a common central policy-making structure on member states with very different national EDD/NEDD ratios (see Chapter 4), enables the implications of the model to be tested. If the model is correct, it follows that:

- 1) the national EDD/NEDD ratio should be able to predict voter perceptions of rent extraction at the national level (Positive Test);
- 2) the national EDD/NEDD ratio should not be able to predict voter perceptions of rent extraction at EU level (Negative Test);

The fact that these theoretically derived results remain robust even when utilizing rival geographical, historic and political economy explanations, as well as different versions of the dependent variable of interest, only serves to increase confidence in these findings. Still, it is important to stress the exploratory nature of this Chapter and the desirability of undertaking more sophisticated analysis as more data becomes available.

In short, despite limitations, the results of this Chapter provide a complementary robustness test for the model (Chapter 3) and the empirical analysis, which focused on the actions of public policy-makers (Chapter 4). This Chapter provides evidence that the EDD/NEDD ratio can predict not only perceptions of rent extraction amongst elites (most likely to be able to assess the overall level of rents in a high-income democracy) but also voters' perceptions of rent extraction. This is a critical finding, given that the model's

baseline assumption is that elections in high EDD/NEDD ratio contexts incentivize rent-minimization via the anticipated reaction of voters. Obviously, if voters are not using this contextual variable to update their beliefs about the average level of rent extraction of a given institution, it would have been difficult to argue that the model was robust.

## **6 The Nature of Electoral Competition, the EDD/NEDD Ratio and the Magnitude of Retrospective Evaluation**

To what extent does the nature of electoral competition incentivize career concerned and electorally accountable policy-makers (EDDs) to pursue a strategy of rent-minimization? In other words, do certain electoral contexts sharpen or diminish the incentives for EDDs to rent-minimize, in the hope of obtaining re-election? So far the empirical analysis has shown that the distribution of responsibility between EDDs and NEDDs can predict variation in perceptions of rent extraction amongst elites (Chapter 4) and voters (Chapter 5). However, as the theoretical model in Section 3.3 demonstrates, the rent-minimizing incentives that career concerned EDDs have, can be affected by the institutionally induced distribution of policy-making responsibility amongst EDDs (that is, independent of NEDDs). Therefore, in order to fully test the implications of the model it is critical to investigate whether electoral institutions, which shape the distribution of policy-making responsibility, affect the level of rent extraction in the manner anticipated by the theory.

Specifically, the theoretical model (Section 3.3) predicts that the more equal the distribution of policy-making responsibility amongst EDDs, the more difficult it becomes for individual EDDs (whether actual individuals or cohesive parties) to signal their competency to voters. This is because, in such situations, voters can only observe the average and not the individual competency of EDD policy-makers (a point first made by Duch and Stevenson, 2008). Anticipating that voters cannot deduce whether they are individually competent enough to obtain re-election, and therefore that voters are indifferent to either re-electing them or replacing them with a rival, incumbent EDDs lose

their incentive to rent-minimize in order to signal their individual competency. In other words, such policy-making environments – characterised by more equal policy-making distributions – have the unfortunate effect of generating classical ‘common pool problems’<sup>108</sup>, which in turn result in a ‘tragedy of the common’<sup>109</sup>. Individual EDDs pursue a policy of rent-maximization, at the expense of being able to signal to the electorate that, on average, the incumbent EDD policy-making coalition may be, collectively, of above average competency. In short, the model of Section 3.3 predicts that the greater the number of policy-domains ruled by conditions characterised by more equal policy-making responsibility, the fewer the incentives for policy-makers to pursue rent-minimization over a greater portion of their decision-making<sup>110</sup>.

In order to test this prediction of the model, and given the cross-sectional restrictions imposed by the dependent variables (see Chapters 1 and 2), it is essential to identify the specific institutional contexts that are more likely to engender more or less equal distribution of policy-making responsibility amongst EDDs, and to see whether, in turn, such institutional contexts are in fact associated with less perceived rent extraction. Fortunately, the economic voting and political economy literature provides very clear, if not entirely uncontested, guidance on which electoral institutions are more likely to enhance the likelihood of more unequal distributions of policy-making responsibility, and hence a greater ability of career concerned incumbents to signal their competency via

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<sup>108</sup> As noted in Chapter 3 common pool problems are situations in which individual members of a team lose an incentive to contribute to a provision of a public good. In this case, individual EDDs lose the incentive to rent-minimize, in order to signal higher competency, and thus ensure that all incumbent EDDs are unable to signal their average competency (common good) as they all pursue a rent-maximizing agenda.

<sup>109</sup> As noted in Chapter 3 a ‘tragedy of the Commons’ is a situation in which individual actors have an incentive to over-exploit a common good. In this case, because individual EDDs have an incentive to rent-maximize, the possibility that incumbent EDDs, who may on average be of higher competency, to obtain collective re-election via collective rent-minimization is not a feasible strategy.

<sup>110</sup> Recall that the model assumes that voters can credibly recommit to re-electing only high competency incumbents, who rent-minimize in all dimensions in which their individual competency can be deduced.

rent-minimization (hereafter an outcome referred to as the efficacy of elections:  $EoE^{111}$ ).

Specifically, the literature suggests that (1) plurality electoral systems (associated with a reduction in the number of political parties and hence an increase in the distinction between the governing majority and the opposition); and (2) parliamentary forms of government (which increase majority party and or coalition cohesion and eliminate the possibility of divided governments emerging), are associated with more unequal distributions of policy-making responsibility. Therefore, it follows that if the theoretical model is correct, a country with a greater number of these institutional attributes should exhibit lower levels of perceived rent extraction, at least amongst senior policy-makers.

In addition, the examination of the role of institutions in shaping the incentives of policy-makers provides an opportunity to revisit the components of the EDD/NEDD ratio. This is because while the antecedent literature has traced the role of institutions to shaping the distribution of policy-making responsibility (beginning with Powell and Whitten, 1993) there are also good reasons to believe that certain aspects of these institutions may also shape the EDD/NEDD ratio itself. In particular, as Persson and Tabellini (2001, pp. 226-230), have formally shown, that certain elements of the electoral system may make some nominally elected officials partly insulated from the electoral consequences of their actions. Specifically, the authors (*ibid*) show that in closed list proportional electoral systems, as opposed to open list and plurality electoral systems, some incumbents (those at the top and bottom of the list) may face reduced pressure to rent minimize as their actions only play a limited role in their re-election prospects, which are also shaped by the actions of other candidates on the list. Therefore, augmenting the

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<sup>111</sup> This label conveys the fact that more unequal distributions of responsibility engender greater incentives for career concerned rent minimization; t. That is, the efficiency of elections in delivering lower equilibrium rents.

original EDD/NEDD ratio (hereafter the baseline EDD/NEDD ratio) to take into account how the existence of individual accountability (open list proportional and plurality electoral systems) affects the EDD/NEDD ratio directly, is also an objective of this Chapter (hereafter the Chapter distinguishes between the ‘EDD/NEDD’ ratio whose components are the same as in Chapter 4 –inverse of the size of government, regulatory quality and non-EU membership- and the ‘extended EDD/NEDD ratio’- which includes a measure of individual accountability).

Finally, in addition to directly testing the implications of the model not addressed in previous chapters, the investigation that follows also provides the opportunity for some complementary empirical robustness tests of the theory. Specifically, by examining how variation in the institutionally induced nature of electoral competition conditions the ability of the model to predict outcomes, the Chapter also makes use of:

- (1) **A more homogenous sample of countries**, as by adopting a more disaggregate focus – the nature of electoral competition within high-income democracies – the Chapter allows for a more nuanced empirical analysis of how elections may condition the incentives faced by EDDs. Specifically, while the evidence in Chapter 4 is consistent with the model’s assumption that the EDD/NEDD ratio reduces rent extraction only in democratic contexts (the identification strategy of that Chapter) the separation of countries into different regime types (high-income democracies, all democracies, non-democracies) is highly aggregate in nature and may be correlated with a number of other factors that may also affect rent extraction and the EDD/NEDD ratio. Therefore, by focusing on the impact of variation of electoral competition within the more homogenous high-income and

democracy sub-groups, it may be possible to control some of these unobserved omitted variables. Of course, it is important to recall that the smaller number of observations means that fewer controls can be used (the same dilemma as in Chapter 5). However, in conjunction with the results from the larger datasets used in Chapter 3, being able to show that the predictions of the model hold in both (a) a more heterogeneous set of countries with more explicit controls, and (b) a more homogenous group of countries with fewer explicit controls, increases confidence in the main results.

(2) **Higher Order Interaction.** While the main focus of this project has been to link the nature of policy-making (EDD/NEDD ratio) to variation in rent extraction within a high-income democracy context, much of the traditional economic voting literature has been more explicitly focused on how different institutions (form of government and electoral systems) within a high-income democracy context condition the economic vote (EoE) (see Chapter 1). By explicitly examining how the interaction of these two sets of factors (EoE and the EDD/NEDD ratio) jointly affect the incentives for rent extraction, the Chapter examines how robust the findings of the previous chapters are when taking into account the importance of institutional variables not previously examined. This therefore brings the insights of another part of the literature to bear on the empirical analysis.

The agenda of this Chapter is realized as follows: the next section, Section 6.1, provides a review of the literature linking specific institutions to (1) the distribution of policy-making responsibility to the ability of voters to deduce incumbent competency

(magnitude of voter evaluation) and (2) electoral systems that engender individual accountability to the EDD/NEDD ratio itself. This process thereby provides a clear link between the independent variables of interest (institutions that affect the nature of electoral competition), and the theory from Chapter 3. In short, the section provides the theoretical justification for constructing the independent variable of interest – an additive measure of the efficacy of elections and the extension of the EDD/NEDD ratio itself. The second section, Section 6.2, develops a model specification strategy in order to operationalize and test the relationship between (1) the EoE and (2) the multiplicative effect of the EoE and the EDD/NEDD ratio (modelled as either the baseline or the extended version) on the level of rent extraction. Section 6.3 directly tests the implications of the model, using this research strategy, and thereby establishes whether the EoE and the multiplicative effect of the EoE and the EDD/NEDD ratio can predict variation in rent extraction, as the model would expect. Section 6.4 concludes by critically reviewing the findings, which suggests that both the EoE and the interaction term between the EoE and the EDD/NEDD ratio can predict variation in rent extraction amongst high-income democracies. These findings, therefore, are broadly consistent with the theoretical expectations of the model, and serve as an additional validation check of its efficiency.

### **6.1 The Link between Electoral Institutions, Electoral Competition, the Magnitude of Voter Evaluation and the EDD/NEDD Ratio**

Theoretically identifying which institutions are most likely to engender a more unequal distribution for policy-making responsibility, and hence minimize the risks of common

pool problems emerging (higher EoE), is the essential first step in operationalizing and testing the theoretical model. This section is therefore concerned with identifying the links between theory, institutions, and the EoE. Specifically, after briefly reviewing the formally derived results from Section 3.3, this section examines which institutions (plurality electoral systems and parliamentary form of government) are associated with more unequal distributions of policy-making responsibility in practice, and thereby explicitly linking theory to identifiable institutional attributes, in preparation for empirical hypothesis testing. Of course given that electoral institutions may also directly shape the EDD/NEDD ratio, it is important to identify which aspects of electoral institutions may determine the EDD/NEDD ratio itself, and therefore allow for the development of an identification strategy that allows the different effects of electoral institutions – namely, distribution of policy-making responsibility between EDDs and NEDDs – as well as the shaping of the EDD/NEDD ratio itself to be identified, effectively operationalized and tested.

### **6.1.1 Electoral Institutions and the Nature of Electoral Competition**

Recall from Section 3.3 that the nature of decision-making faced by any individual EDD, and how this affects their incentives to engage in more or less rent extraction, can be conveyed by the following expression:

$$r_{il} = \gamma(\bar{\tau}y - \chi\delta(R + \bar{\tau}y)) + (1 - \gamma)\bar{\tau}y \quad (6.01)$$

Where  $\gamma$  is the proportion of all decisions made in decision-making contexts in which voters can deduce the individual competency of EDDs and  $(1 - \gamma)$  reflects the proportion of decisions made by EDDs in a context of equal policy-making responsibility. If voters

can credibly commit to re-electing incumbents who rent-minimize over all areas of policy for which the incumbent's individual competency can be inferred, expression (6.01) predicts that as the number of decisions governed by more unequal policy-making contexts increases, so does the propensity for career concerned rent-minimization (see Section 3.3). Conversely, as the number of decisions made in more equal policy-making processes increases, the magnitude of rents also increases, as incumbents know that rent-maximization in such policy domains will not affect their re-election prospects.

What are the determinants of  $\gamma$ ? A large literature suggests that the institutions that govern elections affect the likelihood that any given decision will be undertaken in contexts of more equal/unequal making. This can be formally incorporated into the framework above as follows:

$$r_{it} = \gamma(EoE)(\bar{\tau}y - \chi\delta(R + \bar{\tau}y)) + (1 - \gamma(EoE))\bar{\tau}y \quad (6.02)$$

Where EoE is the institutionally induced efficacy of elections, which determines the distribution of decision-making between less, or more, equal *modus operandi*. Of course, in order to make this expression operational, it is essential to identify which specific electoral institutions are likely to induce greater or less electoral efficacy.

The link between specific electoral institutions and the nature of electoral competition (the likelihood of more/less equal distributions of policy-making responsibility) has been a well documented, if somewhat contested, research field in both comparative politics and political economy (Persson and Tabellini, 2003, pp. 1-7). Generally, two institutions have featured most prominently in such analyses: the electoral

system in place and the form of government<sup>112</sup>. A great deal of theoretical and empirical work has thus sought to map how these institutions affect the nature of electoral competition in theory and practice.

Within the large corpus of work on economic voting, there is now a relatively clear consensus on what types of electoral competition, and hence the institutions that determine such competition, are likely to engender a greater retrospective vote. As Lewis-Beck and Paldman (2000, p.115) note, *empirically*, the ideal electoral conditions for retrospective evaluations, in which voters can deduce individual competency, are ones in which a two party system exists, with one party in power and the other in opposition and therefore, there is an absence of shifting coalitions.

From this summary of the consensus in the economic voting literature, it is possible to deduce that the EoE will increase in a country that has: (1) a plurality electoral system (reduced number of parties and hence a clear distinction between the ruling party and the opposition), and (2) a parliamentary form of government (increased party cohesion; fewer shifting coalitions), as will now be explained in more detail.

#### ***6.1.1.1 The Magnitude of Retrospective Evaluation I: Distribution of Policy-Making Responsibility and Electoral Systems***

How do different electoral systems affect the distribution of policy-making responsibility and hence the efficacy of elections? As Duch and Stevenson (2008) have shown formally, the competency signal of an incumbent government/legislative majority is diminished, as

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<sup>112</sup> While other institutions, such as bicameralism and federalism, may also affect the nature of elections (see Lijphart, 1998), these are the two institutions most widely studied in both the comparative politics and especially the political economy literature (especially Persson and Tabellini, 2003) on which this chapter extends.

the number of parties/legislators involved in policy-making increases with the magnitude of the economic vote, and the number is at its highest when voters face a cohesive majority that is clearly distinguished from the opposition. Linking this empirical finding to the formal argument in Section 3.3 is not difficult. Intuitively, if there is a clear distinction between those legislators who make policy and those who do not, then policy-making responsibility is unequally distributed and it is possible to deduce the legislative majority's competency over a large number of policy issues. Conversely, as the distinction between governing and opposition diminishes – as more parties/legislators make policy – the ability to distinguish the responsibility of one party/legislator from another diminishes.

Plurality electoral systems have long been associated with a reduced number of parties. According to Duverger (1951), plurality electoral systems foster two party competitions, since: (1) weaker parties fuse in order to have a chance of supporting the winning candidate, and (2) voters strategically abandon weak candidates in order to vote for a candidate who has a chance of winning the seat. While Duverger's law is not without its critics (see for example Dunleavy et al, 2008), it retains considerable support (strong correlation between a plurality electoral system and a reduction in the number of parties; see Riker, 1982; Hindmoor, 2006) and has been used as a basis for modelling how electoral competition may influence outcomes (level of distribution) (see for example Iversen and Soskice, 2011). The empirical implication of all these logically derived arguments is that a plurality electoral system should enable voters to more effectively determine the competency of an incumbent government/legislative majority (due to the provision of constituency services), as well as that of political parties (due to

the clearer distinction between the government and the opposition).

Formally, the expected EoE will be higher over time, given the existence of a plurality electoral system versus a proportional alternative. Thus, the level of expected rents should be lower. That is:

$$RENT(EoE \mid plur) < RENT(EoE \mid prop) \tag{6.03}$$

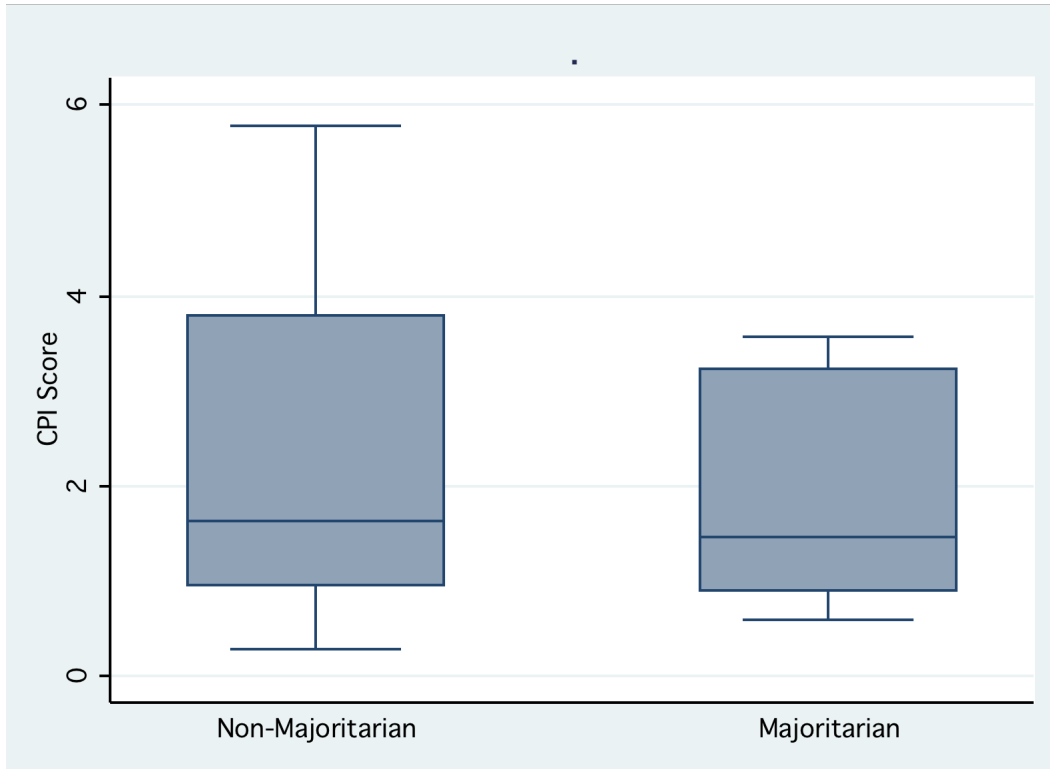
where  $ENT(EoE \mid plur)$  denotes the average level of rents, given the expected probability of a more unequal distribution of policy-making responsibility (EoE), generated by a plurality or majoritarian electoral system (plur).  $RENT(EoE \mid prop)$  denotes the level of rents, given the EoE association with a non-plurality or non-majoritarian electoral system<sup>113</sup>.

As Diagram 6.01 indicates, using a dummy variable to denote countries with a plurality electoral system (source: Persson and Tabellini, 2003), the average high-income democracy with a plurality electoral system has a slightly lower (inverted) CPI score (1.15) versus the average high-income democracy with a proportional electoral system (2.26). However, there is significant overlap between the scores of the two sets of countries and hence no statistically significant difference. Despite this, given the bivariate nature of the results and the fact that the difference in outcomes (level of perceived rent extraction) is in the anticipated direction, this finding provides a basis for further investigation of the theoretical expectations of the model.

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<sup>113</sup> This category includes both purely proportional and mixed electoral systems.

*Diagram 6.01: Rents and Electoral Systems*



Non-majoritarian (plurality) = Austria, Belgium, Denmark, Finland, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Norway, Portugal, Sweden, Switzerland. Majoritarian = Australia, Canada, France, Japan, New Zealand, USA and the UK

Source: *The Author*

### ***6.1.1.2 The Magnitude of Retrospective Evaluation II: The Distribution of Administrative Responsibility and Form of Government***

The form of government, by conditioning the nature of interaction between the executive and the legislature, has a direct effect on the distribution of policy-making responsibility (magnitude of retrospective voting). As parliamentary forms of government are characterized by a fused executive-legislative enacting majority, sustained by a legislative majority (a vote of confidence), this engenders cohesion amongst the government and

therefore a more unequal distribution of policy-making responsibility between government policy-makers (party leadership) and the opposition. Conversely, presidential forms of government are characterized by a division of power between the executive and the legislature that is likely to engender a more equal distribution of responsibility, as decision-making has to be made jointly by both branches of government. Duch and Stevenson (2008, pp. 253-261) note that there is a link between the form of government and the magnitude of retrospective voter evaluation, which may drive career concerned incumbents to rent-minimize (see Section 3.3):

*“...Because of the fusion of legislative and executive powers in parliamentary systems and their institutional separation in presidential systems, the level of administrative responsibility of the typical prime minister is likely to be greater than that of the typical.”*

Thus, because sustaining the executive requires a cohesive majority under a parliamentary form of government, a clear distinction emerges between the actions of the cohesive governing coalition (especially the leadership of such a coalition) and the opposition. Such an outcome, in turn, generates a more unequal distribution of responsibility and hence a greater ability of voters to retrospectively evaluate whether this enacting majority has achieved the critical threshold required for its re-election.

Conversely, in presidential systems, the possibility of ‘divided government’, in which the executive and the legislature are controlled by different parties, is a distinct possibility. As such an outcome ensures that policy-making responsibility is more evenly divided across the number of rival parties, it increases the likelihood of a common pool problems arising. In fact there is now a significant amount of empirical evidence linking divided government in presidential systems to a reduced magnitude of retrospective

evaluation in general (Elgie, 1999; Hellwig and Samuels 2008), and to a more equal distribution of policy-making responsibility and a lower EoE (Duch and Stevenson, 2008).

Of course, it is important to note that while a parliamentary form of government increases the likelihood that voters will be able to evaluate the overall performance of the party/parties in power, this does not automatically result in increased incentives for rent-minimization at the individual level. This is because cohesive parties may either generate free-rider problems (whereby a subset of policy-makers may seek to free-ride on the efforts of their colleagues), or enable the party leadership to engage in rent extraction. However, while such concerns may be an issue, they are unlikely to be dominant, at least in high-income democracy contexts in which party institutions and mechanisms for oversight and control (de-selection, disciplining mechanisms) are well established. Furthermore, if party cohesion is coupled with the ability to hold individual incumbents to account (for engaging in some forms of rent extraction), then it may be possible for voters to hold cohesive party/parties to account, but also to punish deviating individual incumbents whose rent-maximization can be detected and who can individually be removed from office without punishing the rest of the party.<sup>114</sup>

Thus, from the perspective of the career concerns modelling approach, therefore, a parliamentary form of government should increase the likelihood of a more unequal distribution of responsibility, which should in turn diminish incentives for rent extraction.

That is:

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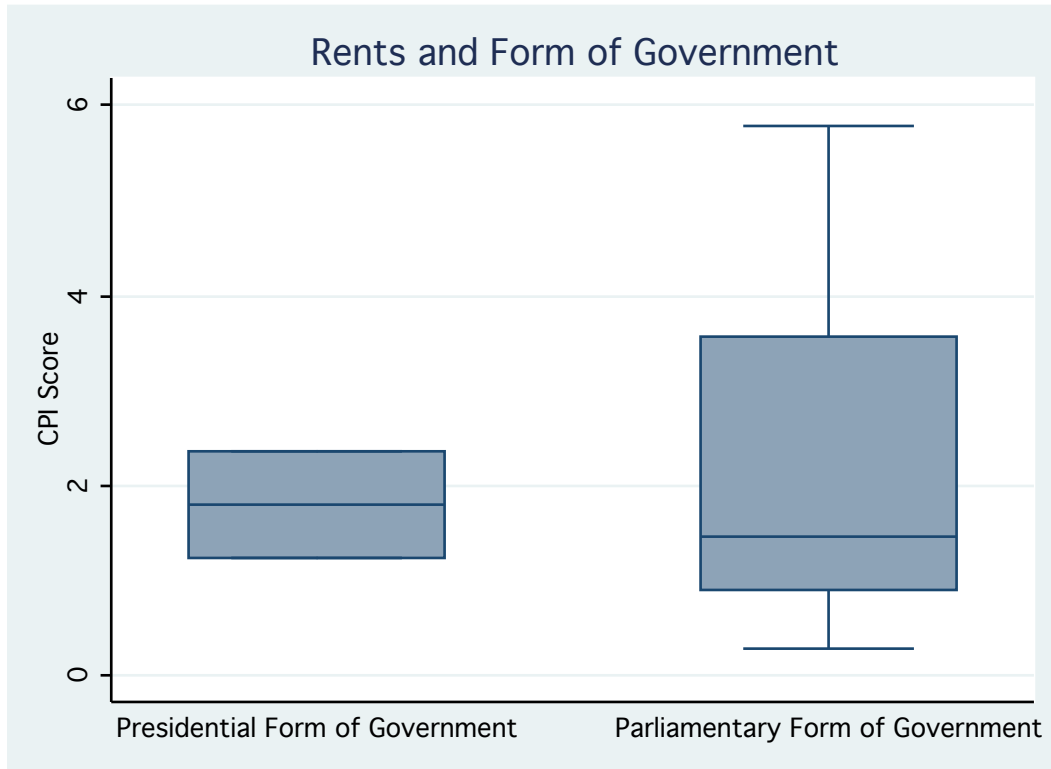
<sup>114</sup> For example, in the UK, strong party cohesion and the existence of an individual mandate allows voters to target individual incumbents whose actions may deviate from party policy. Thus, for example, the swing against Neil Hamilton, an MP implicated in the 'cash for questions' and other corruption scandals, allowed voters in his constituency to punish him individually, while not affecting the re-election prospects of other members of his party.

$$RENT(EoE \mid pa) < RENT(EoE \mid pr) \tag{6.04}$$

where  $RENT(EoE \mid pa)$  denotes the level of rents generated by the EoE given a parliamentary system, and  $RENT(EoE \mid pr)$  denotes the likelihood of a more unequal distribution of administrative responsibility in a typical presidential system.

As Diagram 6.02 indicates, using a dummy variable to distinguish countries with a parliamentary form of government (source: Persson and Tabellini, 2003), the average high-income democracy with a parliamentary form of government has a lower (inverted) CPI score (2.1) vis-à-vis presidential and semi-presidential systems (2.7). However, as before, the difference is not statistically significant and additional caution has to be exercised as the number of semi-presidential and presidential countries in the sample is small (France and the USA). The robustness of these results thus needs to be confirmed in a multivariate setting and using a larger sample of all democracies (increasing the number of non-parliamentary observations; see Section 6.3).

Diagram 6.02: Rents and Form of Government



Presidential and semi-Presidential = France, USA. Parliamentary = Australia, Belgium, Canada, Denmark, Finland, Germany, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Sweden, Switzerland and the UK.

Source: *The Author*

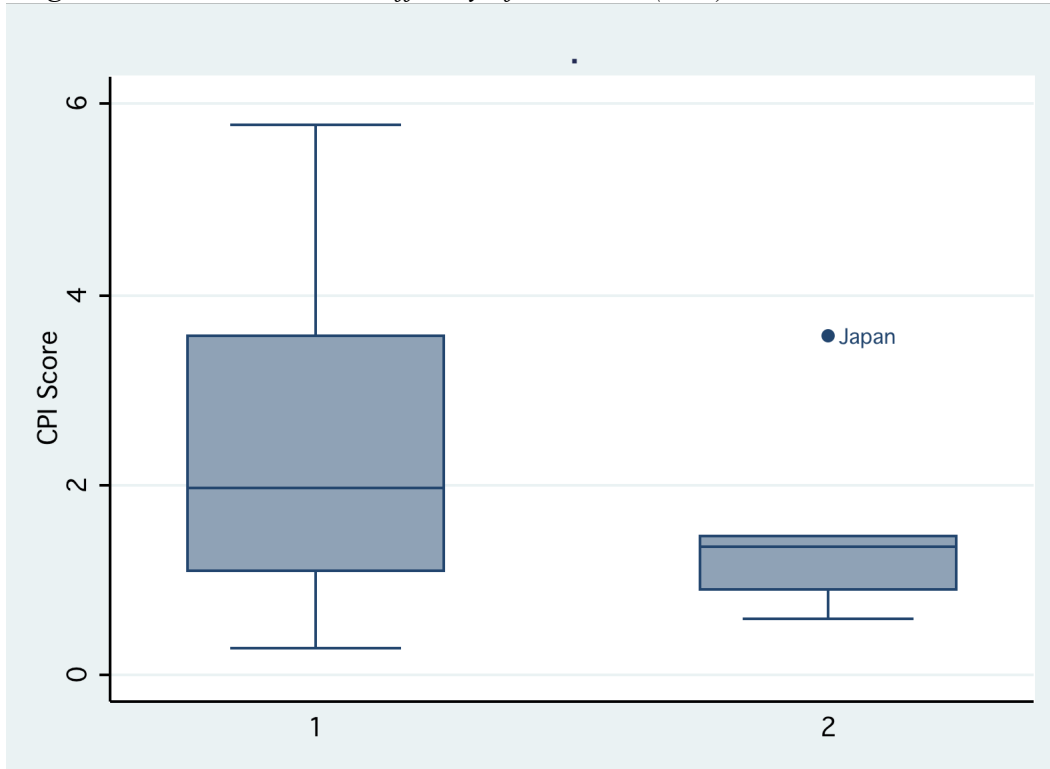
Of course, the theoretical and empirical literature anticipates that having both a majoritarian and a parliamentary form of government increase the likelihood of less rent extraction, as both factors independently increase the likelihood of a more unequal distribution of policy-making responsibility. It is relatively simple to combine both these dummy variables, denoting these factors into a signal indicator of the Efficacy of Elections (EoE) :

$$EoE_i = plur_i + pa_i \tag{6.05}$$

where  $EoE_i$  is country  $i$ 's score on the EoE index,  $plur$  is a dummy variable which takes the value of one if a country has a plurality electoral system, and  $pa$  is a dummy variable which takes the value of one if a country has a parliamentary form of government. Thus, the EoE is ordinal in nature, and can range from 0 (countries with proportional electoral systems and a non-parliamentary forms of government) to 2 (countries with both a plurality electoral system and a parliamentary form of government).

As Diagram 6.03 indicates, countries with both types of institutions, with the exception of Japan, have a lower CPI score (1.17) versus countries with only one such institution (average score of 1.66). Again, while the results are not statistically indistinguishable, they are stronger than for each of the individual institutions. This suggests that examining the interaction between institutionally induced EoE and the EDD/NEDD ratio is a logical next step in investigating the predictive capacity of the model.

Diagram 6.03: Rents and the Efficacy of Elections (EoE)



Excludes Switzerland (included in all subsequent regression analysis).

Source: The Author

### 6.1.2 Electoral Institutions and The EDD/NEDD Ratio

As already noted above, Persson and Tabellini (2001, pp.230-233) have already formally shown how an individual mandate, as generated by a plurality or open list electoral system, can limit rent extraction because individual incumbents cannot rely on the

activities of others to obtain re-election. Their formalization is repeated here for convenience in order to clearly facilitate the subsequent empirical analysis<sup>115</sup>.

For simplicity, and in order to isolate the effect of the existence of an individual mandate (which directly effects the EDD/NEDD ratio) from the effect of how electoral institutions shape the nature of policy-making responsibility amongst EDDs, the formal set-up below assumes that however candidates are elected (plurality or proportional representation) they are responsible for generating distinct public goods (assuming the existence of unequal policy-making responsibility). This allows the independent effect of individual accountability to be isolated. This is critical because, following standard convention, the subsequent operationalization and testing of these implications will use different variables to control for the effect of electoral systems on the distribution of policy-making responsibility amongst EDDs (dummy variable for a plurality electoral system) and the way in which the electoral system may alter the EDD/NEDD ratio itself (a fractional variable, ranging from 0-1 which captures the proportion of legislators who are elected via either an open list proportional system or a plurality electoral system).

Formally, given the set-up of the generic career concerns model (see Section 3.1), assume first a plurality or open list proportional electoral system<sup>116</sup> in which a polity's territory is divided into three constituencies ( $J=1,2,3$ ). Policy-making is centralized, but each incumbent (elected either in a constituency – plurality – or designated to a constituency after an election – open list proportional) is elected or assigned to a locality

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<sup>115</sup> This section is based on Persson and Tabellini's (2001, p.230-233) formalization of the model. Permission to reproduce an adapted version of this model was obtained from the MIT University Press (16/07/2012).

<sup>116</sup> It is not difficult to show that an open list proportional electoral system in which incumbents could be individually rewarded/punished for their actions would behave in a similar way to a plurality system (Persson and Tabellini, 2000, pp. pp. 234-36). However, the absence of a constituency link, and hence the need to provide locally financed goods, may make it less likely that voters can determine the individual, rather than the average competency of incumbents (see next sub-section).

in which she is responsible for providing local public goods and/or engaging in rent extraction of local resources (see Persson and Tabellini 2001). All re-elected incumbents get to perform the same action in the second period and all policy-makers are assumed to act simultaneously. Given the ability of voters to directly re-elect individual incumbents (via a constituency or open list system), as long as the distribution of policy-making responsibility is not perfectly equal, the behavior of elected officials is the same as that in the generic career-concern model (Section 3.1) and electorally accountable policy-makers (EDDs) in the Section 3.2. That is, equilibrium rents in each locality are given by (3.04), and total rents  $r = \sum_j r_j^j$  under a plurality electoral system are, thus:

$$r = 3\bar{\tau} - 3\xi\delta(R + \bar{r})$$

(6.06)

In contrast, in a closed list proportional system, all three incumbents run for office in a single constituency encompassing all three localities, although once elected they are responsible for generating goods and services in an individual locality (instead of localities it would also be possible for incumbents to be responsible for different national policy areas). Assuming that all three incumbents belong to the same party and that the order of each candidate in the party list coincides with the number of her constituency. Voters can either vote for the incumbent party's list or for a list presented by the opposition party. The number of incumbents is purely proportional to a party's share of the vote. As before, opposition candidates have an (individual) expected competency of

1. The voter's behavior is therefore simple to model. Voters in a given locality J vote for the incumbent party's list to remain in office in the second period, if the incumbent setting policy in J in the first period was perceived as being of average or above average competency. That is, her inferred competency  $\tilde{\eta}^j$  satisfies. The incumbent's behavior in the first period is conditional on their expected probability of satisfying voters,  $p_j \equiv [\tilde{\eta}^j \geq 1]$ , which can be defined as:

$$p_j = \text{Prob}[\tilde{\eta}^j \geq 1] = \frac{1}{2} + \xi \left[ 1 - \frac{\bar{\tau} - \tilde{r}_1^j}{\bar{\tau} - r_1^j} \right] \quad (6.07)$$

Let  $\hat{p}_j$  be the expected probability of reappointment, which is conditional on the order of J in the list of her party candidates. Given this assumption that order in the list coincides with the value of J,  $\hat{p}_j$  can be written as follows:

$$\hat{p}_1 = p_1[(1 - p_2)(1 - p_3)] + [p_2p_3 + p_3(1 - p_2) + p_2(1 - p_3)] = p_1 \frac{1}{4} + \frac{3}{4}$$

$$\hat{p}_2 = p_2[p_1(1 - p_3)] + p_3(1 - p_1) + p_2p_3 = p_2 \frac{1}{2} + \frac{1}{4}$$

$$\hat{p}_3 = p_3p_2p_1 = p_3 \frac{1}{4}$$

(6.08)

The last term of each expression follows from the fact that in equilibrium each incumbent has a 50 per cent chance of satisfying her voters, that is  $p_1 = \frac{1}{2}$ . Consider the incentives of the candidate at the top of the list. With probability  $\frac{1}{4}$  her own performance will determine her re-election, but with probability  $\frac{3}{4}$  she will be re-appointed regardless of her performance (as long as at least one other candidate is competent). Conversely, the incumbent candidate at the end of the list,  $J=3$ , has the lowest probability of being reappointed due to her performance ( $\frac{1}{4}$ ) as she is elected only if the other two candidates are of average or higher competence. The second candidate has the most incentive, relatively speaking, to try and seek reappointment, due to her own efforts as, unlike the first and third incumbent, her re-election is the least likely to be influenced by the others' performance. However, the probability of her individual actions being pivotal is still only  $\frac{1}{2}$ , and therefore lower than under a plurality electoral system.

Given (6.09) it is possible to compare the overall equilibrium level of rents in plurality and proportional systems. Total rents  $-r_j = \sum_j r^j$  - in a closed list proportional systems are:

$$r = 3\bar{\tau} - \xi\delta(R + \bar{r})$$

(6.09)

As (6.09) is greater than (6.06), this suggests that the incentive for candidates to be career concerned is more limited under a closed list proportional system vis-à-vis a

plurality system, as the utility of pursuing a rent-maximizing strategy and being re-elected based on the performance of other candidates is greater.

## **6.2 Incorporating the Role of Electorally Induced Accountability into the Baseline EDD/NEDD Ratio**

The formalization above suggests that the electoral system, via its effect on individual policy-makers' incentives which may result in some nominally elected officials being partly insulated from facing the full consequences of their actions at election time, may shape the EDD/NEDD ratio. This might appear to suggest that the simplest way to incorporate this effect of electoral institutions on the EDD/NEDD ratio would be to add the dummy variable denoting whether a country has a plurality electoral system to the existing EDD/NEDD ratio (see Chapter 4). It would then be possible to test the effect of the EDD/NEDD ratio and the consequences of a more unequal distribution of policy-making responsibility by interacting this EDD/NEDD ratio with the form of government dummy variable. However, such an approach would be problematic because, while a plurality system does ensure both individual accountability as well as a more unequal distribution of responsibility, it is not the only type of electoral system that promotes individual accountability. While there is no evidence that open list proportional systems affect, in a manner that is different from closed list systems, the number of parties and hence the distribution of policy-making responsibility, they do promote individual accountability (as formally demonstrated above). As such, even if such an electoral system doesn't change the nature of policy-making amongst EDDs, such an institution may change the ratio of EDD/NEDDs. It is therefore necessary to identify a variable that captures the effect of all electoral systems that shape the EDD/NEDD ratio, distinct from

the distribution of policy-making responsibility, which promotes individual accountability.

Fortunately, because many authors have already analyzed the multiple effects of different electoral systems, such a variable exists in the Persson and Tabellini (2003) dataset. It has been used extensively in conjunction with both the plurality dummy and the form of government dummies, to identify the independent effect of an individual mandate, as distinct from the effect of a plurality *versus* proportional systems (ibid, Persson et al 2003). Specifically the ‘Pindo’ variable in Persson and Tabellini’s dataset takes a value of zero if a country has a closed list proportional electoral system (e.g. Portugal), a value of one if a country has either a plurality (e.g. the UK) or fully open list (e.g. Ireland) electoral system, and intermediate values between zero and one if only a proportion of seats are allocated in an open list and/or plurality electoral system (e.g. Germany).

Using this variable as a measure of electorally induced individual system electoral accountability (effect on the EDD/NEDD ratio) has the advantages that (1) it captures how electoral institutions affect the EDD/NEDD ratio (accountability effect), but (2) still allows the independent role of electoral institutions to be incorporated into the EoE (does not preclude the inclusion of the plurality dummy variable)<sup>117</sup>. Thus the EDD/NEDD ratio expression (4.07) becomes:

$$\frac{\alpha}{\beta}(\text{extensiveness}) = \sum [\text{fiscal} + \text{regulatory} + \text{coordinated} + \text{individual}]$$

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<sup>117</sup> It is important to note that the two variables are very regularly used in regression analysis together (Persson and Tabellini, 2003; Persson et al, 2003). Furthermore, while the Pindo variable takes the value of one for all plurality systems, it is not highly correlated with the dummy variable capturing electoral systems (plurality vs. proportional):- 0.55 in the Persson and Tabellini dataset. Once the two variables are incorporated into the respective indicators – the EDD/NEDD and the EoE respectively, – their correlations become even weaker.

(6.11)

Where *individual* is the pindo variable (0-1) and, as before fiscal, regulatory, and coordination are the standardized (0-1) variables that compose the baseline EDD/NEDD ratio (see Chapter 4). This ‘Extended EDD/NEDD ratio’ can then be interacted with the EoE (the same as above) to develop an alternative multiplicative specification.

What role does individual accountability play in reducing rent extraction? As Table 6.01 below indicates, the bivariate results are not encouraging, as while the rent extraction scores for countries with/without individual accountability are not statistically distinguishable, countries with a closed list system appear to have lower levels of perceived rent extraction (at least in the OECD subset). However, as always, such bivarite results may be affected by omitted variable bias, and as the results in Section 6.3 will show, the Extended EDD/NEDD ratio which incorporates individual accountability is a more robust predictor of rent extraction vis-à-vis the baseline EDD/NEDD ratio.

*Table 6.01: Individual Accountability and Rents (High-income Democracies)*

	No Individual Accountability	Individual Accountability
<b>CPI Score</b>	1.76 (1.66) (n=15)	2.38 (1.41) (n=8)

No Individual Accountability: Austria, Belgium, Denmark, Iceland, the Netherlands, Norway, Portugal, and Sweden.

Individual Accountability: Australia, Canada, Finland, France, Germany, Greece, Ireland, Italy, Japan, Luxembourg, New Zealand, Spain, Switzerland, USA, UK .

Source: Persson and Tabellini, 2003

### **6.2.1 The EoE and the EDD/NEDD Ratio**

As the theoretical model in Section 3.2 and 3.3 suggests, both the EDD/NEDD ratio and the efficacy of elections exert an independent effect on the incentives that career concerned EDDs have, in pursuing a rent-minimizing strategy to obtain re-election. Furthermore, the baseline measure of the EDD/NEDD ratio can be augmented to take into account the effect of electoral accountability. Therefore, if the arguments proposed are correct, in reality, EDDs make decisions based both on their (1) responsibilities vis-à-vis NEDDs (potentially expanded to include electorally quasi-insulated politicians), and (2) the distribution of responsibility amongst EDDs. Given that both of these factors exist at the same time, it is not unreasonable to assume that they interact with each other, thereby generating the actual incentives faced by public policy-makers, in their entirety, to rent-minimize in order to obtain re-election.

Broadly, as Table 6.02 indicates, there are four distinct contexts in which policy-makers find themselves, that can be used to predict the level of rents in a polity. Specifically, rents will be lowest if there is both a high EDD/NEDD ratio and a very unequal distribution of policy-making responsibility (high EoE). As either the EDD/NEDD ratio or the EoE decline, the incentives for rent-minimization diminish, since either (1) vested policy-makers make decisions, or (2) elected EDDs have no incentive to rent-minimize because their individual contribution cannot be inferred. Obviously, career concerned rent minimization is least likely in contexts in which both the EDD/NEDD ratio is low and the EoE is low.

*Table 6.02: Policy-Making Context, Electoral Institutions and Rents*

Institution	High EoE	Low EoE
High EDD/NEDD Ratio	Low Rents	Intermediate Rents
Low EDD/NEDD Ratio	Intermediate Rents	High Rents

Source: The Author

Both the EDD/NEDD ratio (extended or baseline form) and the EoE have been designed so that it is possible to explore the relationship between the two indicators and the level of rent-extraction. Each component on the two indicators ranges from 0-1 and higher values on both indicators denote, at least if the theoretical framework is correct, incentives for rent minimization.

As Table 6.03 below indicates, the EDD/NEDD ratio (Baseline and Extended version) as well as the EoE are all negative predictors of more rent extraction (as would be expected) although the correlations between them and the CPI are not very strong. As would be expected the two versions of the EDD/NEDD ratio are very strongly correlated, given that 75% of the extended EDD/NEDD ratio score is the same as the Baseline EDD/NEDD ratio score. Both versions of the EDD/NEDD ratio are moderately (0.47 and 0.52) correlated with the EoE. This suggests that high-income democracies with a higher EDD/NEDD ratio are more likely to also have a higher EoE, although this association is not very strong.

Table 6.03: Correlation Matrix Between the EDD/NEDD Ratio and the EoE

	CPI	EDDD/NEDD Ratio (Baseline)	EDD/NEDD Ratio (Extended)
EDD/NEDD Baseline	-0.37		
EDD/NEDD Extensive	-0.31	0.83	

EoE	-0.20	0.47	0.52
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*Source: The Author*

In order to test the implications formalized in Section 3.4 and summarized above, it is necessary to develop an indicator that captures the interaction effect between the EDD/NEDD ratio (Baseline or Extended) and the EoE. Given the fact that separate indicators for the EDD/NEDD ratio (Chapter 4 and above) and the EoE (expression 6.05) exist, it is not difficult to develop a multiplicative indicator of the overall incentives faced by elected officials for career concerned rent minimization (hereafter, ‘multiplicative indicator’).

Specifically, in order to construct the index: (1) the three (four) variables that make up the baseline (Extended) EDD/NEDD ratio (inverse of government expenditure as a % of GDP, inverse of regulatory density, and the non-EU dummy and individual accountability) are combined (as in Chapter 4) and multiplied for each country by (2) the EoE (which combines the electoral system and form of government dummy variables). In order to ensure that one or more sub-component variable does not skew the results because of its scale, the two interval indicators – the inverse of government expenditure and regulatory density – were converted into fractional scores (ranging from 0-1), giving them the same weighting as the other three dummy variables (restricted to either a value of 0 or 1).

$$\text{Multiplicative} = (\text{fiscal} + \text{regulatory} + \text{coordinated}) * (\text{plurality} + \text{form}) \tag{6.12a}$$

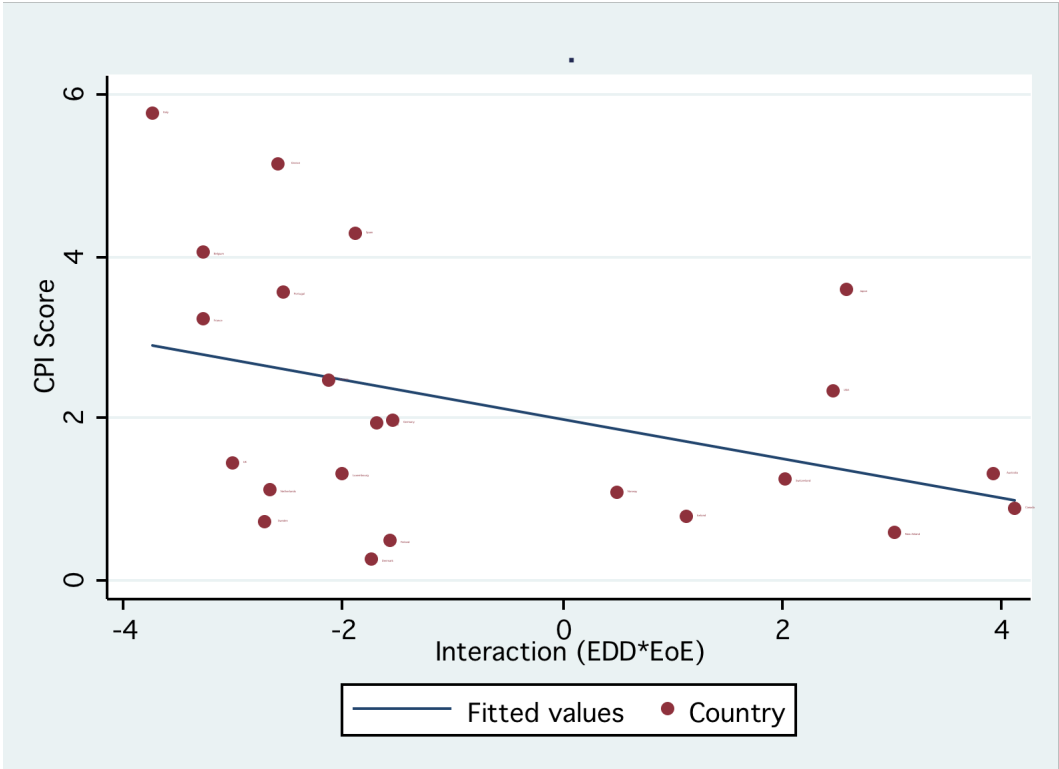
$$\text{Ext.Multiplicative} = (\text{fiscal} + \text{regulatory} + \text{coordinated} + \text{individual}) * (\text{plurality} + \text{form})$$

(6.12b)

Where *regulatory* is the inverse of the fractional version regulatory density (see Section 4.2 for details), *fiscal* is the inverse of the fraction of government expenditure, *coordinated* is a dummy variable that takes the value of one if a country is not an EU member, *plurality* is a dummy variable which takes the value of one if a country has a plurality electoral system and zero otherwise, *form* is a dummy variable that takes the value of one if a country has a parliamentary form of government, and *individual* is a fractional variable that captures the existence of an individual mandate.

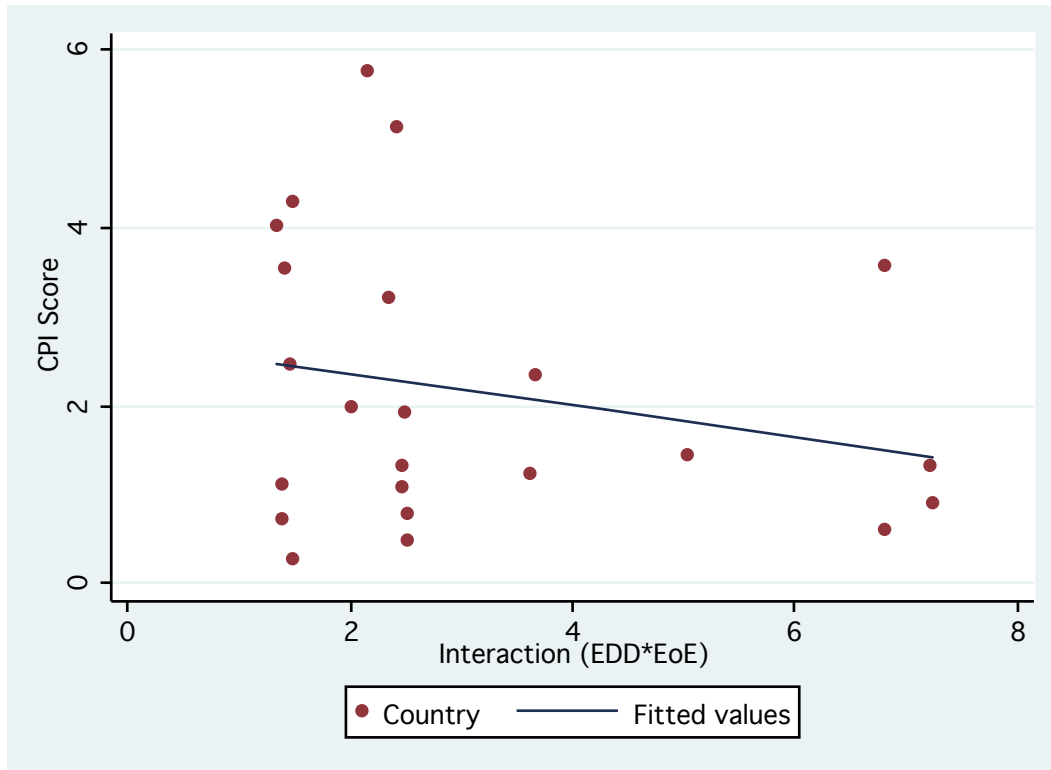
As Diagram 6.04 (with respect to the Baseline EDD/NEDD ratio) and Diagram 6.05 (with respect to the Extended EDD/NEDD ratio) indicate, there is a negative association between increments in the interaction of the EDD/NEDD and the EoE ratio and the level of perceived rent extraction. Of course, until further multivariate analysis is undertaken, these results remain tentative. Still, the fact that when combining all the variables theoretically associated with an increase in voter evaluation into one score, this score is associated with less rent extraction is an outcome consistent with the expectations of the theoretical model.

Diagram 6.04: Rents and the Multiplicative Effect of Limited Government (Baseline) and Electoral Efficacy



Source: The Author

Diagram 6.05: Rents and the Multiplicative Effect of Limited Government (Extended) and Electoral Efficacy



Source: The Author

In short, while the individual indicators of the EoE are only marginally associated with a reduction in rent extraction, the results become stronger as the different institutions are brought together (EoE), and interact with the EDD/NEDD ratio. These outcomes are consistent with the core predictions of: (1) the P-A literature, that context and institutions shape incentives; as well as (2), the substantive assumptions of the economic voting literature linking the EDD/NEDD ratio and the EoE to greater voter evaluation of incumbent competency. Of course, in order to have more confidence in these results, it is necessary to proceed with a multivariate specification and testing of the robustness of the association between the EoE, the multiplicative index, and the level of rent extraction.

**A Note on the Specifications.** In the ensuing analysis the multivariate regression concerned with the interaction term between the EDD/NEDD ratio and the EoE utilizes two different specifications.

The first specification (Multiplicative Effect I) utilized the baseline EDD/NEDD ratio (see Chapter 4) and interacts this with the EoE. This specification is closest to the antecedent literature – the EDD/NEDD ratio is constructed as in Duch and Stevenson (2008) – and the EoE captures the two components of institutions that the economic voting literature associates with more unequal distributions of policy-making responsibility/clarity of responsibility (Powell and Whitten, 1993). However, this specification is potentially problematic, as it does not directly capture the extent to which electoral systems may shape the EDD/NEDD ratio itself, rather than just the way EDDs make policy-making amongst themselves.

Thus, the second specification (Multiplicative Effect II) adds the individual accountability variable to the EDD/NEDD ratio (see above) and interacts this with the EoE. This combination should allow for the identification of all aspects of electoral institutions to be identified. Namely how electoral systems determine the EDD/NEDD ratio itself (individual accountability) as well as their effect on the distribution of policy-making responsibility (EoE). However, because the individual accountability variable (which takes a value of greater than zero if some of a country's legislators are elected in an open list or plurality electoral system) is moderately correlated with the plurality dummy variable in the EoE, this may cause some problems, and moderate multicollinearity cannot be ruled out. If both the results of the first and second multiplicative

specifications are robust, however, it makes it difficult to argue that the lack of control of individual accountability and/or possible minor issues with multi-collinearity are driving the results.

Due to the word limit, other specifications are not reported below or in the appendices, but utilizing a different specification does not alter the main results. Two possible alternative specifications explored are: (1) adding the plurality dummy variable to the EDD/NEDD ratio (rather than the EoE- as discussed above) and interacting this extended EDD/NEDD ratio with the form of government (the only other component of the EoE); (2) creating an additive index of career concerns in which the baseline EDD/NEDD ratio is enhanced by adding the dummy variables for a plurality electoral system, form of government and the fractional variable for individual accountability to the baseline measure. This would now vary from 0-.6. The results of these regression results are available from the author.

### **6.3 Operationalization and Testing**

There are two major hypotheses that need to be tested. Firstly, are increases in the EoE score of a country associated with less perceived rent extraction, as the economic voting literature would suggest? Secondly, is the combination, whether multiplicative or additive, of the EoE and EDD/NEDD ratio also associated with decreases in rent extraction? In order to test these hypotheses, three different model specifications need to be identified. Namely:

$$RENT_i = \beta_1 EoE + \beta_2 Z + u_{3i} \tag{6.13}$$

where  $RENT_i$  is country  $i$ 's CPI, CC to Tickets score;  $EoE$  is an additive indicator of whether a country has a plurality system (0=no, 1=yes) and/or a parliamentary form of government (0=no, 1=yes) – see expression (6.03);  $Z$  is a vector of control variables (see Chapter 2); and  $u$  is the error term.

In order to test the second hypotheses (linking the EoE and the EDD/NEDD ratio) a slightly different specification is needed. Specifically, in order to test the additive approach, the following model specification is used:

$$RENT_i = \beta_{1i}(EoE * EDD) + \beta_{2i}(EDD) + \beta_{3i}(EoE) + \beta_{4i}Z + u_{5i} \quad (6.14)$$

Where  $EoE*EDD$  is the interaction term between the EoE (either Baseline or Extended) and the simple additive (Baseline or Extended) EDD/NEDD ratio described in the previous section (Expression 6.12a and b). The vector of control variables are the same as in Chapter 4 and based on Persson and Tabellini's (2003) dataset (see Chapter 2 and Appendix A). Given that the dependent variable of interest is fractional, or some would argue ordinal in nature, the fractional logit and ordered probit specifications are utilized (see Chapter 2 for details). Furthermore, given the small sample size (n=21 for high-income democracies and 30 for all democracies) the IRLS specification is used to control for outlier observations that may be affecting the results.

## 6.4 Results

There are two stages to confirming whether the empirical evidence is consistent with the theoretical expectations of the model. Namely (1) establishing whether the EoE has an independent effect on the level of rent extraction, as the insights from the economic

voting literature anticipate; (2) examining whether the EoE, in combination (interacted) with the EDD/NEDD ratio, has an independent effect on the level of rent extraction, as hypothesized by the model.

#### **6.4.1 The EoE and the Level of Rent Extraction**

Table 6.04 shows the effect of the EoE on levels of perceived rent extraction. As anticipated, and regardless of which model specification is used (GLM-Regression 1, Ordered Probit; Regression 2 or Re-Weighted Least Squares), the EoE has a negative and statistically significant effect on the level of perceived rent extraction. While the results are marginally weaker when re-weighting for outlier observations (Regression Model 3: significant at only the 10% confidence interval) no other control variable is as consistently robust as the EoE in predicting variation in rent extraction across the three specifications. These results, therefore, provide evidence that is consistent with the theoretical expectations of the model, as well as the overall message of the economic voting literature.

Table 6.04: Rents and the Efficacy of Elections (Positive Test)

	Dependent Variable: CPI		
	(1) (GLM)	(2) (OP)	(3) (IRLS)
	Additive	Additive	Additive
<b>EoE</b>	-1.11*** (0.26)	-3.17*** (0.84)	-0.11* (0.052)
<b>Coordinated Market Economies</b>	-1.43*** (0.33)	-4.10*** (1.13)	-0.056 (0.11)
<b>Economic openness</b>	-0.67 (0.79)	-1.60 (2.03)	-0.61 (0.43)
<b>Economic Inequality</b>	-0.11*** (0.031)	-0.36*** (0.088)	-0.0095 (0.0089)
<b>(log) Per capita income</b>	-0.84** (0.34)	-1.96 (1.45)	0.010 (0.0062)
<b>Mining (% GDP)</b>	0.051 (0.033)	0.20*** (0.059)	0.0043 (0.0045)
<b>School enrolment</b>	-0.018 (0.013)	-0.033 (0.056)	-0.0098** (0.0032)
<b>Ethno-linguistic fragmentation</b>	-2.88 (1.29)	-9.66** (4.26)	-0.076 (0.45)
<b>(log) population</b>	0.29*** (0.069)	0.80*** (0.23)	0.069 (0.040)
<b>Latitude</b>	-1.50 (1.53)	-7.79* (4.01)	-0.31 (0.31)
<b>Sample</b>	High-income OECD	High-income OECD	High-income OECD
<b>Number of Observations</b>	21	21	19
<b>Log-Likelihood</b>	-6.93	-44.83	NA

Robust standard errors in parentheses. \*\*\* denotes significance at the 1% level, \*\* denotes significance at the 5% level, \* denotes significance at the 10% level. See Chapter 2, Section 4.1.4 and Appendix A for control variable descriptions.

Source: The Author

Not only is the EoE significantly associated with less perceived rent extraction in a high-income democracy context, but also, as anticipated, this relationship breaks down in the non-democracy sub-sample. As Table 6.05 indicates, regardless of the specification

used, the EoE does not predict variation in rents in non-democracies. This increases the confidence that the initial results in Table 6.04 are consistent with the theoretical causal mechanisms postulated by the theory, that the nature of electoral institutions conditions the incentives for rent extraction only within a functional democratic context.

Table 6.05: Rents and the Efficacy of Elections (Negative Test)

	Dependent Variable: CPI		
	(1) (GLM)	(2) (OProbit)	(3) (IRLS)
	Additive	Additive	Additive
<b>EoE</b>	-0.49 (0.40)	-1.14 (0.94)	-0.11* (0.052)
<b>All Controls as in Table 6.01</b>	√	√	√
<b>Sample</b>	Non-Democracy	Non-Democracy	Non-Democracy
<b>Number of Observations</b>	23	23	23
<b>Log-Likelihood</b>	-9.45	-61.11	NA

*Robust standard errors in parentheses.* \*\*\* denotes significance at the 1% level, \*\* denotes significance at the 5% level, \* denotes significance at the 10% level. See Chapter 2, Section 4.1.4 and Appendix A for control variable descriptions.

Source: The Author

### 6.4.2 The Multiplicative Index and Rent Extraction

Having provided evidence that the EoE has an independent and robust negative effect on the level of rent extraction, it is now possible to examine whether the Baseline or Extended EDD/NEDD ratio and the EoE have the anticipated negative effect on rent extraction. Specifically, the results, presented in Table 6.06 below, indicate that, (1) the

interaction term between the EoE and the EDD/NEDD ratio has the anticipated negative effect on rent extraction and that this association is especially robust when the Extended EDD/NEDD ratio is used (hereafter denoted as Multiplicative II) as opposed to the Baseline EDD/NEDD ratio (hereafter Multiplicative I). The interaction term (Multiplicative II) between the Extended EDD/NEDD ratio and the EoE is always significant at the 1% confidence interval, independent of the distributional assumptions made (GLM- Regression Model 1, Ordered Probit-Regression Model 3) or the re-weighting of the results to eliminate outliers (Regression Model 5). Conversely, the Multiplicative I results are slightly weaker, and while the interaction term between the EoE and the Baseline EDD/NEDD ratio is significant at the 10% level when the GLM specification is utilized, it is not significant when the ordered probit specification is used. Due to a drop in observations the IRLS model for the Baseline ED/NEDD ratio could not be estimated, but the overall, results remain robust and are consistent with the expectations of the theoretical model. Furthermore, as the evidence in the Appendix indicates, using a different dependent variable does not alter these results.

Table 6.06: Rents, the Efficacy of Elections and the EDD/NEDD Ratio in High-Income Democracies

	Dependent Variable: CPI				
	(1) (GLM)	(2) (GLM)	(3) (Oprobit)	(4) (OProbit)	(5) (IRLS)
<b>Multiplicative I (EoE*EDD)</b>		-0.67* (0.37)		-2.86 (2.74)	
<b>Multiplicative II (EoE+EDD)</b>	-0.76*** (0.10)		-3.29*** (0.58)		-0.13*** (0.023)
<b>EDD (Baseline or Ext) as app.</b>	-0.30 (0.34)	-0.27 (0.36)	-2.17 (2.49)	-2.29 (2.53)	-0.43 (0.29)
<b>EoE</b>	1.25 (1.00)	1.30 (1.10)	5.79 (8.00)	5.73 (7.97)	-0.12 (0.18)
<b>Coordinated Market Economies</b>	-1.05*** (0.26)	-0.68** (0.35)	-4.35*** (1.23)	-3.09* (1.87)	-0.25** (0.089)
<b>Economic openness</b>	-0.75 (0.48)	-1.08** (0.42)	-4.04** (1.98)	-6.26** (2.58)	-0.0053 (0.36)
<b>Economic Inequality</b>	-0.065*** (0.023)	-0.031 (0.033)	-0.37*** (0.095)	-0.23* (0.13)	-0.019** (0.0069)
<b>(log) Per capita income</b>	-0.030 (0.27)	0.0038 (0.28)	-1.38 (1.68)	-1.67 (1.80)	0.13 (0.14)
<b>Mining (% GDP)</b>	0.11*** (0.023)	0.11*** (0.022)	0.53*** (0.095)	0.65*** (0.16)	0.015** (0.0052)
<b>School enrolment</b>	-0.0071 (0.0082)	-0.0099 (0.0061)	-0.043 (0.050)	-0.057 (0.046)	-0.0052* (0.0027)
<b>Linguistic-linguistic fragmentation</b>	-1.42 (0.88)	0.28 (1.39)	-6.04 (4.66)	2.75 (8.91)	-0.41 (0.35)
<b>(log) population</b>	0.26*** (0.055)	0.18*** (0.064)	1.05 (0.24)	-1.67 (1.80)	-0.017 (0.034)
<b>Latitude</b>	-4.03*** (1.00)	-4.75*** (1.12)	-19.44*** (4.74)	-26.12*** (7.63)	-0.87** (0.27)
<b>Sample</b>	High Income OECD	High Income OECD	High Income OECD	High Income OECD	High Income OECD
<b>Number of Observations</b>	21	21	21	21	19
<b>Log- (Pseudo) Likelihood</b>	-6.81	-6.80	-37.34	-36.00	NA

Robust standard errors in parentheses. \*\*\* denotes significance at the 1% level, \*\* denotes significance at the 5% level, \* denotes significance at the 10% level. OLS results -1.55\*\*\* (0.29), -1.47 (0.90) for models (1) and (2) respectively.

Even though these results are generally consistent with the theoretical expectations of the model, they need to be treated with some caution. In particular, the fact that few high-income democracies have a non-parliamentary form of government could be driving the results. In order to establish whether this is the case, Table 6.07

below shows the results using the ‘All Democracies’ sub-sample (as defined by Freedom House; see Chapter 2 and Appendix for details). This has the effect of increasing the number of non-parliamentary observations from two (France and the USA) to five (Bolivia, Chile, Costa Rica, France and the USA).

Qualitatively, the regression outcomes are the same, although in every case the magnitude of the effect is smaller amongst the democracy versus the high-income democracy subset of countries. Namely the Multiplicative II results remain very robust predictors of less rent extraction regardless of the specification used (GLM – Regression Model 1, Ordered Probit – Regression Model 3 or IRLS – Regression Model 5). The results for the Multiplicative I specification are now marginally more robust, with the GLM specification being significant at the 5% level (Regression Model 2 versus the 10% level previously) and the IRLS specification, which could not previously be estimated, being significant at the 10% confidence level.

Table 6.07: Rents, the Efficacy of Elections and the EDD/NEDD Ratio in Democracies

	Dependent Variable: CPI					
	(1) (GLM)	(2) (GLM)	(3) (OProbit)	(4) (Oprobit)	(5) (IRLS)	(6) (IRLS)
<b>Multiplicative Effect I (EoE+EDD)</b>	-0.41*** (0.11)		-1.11*** (0.33)		-0.073*** (0.012)	
<b>Multiplicative Effect II (EoE*EDD)</b>		-0.50*** (0.19)		-0.58 (0.99)		-0.080* (0.039)
<b>EDD (Baseline or Ext) as app.</b>	-0.18 (0.23)	-0.20 (0.28)	-1.48 (1.50)	-1.66 (1.49)	-0.021 (0.048)	-0.024 (0.052)
<b>EoE</b>	1.10 (0.32)	1.22 (0.44)	1.19 (2.50)	1.17 (2.56)	0.20* (0.09)	0.21* (0.10)
<b>Coordinated Market Economies</b>	-0.84*** (0.26)	-0.62*** (0.22)	-1.78*** (0.56)	-1.75*** (0.53)	-0.11*** (0.025)	-0.084*** (0.029)
<b>Economic openness</b>	0.14 (0.41)	-0.45 (0.41)	0.55 (1.11)	-0.50 (1.46)	0.048 (.056)	-0.086 (0.063)
<b>Economic Inequality</b>	-0.026** (0.011)	-0.021* (0.011)	-0.10** (0.039)	-0.093** (0.042)	-0.0093*** (0.0017)	-0.0044** (0.0019)
<b>(log) Per capita income</b>	-0.68** (0.25)	-0.60*** (0.13)	-2.65*** (0.76)	-2.58*** (0.77)	-0.16*** (0.026)	-0.16*** (0.028)
<b>Mining (% GDP)</b>	-0.0055 (0.011)	-0.0067 (0.0089)	0.0012 (0.039)	-0.0069 (0.044)	0.0029** (0.0013)	-0.0050*** (0.0015)
<b>School enrolment</b>	-0.021 * (0.011)	-0.020 *** (0.0073)	-0.067** (0.031)	-0.078** (0.038)	-0.0039*** (0.0012)	-0.0021 (0.0013)
<b>Linguistic-linguistic fragmentation</b>	1.21 (0.82)	0.60 (0.40)	2.25 ( 2.00)	1.48 ( 1.74)	-0.35*** (0.073)	0.10 (0.080)
<b>(log) population</b>	0.26*** (0.067)	0.23*** (0.037)	0.71*** (0.17)	0.80*** (0.21)	-0.16*** (0.026)	-0.16*** (0.028)
<b>Latitude</b>	-1.51 (0.89)	-4.86 (3.46)	-3.08 (3.53)	-4.88 ( 3.88)	-0.59*** (0.12)	-0.44*** (0.14)
<b>Sample</b>	Democracy	Democracy	Democracy	Democracy	Democracy	Democracy
<b>Number of Observations</b>	30	30	30	30	30	30
<b>Log-(Pseudo) Likelihood</b>	-11.07	-10.76	-69.71	-66.48	NA	NA

Robust standard errors in parentheses. \*\*\* denotes significance at the 1% level, \*\* denotes significance at the 5% level, \* denotes significance at the 10% level. OLS results -0.70\*\* (0.29), -0.25 (0.46) for models (1) and (2) respectively.

Turning to the negative test of the model – that electoral institutions should not predict variations in rent extraction in non-democracies – yields the expected results. As Table 6.08 indicates, consistent with the theoretical expectations, the model does not predict levels of rent extraction in non-democracies, with none of the specifications being significant. Once more, this negative test is critical because it is consistent with the theoretical expectation: the nature of elections only affects the level of perceived rent extraction in a democratic context. Had this not been the case, then the results would have cast doubt on the robustness of the micro-mechanisms of the model.

*Table 6.08: Rents, the Efficacy of Elections and the EDD/NEDD Ratio in non-Democracies (Negative Test)*

	Dependent Variable: CPI					
Model Specification	(1) (GLM)	(2) (GLM)	(3) (OP)	(4) (OP)	(5) (IRLS)	(3) (IRLS)
<b>Multiplicative Effect II (EoE*EDD)</b>		0.22 (0.22)		1.09 (2.22)		0.19 (0.40)
<b>Multiplicative Effect II (EoE*EDD)</b>	0.21 (0.26)		1.19 (2.18)		0.18 (0.36)	
<b>EDD Baseline or Ext as app.</b>	-0.97*** (0.25)	-0.90** (0.30)	-5.63*** (1.29)	-5.43*** (1.07)	-0.21*** (0.033)	-0.15*** (0.04)
<b>EoE</b>	-0.87 (0.53)	-0.75 (0.49)	-7.03 (5.11)	-7.04 (5.12)	-0.34 (0.30)	-0.32 (0.29)
<b>All Controls as in Table 6.04</b>	√	√	√	√	√	√
<b>Sample</b>	Non-Democracy	Non-Democracy	Non-Democracy	Non-Democracy	Non-Democracy	Non-Democracy
<b>Number of Observations</b>	22	22	22	22	21	21
<b>Log-(Pseudo) Likelihood</b>	-8.88	-8.90	-47.85	-46.22	NA	NA

*Robust standard errors in parentheses. \*\*\* denotes significance at the 1% level, \*\* denotes significance at the 5% level, \* denotes significance at the 10% level. See Chapter 2, Section 4.1.4 and Appendix A for control variable descriptions.*

*Source: The Author*

### **6.3.3 Alternative Oversight Mechanisms**

It is also important to consider one other set of variables that may be affecting the results: the existence of alternative oversight mechanisms of NEDDs. As noted in Chapter 4 with respect to the EDD/NEDD ratio, it may well be the case that polities with a lower EDD/NEDD ratio, and possibly also a lower EoE score, may have developed alternative oversight mechanisms to ensure rent-minimization. Once these factors are controlled for, the difference in rents between polities with different EoE and EDD/NEDD ratios disappears. Therefore, using the interval oversight index and the GE as controls (see Chapter 2 and 4 for details) provides a critical test in ensuring that the results are not, potentially, driven by omitted variable bias.

As the results in Table 6.09 indicate, the inclusion of alternative oversight mechanisms does not alter the basic results. Namely, that the interaction term between the EoE and the EDD/NEDD ratio is, with the exception of the ordered probit results (Regression Model 3 and 4), negatively associated with less rent extraction (Regression Model 1,2 and 5 and 6). In fact, once these oversight controls are introduced, the interaction term between the EDD/NEDD ratio and the EoE becomes even more significant than before (significant at the 1% level for both models versus the 1% and 10% level when these controls are not included; see Table 6.07. This fact suggests that the multiplicative effect of the EDD/NEDD ratio and the EoE has a robust independent effect on rent extraction, even when controlling for alternative oversight mechanisms.

Table 6.09: Rents, the Efficacy of Elections, the EDD/NEDD Ratio and alternative Oversight Mechanisms in Democracies (Positive Test)

	Dependent Variable: CPI					
Model Specification	(1) (GLM)	(2) (GLM)	(3) (Oprobit)	(4) (Oprobit)	(5) (IRLS)	(6) (IRLS)
<b>Multiplicative Effect I (EoE*EDD)</b>		-0.48*** (0.17)		-0.040 (0.022)		-0.024*** (0.006)
<b>Multiplicative Effect II (EoE*EDD)</b>	-0.49*** (0.18)		-0.033 (0.019)		-0.028*** (0.007)	
<b>EDD Baseline or Ext. as app.</b>	-0.098 (0.29)	-0.010 (0.33)	-1.72 (1.53)	-1.69 (1.49)	-0.096 (0.094)	-0.100 (0.100)
<b>EoE</b>	1.13 (1.00)	1.12 (0.96)	-0.64 (2.78)	-0.67 (2.84)	0.071 (0.18)	0.073 (0.29)
<b>Oversight Index</b>	-0.20 (0.11)	-0.24 (0.14)	1.02 (0.98)	0.99 (1.02)	0.18 (0.11)	0.23 (0.33)
<b>Government Effectiveness</b>	-0.31 (0.26)	-0.36 (0.20)	-2.48*** (0.88)	-2.50*** (0.86)	-0.067 (0.086)	-0.065 (0.099)
<b>All Controls as in Table 6.04</b>	√	√	√	√	√	√
<b>Sample</b>	Democracy	Democracy	Democracy	Democracy	Democracy	Democracy
<b>Number of Observations</b>	30	30	30	30	30	30
<b>Log-(Pseudo) Likelihood</b>	-10.75	-9.66	-64.40	-64.40	NA	NA

Robust standard errors in parentheses. \*\*\* denotes significance at the 1% level, \*\* denotes significance at the 5% level, \* denotes significance at the 10% level. See Chapter 2, Section 4.1.4 and Appendix A for control variable descriptions.

Source: The Author

A final robustness test of the results reported above is whether voters – and not just elites – perceive the interaction between the EDD/NEDD ratio and the EoE to reduce politically-sensitive rent extraction. Using the Global Corruption Barometer data (see Chapter 2), Table 6.10 examines whether voters in countries with a higher multiplicative score perceive rent extraction to be less of a problem in political life. As would be expected from the theory, a higher multiplicative score is associated with lower

perceptions of rent extraction in political life (Regression Model 1 and 2). Furthermore, the multiplicative index cannot explain variation in rent extraction at the personal level (petty rent extraction). This is consistent with the argument that, because officials far removed from the scrutiny of elected policy-makers undertake such types of rent extraction, this would in fact be the case (Regression Model 3 and 4). Therefore, there is considerable evidence that voters, and not just elites, are using contextual variables to update their beliefs about the level of rent extraction generated by senior policy-makers.

*Table 6.10: Rents, the Efficacy of Elections, the EDD/NEDD Ratio and alternative Oversight Mechanisms in Democracies (Positive Test)*

	Dependent Variable: Corruption is a Problem in Political Life	Dependent Variable: Corruption is a Problem in Political Life	Dependent Variable: Corruption is a Problem in Personal /Family Life	Dependent Variable: Corruption is a Problem in Personal /Family Life
Model Specification	(1) Political Life (GLM)	(2) Political Life (GLM)	(3) Personal Life (GLM)	(4) Personal Life (GLM)
<b>Multiplicative Effect I (EoE*EDD)</b>		-0.40*** (0.06)		0.09 (0.45)
<b>Multiplicative Effect II (EoE*EDD)</b>	-0.39*** (0.07)		0.11 (0.41)	
<b>EDD Baseline or Extended as app</b>	-1.62** (0.79)	-1.60** (0.81)	0.0073 (0.59)	0.0069 (0.74)
<b>EoE</b>	-0.86 (0.68)	-0.90 (0.72)	-0.64 (2.78)	-0.63 (2.84)
<b>All Controls as in Table 6.04</b>	√	√	√	√
<b>Sample</b>	Democracy	Democracy	Democracy	Democracy
<b>Number of Observations</b>	22	22	22	22
<b>Log-(Pseudo) Likelihood</b>	-9.45	-9.00	-6.30	-6.01

*Robust standard errors in parentheses. \*\*\* denotes significance at the 1% level, \*\* denotes significance at the 5% level, \* denotes significance at the 10% level. See Chapter 2, Section 4.1.4 and Appendix A for control variable descriptions.*

*Source: The Author*

## 6.4 Conclusion

The way in which elections take place can significantly affect the likelihood that decision-making will occur in a more equal or unequal setting. This is significant because a more equal distribution of policy-making responsibility reduces the ability of voters to infer the individual contribution of EDDs to outcomes. Such contexts, therefore, generate classical ‘common pool dynamics’ in which individual EDDs lose the incentive to rent-minimize in order to secure re-election, since EDDs can rationally anticipate that voters cannot infer their individual competency. As specific institutions have been associated with a greater or lesser likelihood of generating more equal distributions of responsibility, it becomes possible to deduce that, if the model is correct, institutions that generate more unequal distributions of policy-making responsibility should be associated with less rent extraction.

Drawing on the insights of the economic voting and political economy literature, this Chapter identifies that the two institutions likely to engender a less equal distribution of policy-making responsibility are: (1) plurality electoral systems (because they encourage two party competition); (2) parliamentary forms of government (because they encourage cohesion and avoid divided government scenarios) as well as (3) the effect of individual accountability on the EDD/NEDD ratio itself; have the expected effect on the level of rent extraction. These substantive findings enable the Chapter to construct an index of electoral efficacy (EoE), used to denote institutional contexts in which the distribution of policy-making responsibility is likely to be more unequal. Furthermore, it is possible to deduce that the EoE should interact with the Baseline or Extended EDD/NEDD ratio to generate even stronger overall incentives for EDDs to alter their

level of rent extraction in predictable ways. Namely, increments in both the EDD/NEDD ratio and the EoE should be associated with less rent extraction.

While given the small universe of cases the results have to be treated with some caution, they do provide sufficient evidence to support the basic expectations of the theoretical model. Specifically, the EoE index is associated with less rent extraction, irrespective of the model specification and dependent variable used. When the EoE is interacted with the EDD/NEDD ratio, the results are always in the right direction, and usually significant in both high-income and all democracy settings. The only exception to this are the Ordered Probit specifications in which the independent variable of interest takes the right sign, but is not always statistically significant. Furthermore, consistent with theory, the results break down once the non-democratic sub-sample is used. Thus, both the basic and most of the extended results provide robust evidence that the factors affecting the incentives of EDDs also affect the level of rent extraction, in a manner consistent with the model.

Furthermore, this empirical testing serves as a useful validation check of the results presented in Chapter 4. This is because the theoretical expectation allows for the disaggregate examination of how the political context affects the efficacy of elections. Thus, rather than simply exploring whether there are differences in the ability of the EDD/NEDD ratio to explain some of the variation in rent extraction in high-income democracies versus all democracies versus non-democracies, it becomes possible to examine how and to what extent the EDD/NEDD ratio works in conjunction with specific electoral institutions, in order to alter the level of rent extraction.

## **7 Conclusion**

The aim of this thesis was to explore the determinants of rent extraction in high-income democracies. In order to realize this objective, the thesis sought to generate and test a novel set of hypotheses. These hypotheses would link variation in contextual and institutional factors to changes in the incentives that incumbent policy-makers face to alter their level of rent extraction, in anticipation of what this might signal to voters about their innate competency. In particular, the thesis combined insights from: (1) the political economy literature (the career concerns model), (2) the economic voting literature (substantive factors affecting voters' utility functions; Duch and Stevenson, 2008); and (3) the assumption that the factors that determine the economic vote may also shape the strategic incentives of incumbents (who anticipate voters' reactions and alter their behaviour accordingly), in order to generate a set of novel hypotheses.

While focusing on a set of different contexts (EDD/NEDD ratio) and, to a lesser extent, institutional factors (EoE) throughout, the logic behind how variation in these factors affected incumbent incentives remained the same. Essentially, the generic logic of the theoretical model always linked variation in (1) a specific context and/or institutional variable to (2) variation in voters' information about an incumbent's competency; and therefore (3) the strategic incentives of electorally accountable and career concerned incumbents to alter their level of rent extraction, in anticipation of voters' actions at the next election. Specifically, the substantively enriched career concerned model developed was able to generate the testable hypotheses, linking a specific context and/or institution to changes in rent extraction amongst senior policy-makers. Namely, the link between rent extraction and (1) the distribution of policy-making responsibility between

electorally accountable (EDD) and electorally unaccountable (NEDD) decision-makers; (2) the distribution of policy-making responsibility (electoral efficacy: EoE); and, by extension, (3) the interaction effect between the distribution of policy-making responsibility and the manner in which electorally dependent decision makers are elected.

Having formally derived these hypotheses, it then became possible to use the independent variables identified in the economic voting literature, in conjunction with actual and perceived measures of rent extraction, to test the empirical implications of the theoretical model. Specifically, by developing measures of (1) the extensiveness of government (capturing the EDD/NEDD ratio); (2) the nature of electoral competition (captured by the EoE); as well as (3) the interaction between the two, it was possible to operationalize and test the predictions of the theoretical model. This therefore enabled an evaluation of the extent to which contextual and institutional factors shape the incentives of elected officials to alter the level of rent extraction within a fully functioning democratic context.

Of course, throughout this enterprise it was also essential to be mindful of the caveats or limitations of the project. While the theoretical and empirical strategy deployed was designed to (1) limit the number of restrictive theoretical assumptions needed to derive the testable hypotheses of interest, and (2) maximize the number of valid and rigorous empirical tests that could be applied to test these hypotheses, this approach was not foolproof. With respect to the theory, the theoretical model developed made fewer restrictive assumptions vis-à-vis its exclusively selection or moral hazard counterparts. However, the theoretical model still relies on some restrictive assumptions in order to generate the hypotheses of interest. Specifically, the theoretical model

assumes that, at the beginning of the game, the incumbent lacks knowledge regarding her own competency, which, while plausible, may not be appropriate in all settings.

Empirically, the absence of an objective and multi-dimensional measure of rent extraction available across a large number of countries means that the theoretical model was tested using perceptions of rent extraction with a narrow objective indicator serving as a robustness check. While there are good reasons to believe that these measures are valid and reliable, they are likely to be a somewhat noisy measure of the phenomenon of interest (actual rate of rent extraction across all issue domains governed by elected officials). This would possibly affect the validity of the results to a certain extent. Furthermore, the inappropriateness of using subjective indicators over time and the absence of cross national objective measures of rent extraction also limits the analysis to a cross-sectional approach using subjective indicators, rather than a more rigorous over time treatment which could have controlled for time and country fixed effects.

In this concluding Chapter, the findings and limitations of this research enterprise are summarized and critically evaluated. This process enables an assessment to be made of the extent to which contextual (EDD/NEDD ratio) and institutional (EoE) incentives affect the decisions that elected officials have to vary their level of rent extraction. Specifically, as part of this process, the concluding Chapter examines both (1) the caveats of this research enterprise, and therefore (2) the extent to which future research can go further and develop new and more refined hypotheses building on this research agenda. The stage has been set for future research that can further increase our understanding of the determinants of rent extraction in high-income democracies.

## **7.1 Rent Extraction in High-Income Democracies**

Before even considering what may be the causes of variation in rent extraction amongst high-income democracies, it is first and foremost essential to ensure that a valid, consistent, and reasonably efficient measure of this phenomenon can be identified. Without the existence of such a measure, it becomes impossible to test any theoretically derived hypotheses in practice. The comprehensive and critical review of the literature, regarding how to measure rent extraction (Chapter 2), provided a comprehensive overview of the different subjective and objective measures of rent extraction, and enabled the thesis to settle on the use of subjective indicators of rent extraction – the CPI and the CC – that are focused on the activities of senior policy-makers.

In the absence of a consistent cross sectional and comprehensive objective measure of rent extraction (see Caveats, Section 7.6) the review identified the major composite and subjective indicators of rent extraction as the most appropriate measures to use as the dependent variable of interest. There were several reasons for selecting these indicators: (1) these survey based instruments are consistently available for a large number of countries, enabling cross-sectional variation in context and institutions to be exploited to test the hypotheses; (2) the subjective survey based instruments, unlike most of their narrowly focused objective counterparts, seek to measure overall levels of rent extraction, rather than specific and more narrow incidences of this phenomenon; furthermore, (3) the fact that the different comparative surveys of rent extraction are consistently measuring the same underlying variable, and so long as standard errors are taken into account, the empirical evidence does not suggest that these subjective surveys yield statistically different results from available narrow objective measures of rent

extraction. This means that the results of any empirical analysis should not be significantly affected by changing the dependent variable, as all these variables are clearly measuring the same underlying factor<sup>118</sup>.

Of course, despite their overlapping use of sources, the different subjective survey instruments have a different substantive focus. Therefore, having established the validity of such indicators in *general*, it became necessary to identify the subset of indicators most likely to capture the type of rent extraction undertaken by elected officials. Given the considerable overlap in sources and focus on general versus bureaucratic rent extraction, both the CPI and the CC were identified as potentially valid measures of rent extraction. Unsurprisingly, the two are highly correlated. However, because the CPI has more representative sources, none of which are focused on bureaucratic as opposed to government or overall rent extraction, the CPI results are reported in the text. As the results in Appendix B indicate, though, replacing the CPI with the CC or the objective based Ticket's data does not alter the overall robustness of the results.

As a precursory examination of the surveys demonstrates, these measures of rent extraction all show that there is considerable variation in the amount of perceived rents amongst high-income democracies, even at the 10% confidence interval. Furthermore when using the most robust standard socio-economic variables (identified by theory as shaping the principal-agent relationship between voters and incumbent policy-makers), to try and explain this variation, these variables are found to provide only a very limited explanation of the determinates of rent extraction in high-income democracies. More specifically, utilizing these variables demonstrated that though they can account for a very significant amount of the variation in rent extraction (in both a pooled dataset as

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<sup>118</sup> Something verified in Appendix B.

well as the subset of non-high-income countries) they cannot explain a great deal of the variation in rents within the subset of high-income democracies. This provides empirical justification for trying to develop new theoretically derived hypotheses that can try and account for some of this variation.

In summary, despite the limitations of not having a comprehensive objective measure of rent extraction the this empirical analysis, coupled with the exhaustive review of the existing subjective and narrow objective indicators, provides a good motivational basis, as well as a vector of control variables, for the subsequent formulation and development of a theory. This theory seeks to explain the way in which elections might condition the level of rent extraction, and thus account for some of the variation in the level of rents found in high-income democracies.

## **7.2 A Career Concerned Contextual Theory of Rent Extraction**

A critical starting point for trying to explain variations in rent extraction within high-income democracies, is the development of a theory which is capable of generating novel testable hypotheses for the causes of such variation. Given that what all high-income democracies have in common are relatively stable democratic structures, and citizens with the socio-economic resources to participate effectively in elections, it follows that any model that will be used to generate novel hypotheses must assume the existence of free, efficient, and fair elections. Furthermore, given the large amount of theoretical and empirical literature that suggests that both moral hazard and (adverse) selection incentives may exit simultaneously, a realistic theoretical model should strive to

incorporate both of these elements, rather than assume one or the other away. Therefore, the generic career concerns model that incorporates the existence of efficient elections, moral hazard, and selection effects, is ideally suited to form the basis of such a modelling exercise.

Of course it is important to note that, while making fewer restrictive assumptions than most other theoretical models, the career concerns approach still makes one restrictive assumption: that incumbents do not know their competency at the beginning of the game. An assumption that may not hold in all situations. As explained in Section 7.6, while this does not mean the theoretical predictions are not robust, future research, utilizing more data (as it becomes available) may be able to better test under what conditions this theoretical assumption is logical.

Specifically, by combining (1) this generic career concerns modelling framework, developed for political economy purposes by Persson and Tabellini (2001) with (2) the substantive assumptions of the Duch-Stevenson model (regarding the impact on voters' assessments of incumbent competency), determined by (a) changes in the ratio of public policy-making undertaken by EDDs and NEDDs; (b) the extent to which electoral institutions affect the distribution of policy-making responsibility amongst EDDs (the Efficacy of Elections, EoE); as well as (c) the interaction of the EDD/NEDD ratio and the EoE, it became possible to generate a set of testable hypotheses regarding under what conditions public policy-makers in high-income democracies will have an incentive to increase or decrease their marginal rate of rent extraction. The theoretical model developed predicts that increments in the EDD/NEDDs ratio and/or a more unequal distribution of policy-making responsibility (higher EoE) will correspondingly reduce,

although not eliminate, the incentives that public policy-makers have in order to engage in rent extraction.

The theoretical component of the thesis begins with a baseline ‘career concerned’ game theoretic modelling framework. Building on rational choice foundations, this approach demonstrates how the anticipated reaction of voters to an incumbent’s performance may incentivize career concerned incumbents to limit their short-term rent extraction, given that they do not know how competent they are in performing public policy tasks when first entering office. This is because as (1) both voters and incumbents do not initially know the competency (type) of the incumbent, and (2) voters are better off re-electing a high-competency incumbent (even though they can anticipate that she will pursue a rent-maximizing strategy in the second period), then (3) elections can potentially serve to alter the level of short-term moral hazard and long-term adverse selection, as (4) by minimizing the level of short term rent extraction (waste) an incumbent who expects to be of high competency, with a reasonable probability, can secure re-election. In short, this modelling approach has the advantage of not restricting the assumptions of what motivates voters and public policy-makers, as its hybrid nature allows for the combination of both adverse selection and moral hazard considerations. This parsimonious approach builds on a growing literature of theoretical and empirical work which suggests that both moral hazard and adverse selection effects may work in tandem with each other (Persson and Tabellini, 2001), and that both have a significant effect on the performance of electorally dependent incumbents (Alt et al, 2011).

While the existence of elections does not, therefore, eliminate the incentives for rent extraction, they can potentially mitigate them by the way in which they condition

incumbents' behaviour. The logical implication of this model is that institutions which (1) make more incumbents accountable to voters (higher EDD/NEDD ratio) and (2) alter the EoE (increase the inequality of reasonability between EDDs), thus making the distinct contribution of individual EDDs clear, will alter the level and hence induce variation in rent extraction. Given that there is now a large literature linking both the EDD/NEDD ratio and the EoE to the ability of voters, to identify the contribution of incumbents to economic policy-making (the economic voting literature), it is logical to examine whether the same institutions that condition economic voting also work in relation to the level of rent extraction. Utilizing the substantive insights of the Duch-Stevenson model (2008) and political economy literature on the nature of electoral competition, the theoretical model was thus enriched to take into account the substantive insights of these corpuses of work. In this way, the theory-generating exercise builds on, and adds value to, the existing corpus of theoretical work. Specifically, the modelling exercise enables:

- 1) **The extension and testing of the portability of the theoretical and empirical insights of the economic voting literature.** The core assumption behind the economic voting literature is that certain institutions allow voters to use elections to effectively identify the contribution of electorally dependent policy-makers towards total economic performance. The theoretical model developed herein generalizes this insight, and shows how the EDD/NEDD ratio and the EoE will affect the behaviour of incumbent policy-makers. It thus takes the decision-theoretic assumptions of the Duch-Stevenson model and its predecessors (Alesina and Rosenthal, 1995) and generates predictions based on a game theoretic

approach. In so doing, it generates a set of hypotheses on how public policy-suppliers might behave in anticipation of voters' electoral strategy. It also enables for the testing of hypotheses focusing on public policy outcomes (level of rent extraction) rather than just voters' reactions (magnitude of the retrospective evaluation vote). Ultimately, it demonstrates the rigour of the economic voting assumptions and extends their scope to actual public policy outcomes.

- 2) **A more refined theoretical explanation of the role of context in explaining variations in rent extraction within high-income democracies.** From the onset of the principal-agency literature<sup>119</sup> it has been anticipated that the existence of elections can only partially solve the misalignment of incentives (moral hazard) and/or preferences (selection) between principals (voters) and public policy-makers (agents). However, attempts to utilize the nature of public policy-making (size of government, regulatory density, etc.) to account for some of the variation in the level of rent extraction has produced very mixed results (see Chapter 1, or Lambsbroff, 2006). By modelling and utilizing a continuous and multi-dimensional measure of the extensiveness of the state (EDD/NEDD ratio), which has been clearly linked to voters' ability to evaluate incumbent performance, it becomes possible to directly link conditional electoral performance on marginal changes in the public policy-making *modus operandi* (extensiveness of the state). This enables the operationalization and derivation of new hypotheses that yield very robust results. This suggests that, consistent with the model and its theoretical antecedents, democratic politics in which electorally accountable

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<sup>119</sup>See Barro (1973), Ferejohn (1986), or more recently, Besley (2006).

public policy-makers as opposed to insulated bureaucrats (including those supervised by peak organizations), who make policy, reduces the incentives for rent extraction.

- 3) **A more refined theoretical explanation of the role of the nature of electoral competition in explaining variations in rent extraction within high-income democracies.** A large literature has linked political institutions (electoral systems and form of government) to (sometimes contradictory) incentives that electorally dependent incumbents face (see Chapter 1, or Treisman, 2007), but it is possible to deduce from the model that increasingly unequal distributions of policy-making responsibility will incentivize career concerned EDDs to minimize their level of rent extraction. Thus, the exercise enables the mapping of how multiple institutions, identified in the economic voting literature as affecting the magnitude of voter evaluation, might have a strategic effect on the incentives that incumbents face to engage in more/less rent extraction, given how they condition the re-election calculus (weighting of individual performance).

Given these theoretical implications, it then became possible to operationalize the predictions of the model into specific hypotheses that could be empirically tested, and thereby establishing the model's capacity in contributing to our ability to explain variations in rent extraction amongst high-income democracies. This objective is achieved by utilizing existing theoretical and empirical evidence that has linked specific contextual and institutional variables to changes in the distribution of policy-making, and the nature of electoral competition in stable democratic (i.e. high-income democracy) contexts.

### 7.3 Operationalization

In order to generate testable hypotheses, the direct, intrinsically consistent implications of the theory need to be associated with a set of consistent substantive assumptions of how specific contexts alter the incentives faced by career concerned electorally dependent public policy-makers. Associating the testable hypotheses with these substantive assumptions thereby generates predictions about how specific institutions incentivize such policy-makers to change their level of rent extraction, by altering the optimality of different strategies.

The empirical consequences of the theory has the following form, which indicate that the incentives of the career concerned elected policy-makers depend on how they anticipate that the institutional context will condition their perceived competence, and hence re-election prospects. If the institutional context  $x$  alters the anticipated reaction of voters to an incumbent's effort level, the implications of the model suggest that this will have a predictable effect on altering the levels of rents extracted,  $y$ , by the incumbent. Given the existence of cross-country variation in institutions (within the subset of fully functioning democracies), it follows that it is possible to predict how different institutional configurations ( $x, x', x''$ ) can theoretically predict variations in rent extraction ( $y, y', y''$ ) (Duch and Stevenson, 2008).

Supplementing the implications of the theory with assumptions about the specific political and economic institutions that shape the incentives faced by the career concerned politicians, means that it becomes possible to generate potentially falsifiable hypotheses from the theory. Specifically, using the substantive insights of the economic

voting and political economy literature, it becomes possible to link the logical implications of the theory to the substantive consequences of variation in institutions. Therefore, it follows that enriching the theoretical model with the assumptions emanating from this literature yields two very specific predictions:

- 1) Contexts in which public policy-making are characterized by limited, rather than extensive, government will generate greater incentives for career concerned and electorally accountable public policy-makers (EDDs) to pursue a rent-minimizing strategy. This is because EDDs can anticipate that voters will be more likely to attribute rent extraction (and hence their individual inferred competence) to their actions, rather than to those of insulated public policy-makers (e.g. electorally impervious bureaucrats, interest groups involved in public policy-making, etc.). Therefore, empirically, the model predicts that changes in the nature of public policy-making (limited versus more extensive government) will have predictable effects on the level of rent extraction (fewer versus more rents).
- 2) Institutional contexts, in which the nature of electoral competition makes the distribution of policy-making responsibility more unequal (that is, in which the governing majority does not change significantly between elections), will generate greater incentives for career concerned and electorally accountable public policy-makers (EDDs) to pursue a rent-minimizing strategy. This is because EDDs can anticipate that their individual actions, rather than those of party colleagues, will determine their re-election prospects. Therefore, the ability to engage in rent extraction comes at an increased cost (greater loss of electoral

support). Therefore, empirically, the theoretical model predicts that changes in the nature of electoral competition (greater versus less equal distribution of policy-making responsibility) will have predictable effects on the level of rent extraction (fewer versus more rents).

- 3) Contexts in which the distribution of public policy-making responsibility is skewed towards EDDs (higher EDD/NEED ratio) and in which the efficacy of electoral competition is significant (higher EoE) will exhibit lower levels of rent extraction. This Ancillary Hypothesis follows logically from (1) and (2) above, since if EDDs have a greater role in policy-making and voters can identify their actions and hold them to account (EoE score), it follows that incentives for rent-minimization will be greater than in contexts with a diminished EDD/NEED ratio or EoE score. Thus, the interaction between the two variables should be a robust and negative predictor of the magnitude of rent extraction.

In short, the combination of the implications of the model with the substantive assumptions of well-established literature in economic voting and political economy enables the generation of specific and potentially falsifiable hypotheses, whose robustness can be verified using cross-sectional data.

## 7.4 Empirical Evidence

The last major objective of the thesis is the testing of the empirical implications of the theoretically derived hypotheses generated by the model. Fortunately, given the well established and critically reviewed literature on (1) measuring rent extraction (dependent variable of interest); (2) the link between the implications of the model and the substantive assumptions regarding the effect of institutions on politicians' incentives (independent variables of interest); as well as (3) the existence of a large corpus of work which has identified other determinants of rent extraction (vector of essential and additional controls), it is possible to operationalize and test the robustness of the theoretical predictions generated by the model. This is achieved by adding the independent variables of interest to existing datasets that contain the dependent and control variables. Specifically, using an augmented version of Persson and Tabellini's (2003) famous dataset from the *Economic Effects of Constitutions*, it is possible to examine whether the institutions associated with changes in the incentives of electorally dependent public policy-makers affects the level of rent extraction in the manner anticipated by the model.

Consistent with the theoretical expectations of the model, the nature of public policy-making can robustly explain levels of rent extraction undertaken by senior policy-makers in high-income democracy and all democracy contexts. Specifically, a multi-dimensional measure of the size of government – measuring the EDD/NEDD ratio (incorporating the tax burden, regulatory density and level of public policy coordination) – was associated with rent extraction, in the manner anticipated by the model. Namely,

more limited governments in which electorally dependent actors played a bigger role in public policy-making also exhibited lower levels of (politically sensitive) rent extraction. These results are very robust and consistent with the findings of the economic voting literature. The results were particularly strong when confined to the subset of countries classified as high-income democracies. This outcome is consistent with the micro-theoretical foundations of the model, which posits that the size of the public sector conditions the efficacy of (regular and hence institutionalized) elections, and thus the incentives that EDDs face. However, the empirical evidence could not explain variation in rent extraction amongst non-democracies, especially the fact that some components of the EDD/NEDD ratio were positively and statistically significantly associated with more rent extraction<sup>120</sup>.

Not only is the cross-sectional data on rent extraction consistent with the theoretical expectations of the model, but there is also evidence that more micro-level data also supports the expectations of the theory. Using survey data on the level of perceived rent extraction at the national and EU level, it was possible to demonstrate that voters were using the national EDD/NEDD ratio in a rational manner. Namely, the EDD/NEDD ratio, which varied considerably at the national level, was negatively and significantly associated with less rent extraction at the national level. Given that the EU EDD/NEDD ratio does not vary significantly at the national level, it was also expected that the national EDD/NEDD ratio (which varies considerably more) would not be correlated with voters' perceptions of EU level rent extraction (which should be more stable across the member states). The fact that these expectations were confirmed, albeit

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<sup>120</sup> This could possibly be due to the fact that, amongst non-high-income non democracies, elements of the EDD/NEDD ratio are correlated with state capacity.

using a small sample size, adds confidence that the model is robust, as it is shown that not only elite but mass perceptions of rent extraction vary with a given institution's EDD/NEDD ratio.

Of course, the public policy-making context is not the only institution that conditions the efficacy of elections. How career concerned EDDs are elected also affects the incentives they have in order to alter their level of rent extraction. Consistent with the theoretical expectations of the model, the importance of the efficacy of elections (EoE) in ensuring re-election can robustly explain levels of rent extraction. Specifically, a multi-dimensional measure of the importance of electoral efficacy (more unequal distribution of policy-making responsibility) was associated with less rent extraction in the manner anticipated by the model. Namely, a greater EoE score resulted in lower levels of (politically sensitive) rent extraction.

Consistent with these two findings, the interaction effect between the EDD/NEDD ratio and the EoE was also found to be significant. This outcome suggests that contexts in which elected officials are responsible for more decision-making, and can easily be held to account, generate the greatest incentives for rent-minimization.

In short, the testing of the model's predictions yields robust results that are entirely consistent with the predictions of the theoretical framework. It is important to note that these findings relate to a very narrow type of rent extraction (grand political corruption) and may not necessarily hold for other types of rent extraction. Furthermore, the macro-level quantitative nature of the empirical investigation, while a critical first step in this research agenda, needs to be complemented with additional quantitative and qualitative micro-level data. This could be survey data that contains individual level

characteristics and case studies to enable a more nuanced understanding of causal mechanisms to emerge.

## **7.5 Caveats**

While the research enterprise has sought to advance knowledge of how contextual and institutional factors affect the level of rent extraction via the way they condition the policy-making incentives of elected officials, there are several ways in which this research agenda can be refined and expanded. Broadly, there are two categories of caveats that need to be considered: (1) theoretical caveats that are linked to the theoretical assumptions made, and hence the hypotheses derived; and (2) empirical caveats that are linked to the identification strategy, and the operationalization and testing of the hypotheses. Considerations of these caveats is critical, because by identifying the limitations of the research enterprise, it becomes possible to think about how future research can develop new theoretically derived hypotheses and/or tests, and thus to further the research agenda at hand.

### **7.5.1 Theoretical Caveats**

The theoretical model combines a set of assumptions from different literature – the game theoretic career concerns model of political economics, and the voter utility functions of the Duch-Stevenson model – in order to generate a set of new hypotheses. As such, the strength of the model is that it generates new insights (how incumbent policy-makers strategically react to voters' behaviour, given their enriched utility functions). However,

when combining insights from different models, the decisions made about which assumptions to adopt can have significant implications as to which hypotheses are generated.

The career concerns modelling framework was specifically selected because it does not assume away either moral hazard or adverse selection effects. It can, therefore, predict the conditions under which both moral hazard and adverse selection can be mitigated. In contrast, pure moral hazard and adverse selection models are at a disadvantage, as they have to assume away the other pathology, and are therefore less likely to capture complex outcomes in practice. Furthermore, by using a rational expectations motivation, the model does not have to assume either retrospective or prospective voting, as rational voters use past actions to judge current and future performance. However, in order to achieve this, the model does assume that incumbents, like voters, do not know their own competency. While this may not be an unrealistic assumption (public office is very different from previous experiences) relaxing it does alter the hypotheses that can be derived.

Specifically, as Besley (2006) has shown, if incumbents know their own competency and both moral hazard and adverse selection effects are at play (in the career concerns framework) then the effect of elections is ambiguous rather than positive, as incumbents of a low competency will rationally anticipate this and simply rent-maximize. So on average, the effect of elections becomes more limited as they fail to incentivize rent-minimization via career concerned moral hazard mitigation. However, the effects of relaxing this assumption – while significant to the extent that they eliminate one type of rent-minimizing mechanism – do not completely destroy the robustness of the career

framework. This is because higher competency incumbents will still have an incentive to rent-minimize in order to reveal their competency. Therefore, while the magnitude of rent-minimization may be smaller than in the career concerns modelling framework, it is still qualitatively in the right direction: at least half of incumbents will pursue rent minimization if they are held to account by elections.

The second theoretical assumption of the model – the rational expectations assumption – also affects the hypotheses derived from the model. By focusing on how voters evaluate an incumbent's actions in office to predict future competency, this assumption somewhat restricts the ability of the model to generate hypotheses linking future actions to current promises. That is, it does not address the possibility that incumbents may be able to credibly commit to a specific course of action in the future (purely prospective approach). If the assumption that incumbents can credibly commit to future actions is introduced, it may be the case that there is a link between the usefulness of elections (determined by the EDD/NEDD ratio or the EoE) and the details of manifesto commitments etc. Furthermore, more effective electoral oversight would be associated, for example, with more detailed manifestos. Such prospective assumptions are part of both the political economy and economic voting literature (e.g. Barro, 1973), yet the current model does not allow for more nuanced hypotheses, linking context and institutions to the nature of electoral competition to emerge. More refining and testing of the theoretical assumptions may, therefore, be necessary before further progress can be made.

### **7.5.2 Substantive and Empirical Caveats**

Despite the fact that the empirical evidence broadly supports the model, there are significant limitations associated with the identification, operationalization, and testing of the model in practice.

As noted above, the absence of an objective indicator of rent extraction, available across countries and over time, is a significant limitation to the ability to test the theoretical model directly. However, while the absence of such a variable is an important obstacle to empirical hypothesis testing, it does not pose an insurmountable one. This is because there is strong evidence that, despite being a somewhat noisy or too narrowly focused on one type of rent extraction the existing (1) composite subjective indicators and (2) narrow objective indicators of rent extraction; are valid and reliable and can therefore, be used to test the derived hypotheses. Of course, this still requires the assumption to be made that these subjective indicators are representative of overall rent extraction. However, given the strong association found between these measures and narrow indicators of rent extraction, as well as outcomes (trust in government etc) suggests that their validity, while not perfect, is unlikely to be prohibitive.

Another significant limitation of the empirical testing of the model is the fact that the dependent variables of interest cannot, because of their design (CPI, CC, GE) or narrow focus and limited availability (Tickets), be used to examine how variation in context and institutions alters the incentives for rent extraction over time (that is dynamically within the same country). Such a model specification would have been useful, because it would have allowed for the verification that over time, changes in

contexts and institutions affect voter perceptions and incumbent incentives within a given country (reducing the likelihood of omitted variable bias, due to cross sectional heterogeneity).

A third, but critical, caveat is the link between regime type and the efficacy of elections. Consistent with the theoretical expectations, the model generally supports the notion that the EDD/NEDD ratio and the EoE work most effectively (most robust and significantly results) in a high-income democracy context, followed by a democratic context (in general). The fact that these results break down in non-democracies is encouraging, as it is consistent with the theoretical priors. However, the fact that some components of the EDD/NEDD ratio have a significant and positive effect on rent extraction amongst these states cannot be explained by recourse to the theoretical model. Furthermore, the theoretical model does not provide any guidance regarding how to identify any sort of democratic or socio-economic threshold after which elections are likely to be more or less effective. As such, the designation between democracies and non-democracies is somewhat arbitrary, and the results may be contingent on these selection issues.

## **7.6 Substantive Implications**

Despite the caveats and omissions, the implications of the model remain consistent. Namely, that in democratic and especially high-income democracy contexts, the level of rent extraction undertaken by senior policy-makers (elected officials and those accountable to them) is affected by contextual (EDD/NEDD ratio) and institutional (EoE) factors. In other words, the ability of elected officials to exercise oversight of the

public sector (higher EDD/NEDD ratio) and/or a more unequal distribution of policy-making responsibility (higher EoE) are associated with less rent extraction in these states. Does this mean that, in order to reduce overall rent extraction and improve governance, all high-income democracies should pursue policies to increase their EDD/NEDD ratio, and switch to a parliamentary and plurality form of government?

The answer to this question is not necessarily. This is because while the EDD/NEDD ratio and the EoE have been linked to reduced rent extraction amongst senior policy-makers, it does not mean that they reduce overall rent extraction. As the data in Chapter 4 showed, the EDD/NEDD ratio is not capable of explaining perceptions of petty rent extraction. It may well be the case that types of rent extraction not explored are negatively linked to the EDD/NEDD ratio or the EoE. Similarly, that factors that reduce these types of rent extraction are negatively associated with a higher EDD/NEDD ratio and/or EoE. For example, increased non-electoral oversight of NEDDs may reduce the EDD/NEDD ratio, but decrease the incidence of rent extraction.

## **7.7 What Remains to Be Done?**

This thesis has demonstrated how the institutional and contextual variables that govern the incentives faced by elected officials in high-income democracy contexts can explain a significant amount of the variation in rent extraction within these polities. Specifically, the implications of combining the generic career concerns model with the substantive assumptions of the economic voting and political economy literature can be used to generate a set of hypotheses which were found to be empirically robust. While this

exercise has been fruitful, in that it has yielded a tractable model and robust results, much remains to be done. In particular, the following extensions of this basic research project are likely to provide useful avenues for future research.

### **7.7.1 Theoretical Extensions**

By analysing the implications of much of the economic voting literature via game theoretic and hybrid (moral hazard and adverse selection) modelling framework, this thesis extended the hypotheses generated by the mostly decision-theoretic and voter-centric insights of the canonical models in the economic voting literature (especially the Duch-Stevenson model). However, more theoretical refinements are possible. In particular, it might be fruitful to investigate the implications of the basic model in situations in which there is uncertainty over policy-making responsibility. This might bring to prominence the importance of yardstick competition in facilitating voters' retrospective evaluation of office-holders (e.g. Besley and Case, 1995), and the existence of congruent versus dissonant public policy-makers. The potential implications of this might be to render the effect of elections as ambiguous, as while elections may still enable voters to limit short-term moral hazard and retain competent candidates, they may also create incentives for high-competency but dissonant policy-makers to limit their short-term rent-extracting (signalling high competency) in order to retain office (see Besley, 2006, for an analysis of the welfare effects of such a pooling equilibrium).

In addition to relaxing or altering the basic assumptions of the model, the substantive assumptions could also be modified. In particular, it might be interesting to examine how changes in the incentives of elected officials might alter the levels of

different types of rent extraction. Thus, for example, it may be the case that increased electoral control reduces grand political corruption, but increases pandering and hence other forms of rent extraction and/or rent seeking. Alternatively, it might also be interesting to examine how changes in the institutional and contextual factors that govern the incentives of elected officials work when elections are only partly free and fair, and/or how the efficacy of elections is also conditional on the characteristics of the electorate (ethno-linguistic fragmentation, ideological polarization, socio-economic inequalities, etc.).

### **7.7.2 Empirical Extensions**

The empirical findings of this thesis provide very robust evidence regarding the contextual determinants of the importance of institutional and contextual variables in altering the incentives of career concerned and electorally dependent public policy-makers. The results, especially with respect to economic policy-making, were particularly strong amongst high-income democracies. There is a well-known and non-linear association between democratization and rent extraction, and that new democracies are more rent extracting than either stable non-democracies or stable democracies (see Treisman, 2007). Future research might examine these conditions/critical thresholds (age of democracy, political stability, etc.) after which the use of elections can work more effectively to limit rent extraction. It may well be the case that in non-democracies or new democracies, the uncertainty surrounding the sustainability of a democratic *modus operandi*, and hence the relative efficacy of other mechanisms of oversight, might mean that the magnitude of the incentives provided by the electoral context might be relatively

ineffective. Thus, focusing on the determinants of rent extraction in fragile democracies might provide some interesting insights into the more general conditions under which democratization and democratic consolidation might be linked to a net decline in rent extraction.

A second fruitful avenue for research might be to disaggregate the effects of rent extraction due to the private agenda of public policy-makers (the ‘grabbing hand’), from that caused by the demands of rent-seeking interest groups. As a large corpus of work on stakeholder capabilities has shown (starting with Olson, 1965, 1981), different interest groups have different abilities to overcome collective action problems, or more generally translate their latent preferences into effective demands. The effect of increased responsiveness to electoral control may therefore be more nuanced and ambiguous. Under certain conditions, increased responsiveness may result in the increased probability of capture by powerful interest groups, rather than voters in general. Thus, examining the conditions under which increased responsiveness (electoral incentivizing) benefits large latent groups (the average voter) – rather than increasing the power of pivotal interest groups – might provide more refined hypotheses regarding the conditions under which elections will minimize rent extraction (both due to the private agenda of public policy-makers and rent-seeking interest groups).

Apart from new areas of empirical investigation, it is also possible to test the empirical implications of the thesis using new and different data. Given the exploratory nature of the research agenda, the focus has been on establishing whether the macro-level implications (Chapter 4 and 5) and the micro-mechanisms (Chapter 5) of the models can robustly predict outcomes. Future research could take advantage of a growing number of

surveys on citizen perceptions of rent extraction, to examine whether these results hold using multi-level analysis, and hence a host of additional individual level control variables. However, given that grand political corruption is more likely to affect certain segments of the population, this type of approach needs to be treated with caution. Alternately, the use of case studies that examine the impact of institutional change and/or long term trends in the EDD/NEDD ratio could provide new qualitative data on the micro-causal mechanisms of the robust quantitative relationships. Examining whether the increase in the EDD/NEDD ratio of the UK in the 1980s changed perceptions of rent extraction, or whether electoral reform in New Zealand in the 1990s diminished perceptions of good governance, might yield some useful insights. In particular, elite interviewing of different key policy-stakeholders might be useful in gauging changing perceptions of grand political corruption.

## **7.8 What Have We Learned?**

While much remains to be done, this thesis has provided new insights into the determinants of rent extraction within a high-income democracy context, by importing the theoretical and substantive insights of the burgeoning literature on the economic vote, and adapting it to examine the role of rational retrospective evaluation on the incentives faced by office-holders to alter their level of rent extraction. Specifically, by developing a simple game theoretic extension of the decision-theoretic models, which motivate much of the economic voting literature, it became possible to deduce that contexts that generate a greater magnitude of retrospective evaluation of individual incumbent performance will incentivize electorally dependent office-holders to desist from rent extraction. The

implications of this theoretical analysis, and the assumptions about which institutions affect the economic vote, allowed for the development for two new explanatory variables of interest: (1) government extensiveness (the EDD/NEDD ratio); and (2) the individual performance weighting index for re-election. While each and every one of the components of these measures has been used as a dependent variable of interest before, the development of these combined measures, motivated by theory, produced very robust results.

In particular, the strength of these results, with respect to the high-income democracy subset of countries, suggests that the factors that determine rent extraction in complex policy-making environments may differ from other contexts. As more micro-level data becomes available on the perceptions of rent extraction, and hence the way in which these perceptions motivate incumbent officials, it will become possible to develop more refined and complex models. These will, hopefully, be able to account for even more of the variation in rent extraction, and how the strategic interaction of voters and office-holders in different contexts and time periods conditions these results. By extending the portable elements of the economic voting literature to the reaction of public policy-makers, this thesis has begun what will hopefully be a potentially useful line of investigation into the effects of the institutionally induced EoE on voter perceptions and public policy outcomes.

## Appendix A: Description and Details of the Dependent, Independent and Control Variables (By Chapter)

*Descriptive Statistics of All Variables (High-Income OECD Only)*

Chapter 2						
Variable	Observation	Mean	Std. Dev	Min	Max	Variable Type
Corruption Perceptions Index	23	2.16	1.57	0.26	5.77	Interval/Ordinal
Control of Corruption	23	1.88	0.95	0.74	3.66	Interval/Ordinal
Tickets	18	2.17	4.74	0.00	14.80	Interval
Age of Democracy	23	0.45	0.23	0.11	1.00	Interval
Economic Openness (Long-Term)	23	0.77	0.15	0.20	1.00	Interval
Geographic Latitude	23	41.50	25.35	-36.89	63.89	Interval
(Log) Per Capita Income	23	9.52	0.25	8.85	9.94	Interval
Education Enrolment	23	104.90	7.35	88.88	117.11	Interval
Ethnolinguistic Fragmentation	23	0.12	0.11	0.0025	0.37	Interval
Income Inequality	22	32.43	4.07	25.50	39.86	Interval
(Log) Population	23	2.51	1.65	-1.321	5.56	Interval
Democratization (Current)	23	1.17	0.25	1.00	1.83	Interval
Proportion of Pop 14-64	23	66.64	1.67	63.48	69.37	Interval
Proportion of Pop over 64	23	14.31	1.71	11.27	17.43	Interval
Economic Openness (Current)	23	68.90	38.09	18.75	188.98	Interval
Catholic (%)	23	43.05	38.37	0.10	96.90	Interval
Protestant (%)	23	32.52	35.59	0.10	97.80	Interval
Confucian Majority (Dummy)	23	0.04	0.20	0.00	1.00	Dichotomous
Latin America Dummy	23	0.00	0.00	0.00	0.00	Dichotomous
Africa Dummy	23	0.00	0.00	0.00	0.00	Dichotomous
Asia Pacific Dummy	23	0.04	0.20	0	1	Dichotomous
Time Since Independence (Years)	23	190.43	74.35	55.00	250.00	Interval

Source: The Author

Chapter 4						
Variable	Observation	Mean	Std. Dev	Min	Max	Variable Type
<b>Inverse of the Size of Government (%) (Size of the Private Sector)</b>	23	63.12	8.52	48.82	79.49	Interval
<b>Regulatory Quality</b>	23	1.37	0.36	0.60	1.90	Interval
<b>Non-EU (Dummy)</b>	23	0.35	0.49	0.00	1.00	Dichotomous
<b>EDD/NEDD (Additive)</b>	23	1.83	0.55	1.28	2.66	Interval
<b>EDD/NEDD Latent</b>	23	-0.01	0.86	-1.07	1.46	Interval
<b>Coordinated Capitalist Economies</b>	23	0.39	0.50	0.00	1.00	Dichotomous
<b>Government Effectiveness</b>	23	1.70	0.36	0.90	2.10	Interval
<b>Executive Oversight Index</b>	23	4.00	3.89	1.00	0.70	Interval
<b>Corruption in Political Life (% of Respondents)</b>	17	39.91	17.92	7.10	74.40	Interval
<b>Corruption in Family Life (% of Respondents)</b>	17	17.00	13.01	1.90	42.50	Interval

Source: The Author

Chapter 5						
Variable	Observation	Mean	Std. Dev	Min	Max	Variable Type
<b>Corruption is a problem (EU)</b>	15	73.00	7.22	61.0	85.0	Interval
<b>Corruption is a Problem (National)</b>	15	69.27	18.40	29.0	94.0	Interval
<b>Corruption is a problem (Regional)</b>	15	64.45	16.57	25.0	88.0	Interval
<b>Net Contributor to EU</b>	15	0.33	0.49	0.00	1.00	Dichotomous
<b>GDP Growth (%)</b>	15	2.27	1.07	0.38	4.46	Interval
<b>Founding Member</b>	15	0.53	0.51	0.00	1.00	Dichotomous
<b>Lost WW2</b>	15	0.11	0.32	0.00	1.00	Dichotomous

Source: The Author

Chapter 6						
Variable	Observation	Mean	Std. Dev	Min	Max	Variable Type
<b>Plurality</b>	23	0.30	0.47	0.00	1.00	Dichotomous
<b>Parliamentary</b>	23	0.91	0.28	0.00	1.00	Dichotomous
<b>EoE</b>	23	1.21	0.42	0.00	2.00	Ordinal
<b>EoE*EDD/NEDD</b>	23	2.34	1.42	1.28	5.23	Interval
<b>Federal</b>	23	0.26	0.44	0.00	1.00	Dichotomous

*Source: The Author*

#### Chapter 4

**The Regulatory Quality Indicator** is a sister indicator of both the Control of Corruption and Government Effectiveness Indicator (see Chapter 2 for details regarding its construction). As such, it is an interval measure that captures the level of regulatory density, meaning the extent of distortions and number of regulations that ranges from -2.5 (most distortionary and unnecessarily expansive regulations) to 2.5 (least distortionary and unnecessarily expansive regulations). As the Table below shows, the indicators' representative sources are clearly focused on measuring regulatory density in the manner understood by Duch and Stevenson (2008). In fact, many of the questions used to construct the index (such as whether foreign competition is treated equally, the existence of discriminatory regulations etc.) are very similar to those used by the Fraser Institute to measure the density of rent extraction used in the original Duch-Stevenson model (Fraser Institute, 2010).

*The Regulatory Quality Indicator*

Source	Who Was surveyed/asked?	Question/Assessment of	Source Type
Economist Intelligence Unit Risk-wire & Democracy Index	Expert Staff	'Unfair competitive practices; Price controls; Discriminatory tariffs; Discriminatory taxes; Excessive protections;'	Commercial Business Information Provider
World Economic Forum Global Competitiveness Report	Survey- Senior business leaders; domestic and international companies	'Administrative regulations are burdensome; Tax system is distortionary; Import barriers/cost of tariffs as obstacles to growth; Competition in local market is limited; It is easy to start a company; Anti monopoly policy is lax and ineffective; Environmental regulations hurt competitiveness;'	Non-Government Organization
Heritage Foundation	Expert Staff	'Foreign investment; Banking/finance;'	Non-Government Organization
Institutional Profiles Database	Expert Staff	'Ease of starting a business; Administered prices and market prices Competition: ease of market entry for new firms; Competition between businesses: competition regulation arrangements'	Government
Political Risk Services International Country Risk Guide	Expert Staff	'Investment Profile '	Commercial Business Information Provider
Global Insight Business Conditions and Risk Indicators	Expert Staff	'Tax Effectiveness How efficient the country's tax collection system is. The rules may be clear and transparent, but are they Legislation An assessment of whether the necessary business law s are in place, and whether there any outstanding gaps '	Commercial Business Information Provider

*Source: The World Bank (2011)*

*The EDD/NEDD Ratio by Country (OECD Only)*

Country	EDD/NEDD Ratio (Standardised Additive Measure)	EDD/NEDD Ratio (Confirmatory Factor Analysis)
Australia	2.60	1.22
Austria	1.45	-0.51
Belgium	1.33	-0.93
Canada	2.61	1.27
Denmark	1.49	-0.49
Finland	1.51	-0.40
France	1.33	-0.80
Germany	1.51	-0.11
Greece	1.40	-0.28
Iceland	2.52	0.90
Ireland	1.49	-0.39
Italy	1.28	-0.99
Japan	2.54	1.46
Luxembourg	1.46	-0.50
Netherlands	1.39	-1.07
New Zealand	2.56	0.70
Norway	2.45	0.47
Portugal	1.41	-0.59
Spain	1.47	-0.30
Sweden	1.39	-0.75
Switzerland	2.61	1.19
UK	2.66	1.44
USA	1.51	-0.50

Spearman rank correlation between the two measures=0.85

*Source: The Author*

## Chapter 5

The survey instrument used in this chapter is *Special Eurobarometer 245/Wave 64.3* ‘Opinions on Organized Cross Border Crime and Corruption.’ The survey interviewed 24,683 European Union citizens by member state and weighted for population. The findings of the survey are available at:

([http://ec.europa.eu/public\\_opinion/archives/ebs/ebs\\_245\\_sum\\_en.pdf](http://ec.europa.eu/public_opinion/archives/ebs/ebs_245_sum_en.pdf)).

The survey included an entire section whose aim was to generate comparative information on perceptions of rent extraction of different public institutions. Specifically, participants were asked to provide a response (Agree/Disagree/Don’t Know) to the following questions: Corruption is a Problem in [national institutions in our country, local institutions in our country, regional institutions in our country, within the institutions of the European Union].

At the time of writing the survey has not been replicated.

## Chapter 6

*EoE, EDD/NEDD Ratio, and Interaction Terms by Country (OECD Only)*

Country	EoE	EDD/NEDD (Baseline)	EDD/NEDD (Extended)	EoE*EDD/NEDD (Baseline)	EoE*EDD/NEDD Ratio (Extended)
Australia	2.00	2.60	3.61	5.21	7.21
Austria	1.00	1.45	1.45	1.45	1.45
Belgium	1.00	1.33	1.33	1.33	1.33
Canada	2.00	2.61	3.62	5.23	7.24
Denmark	1.00	1.49	1.49	1.49	1.49
Finland	1.00	1.51	2.51	1.51	2.51
France	1.00	1.33	2.33	1.33	2.33
Germany	1.00	1.51	2.01	1.51	2.01
Greece	1.00	1.40	2.41	1.40	2.41
Iceland	1.00	2.52	2.52	2.52	2.52
Ireland	1.00	1.49	2.50	1.49	2.50
Italy	1.00	1.28	2.15	1.28	2.15
Japan	2.00	2.54	3.41	5.08	6.82
Luxembourg	1.00	1.46	2.46	1.46	2.46
Netherlands	1.00	1.39	1.39	1.39	1.39
New Zealand	2.00	2.56	3.41	5.12	6.81
Norway	1.00	2.45	2.45	2.45	2.45
Portugal	1.00	1.41	1.41	1.41	1.41
Spain	1.00	1.47	1.48	1.47	1.48
Sweden	1.00	1.39	1.39	1.39	1.39
Switzerland	0.00	2.61	3.62	0.00	3.62
USA	1.00	2.66	3.66	2.66	3.66
UK	2.00	1.51	2.52	3.03	5.03

*Source: The Author*

## **Appendix B: The Socio-Economic Determinants of Rent Extraction Using Alternative Dependent Variables to the CPI (CC and Tickets) By Chapter**

This Appendix reports some of the most pertinent results found in the different chapters using either the CC or the Tickets instead of the CPI as the dependent variable of interest.

**Due to word limit only the most basic results are reported.** Overall, the results are very similar to the CPI with all major findings remain statistically significant. Where only a partial replica of a Table is produced ‘corr reg’ refers to the corresponding Regression Model in the original Table.

## Chapter 2

*Replica of Table 2.11 Rent Extraction and the Macro-Determinants in OECD/Non-OECD Countries*

	Dependent Variable					
	CC			GE		
Model Specification	(1) (GLM) Corr Reg 4	(2) (GLM) Corr Reg 5	(3) (GLM) Corr Reg 6	(4) (GLM) Corr Reg 4	(5) (GLM) Corr Reg 5	(6) (GLM) Corr Reg 6
Measure Score	Raw Score	Raw Score	Raw Score	Raw Score	Raw Score	Raw Score
<b>Age of democracy</b>	-1.78*** (0.66)	-1.95*** (0.56)	-0.59 (0.91)	-0.88*** (0.22)	-1.05*** (0.32)	-0.25 (0.27)
<b>Economic openness</b>	-0.0072** (0.0030)	-0.010*** (0.0027)	0.0011 (0.0059)	- 0.0037*** (0.0011)	-0.0045*** (0.0013)	0.0030* (0.0017)
<b>Latitude</b>	-2.73*** (0.87)	-1.76 (1.14)	-3.58** (1.60)	-1.51*** (0.35)	-1.23*** (0.45)	-0.73 (0.58)
<b>(log) Per capita income</b>	-0.73*** (0.23)	-0.47** (0.21)	-1.87* (0.59)	-0.38*** (0.089)	-0.30*** (0.10)	-0.60*** (0.17)
<b>School enrolment</b>	-0.013 (0.0080)	-0.012 (0.0073)	-0.013 (0.031)	-0.071* (0.0037)	-0.045 (0.0036)	-0.019** (0.00091)
<b>Sample</b>	All	Non-OECD	High-Income OECD	All	Non-OECD	High-Income OECD
<b>Number of Observations</b>	73	50	23	75	52	23
<b>Log-Likelihood</b>	-24.33	-16.14	-7.99	-24.92	-14.32	-7.20

*Robust standard errors in parentheses. \*\*\* denotes significance at the 1% level, \*\* denotes significance at the 5% level, \* denotes significance at the 10% level. As both the CC and GE are designed to approximate a normal distribution OLS is the most appropriate indicator. Note that the scores have been inverted so higher scores denote more corruption/less government efficiency. The Komonov-Smirnov test confirms this, as the hypothesis that the residuals are not normally distributed can be rejected at the 1% (pooled) and 5% levels (both sub-samples).*

*Source: The Author*

*Replica of Table 2.11 Rent Extraction and the Macro-Determinants in OECD/Non-OECD Countries*

	Dependent Variable: Tickets		
Model Specification	(1) (Censored) Corr Reg 4	(2) (Censored) Corr Reg 5	(3) (Censored) Corr Reg 6
Measure Score	Raw Score	Raw Score	Raw Score
<b>Age of democracy</b>	-27.11*** (5.00)	-2.84*** (1.00)	-17.33 (11.20)
<b>Economic openness</b>	-0.051** (0.0020)	-0.072*** (0.0020)	0.021 (0.090)
<b>Latitude</b>	-44.12* (23.07)	-83.71** (32.70)	-17.14 (22.93)
<b>(log) Per capita income</b>	-9.20** (4.60)	-8.45*** (1.22)	-3.19 (8.70)
<b>School enrolment</b>	-0.39* (0.23)	-0.40 (0.0025)	-0.028 (0.29)
<b>Sample</b>	All	Non-OECD	High-Income OECD
<b>Number of Observations</b>	62	44	18
<b>Log-Likelihood</b>	-229.2	-185.5	-35.1

*Truncated standard errors in parentheses. \*\*\* denotes significance at the 1% level, \*\* denotes significance at the 5% level, \* denotes significance at the 10% level. As the number of tickets cannot be negative but can approach infinity a truncated normal distribution, censored at 0, is utilized for the regression analysis.*

*Source: The Author*

**Chapter 4**

*Replica of Table 4.02 Extensive Regression Analysis (High-Income Democracies)*

	Dependent Variable: CC							
Model Specification	(1) (GLM)	(2) (GLM)	(3) (GLM)	(4) (OP)	(5) (OP)	(6) (GLM)	(7) (IRLS)	(8) (GLM)
Measure Score	Additive	Additive	Factor	Additive	Factor	Additive	Additive	Factor
<b>Higher EDD/ NEDD* DEM</b>								-0.12* (0.07)
<b>Higher EDD/ NEDD Ratio</b>	-0.40*** (0.08)	-0.36*** (0.08)	-0.86*** (0.26)	-1.49*** (0.29)	-2.66*** (0.72)	-0.31*** (0.10)	-0.0035*** (0.0032)	-0.24*** (0.06)
<b>High- Income Democracies</b>								-0.70** (0.310)
<b>Controls (as in Table 4.0)</b>	√	√	√	√	√	√	√	√
<b>Sample</b>	High- Income Dem	High- Income Dem	High- Income Dem	High- Income Dem	High- Income Dem	All	All	All
<b>Number of Observations</b>	19	19	19	19	19	57	57	57
<b>(Pseudo Log)- Likelihood</b>	-6.08	-6.07	-6.12	-41.69	-44.82	-19.81	NA	-22.85

*Robust standard errors in parentheses. \*\*\* denotes significance at the 1% level, \*\* denotes significance at the 5% level, \* denotes significance at the 10% level. See Chapter 2, Section 4.1.3, and Appendix A for details of variable descriptions).*

*Source: The Author*

*Replica of Table 4.02 Extensive Regression Analysis (High-Income Democracies)*

	Dependent Variable: Tickets				
Model Specification	(1) (Censored) Corr Reg 1	(2) (Censored) Corr Reg 2	(3) (Censored) Corr Reg 3	(4) (Censored) Corr Reg 6	(5) (Censored) Corr Reg 7
Measure Score	Additive	Additive	Factor	Additive	Factor
<b>Higher EDD/ NEDD* DEM</b>					-18.00* (9.41)
<b>Higher EDD/ NEDD Ratio</b>	-1.79** (0.78)	-1.67*** (0.62)	-5.34*** (2.33)	-6.39*** (9.38)	-54.09* (27.76)
<b>High- Income Democracies</b>					-2.25** (3.42)
<b>Controls (as in Table 4.0)</b>	√	√	√	√	√
<b>Sample</b>	High- Income Dem	High- Income Dem	High- Income Dem	All	All
<b>Number of Observations</b>	17	17	17	54	52
<b>(Pseudo Log)- Likelihood</b>	-43.41	-43.35	-42.73	-226.13	-224.47

*Robust standard errors in parentheses. \*\*\* denotes significance at the 1% level, \*\* denotes significance at the 5% level, \* denotes significance at the 10% level. See Chapter 2, Section 4.1.3, and Appendix A for details of variable descriptions).*

*Source: The Author*

**Chapter 6**

*Replica of Table 6.06: Rents, the Efficacy of Elections, and the EDD/NEDD Ratio in High-Income Democracies (Positive Test)*

	Dependent Variable CC		
	(1) (GLM) Corr Reg 1	(2) (GLM) Corr Reg 2	(3) (IRLS) Corr Reg 5
	Additive	Additive	Additive
<b>Multiplicative Effect I (EoE*EDD)</b>		-0.50*** (0.12)	
<b>Multiplicative Effect II (EoE*EDD)</b>	-0.67*** (0.10)		-0.078*** (0.08)
<b>EDD (Baseline or Ext.)</b>	-0.25 (0.12)	-0.20 (0.15)	-0.11 (0.10)
<b>EoE</b>	0.99 (0.97)	1.03 (0.87)	0.054 ( )
<b>Controls (as in Table 6.03)</b>	√	√	√
<b>Sample</b>	High-income OECD	High-income OECD	High-income OECD
<b>Number of Observations</b>	21	21	21
<b>Log-Likelihood</b>	-6.78	-6.50	NA

*Robust standard errors in parentheses. \*\*\* denotes significance at the 1% level, \*\* denotes significance at the 5% level, \* denotes significance at the 10% level. See Chapter 2, Section 4.1.4 and Appendix A for control variable descriptions.*

*Source: The Author*

*Replica of Most of Table 6.06: Rents, the Efficacy of Elections, and the EDD/NEDD Ratio in High-Income Democracies (Positive Test)*

	Dependent Variable: Ticket		
	(1) (Truncated) Corr Reg 1	(2) (Truncated) Corr Reg 2	(3) (IRLS) Corr Reg 5
<b>Multiplicative Effect I (EoE*EDD)</b>		-14.44*** (3.02)	
<b>Multiplicative Effect II (EoE*EDD)</b>	-15.03*** (2.99)		-6.34*** (1.04)
<b>EDD Baseline or Extended</b>	-9.89* (5.04)	-10.11* (5.17)	-4.15* (1.98)
<b>EoE</b>	8.10 (7.24)	7.24 (6.03)	2.95 (2.95)
<b>Controls (as in Table 6.03)</b>	√	√	√
<b>Sample</b>	High-income OECD	High-income OECD	High-income OECD
<b>Number of Observations</b>	16	16	16
<b>Log-Likelihood</b>	-54.78	-52.42	MA

*Robust standard errors in parentheses. \*\*\* denotes significance at the 1% level, \*\* denotes significance at the 5% level, \* denotes significance at the 10% level. See Chapter 2, Section 4.1.4 and Appendix A for control variable descriptions.*

*Source: The Author*

## **Appendix C Alternative Mechanisms of Oversight for NEDDS**

While it is beyond the scope of this thesis to examine the role of alternative mechanisms of oversight of NEDDs, it is useful to demonstrate the robustness of the baseline model's results by briefly examining whether these results hold, even in contexts where alternative mechanisms of oversight exist. The fact that the basic results do hold therefore increases the confidence one can have in the usefulness of the model in a variety of contexts.

As a large literature in positive political economy (especially the Congressional Dominance Literature; see Horn, 1995) has shown, NEDDs may be subject to a host of non-electoral mechanism of incentivization, which may work in a manner analogous to elections in order to incentivize career concerned rent-minimization, and the selection of higher competency incumbents. Let  $\phi$  be the probability that, due to the existence of non-electoral mechanisms, below-average competency NEDD policy-makers can be removed from office after the first period has ended if their level of rent extraction is deemed to be excessive; that is, a level of rents associated with an office holder with a below-average competency. This is because publicly-financed goods and services are a residual category of taxation after rents have been extracted (see expressions 3.01-3.11). As before, the competency of the non-electorally-dependent policy-maker is common knowledge at the end of the first period (see expressions 3.14-3.17). However, now the non-electorally dependent policy-maker's decision about the level of rent extraction is conditional on her anticipation of the fact that a rent-maximizing strategy might not be

optimal. Thus, the NEDD's budget constraint (3.16) becomes:

$$\beta\tau y - r_{j1} - \phi\chi\delta(R + \bar{r}) \geq 0 \tag{3.32}$$

Now differentiating the utility of NEDDs,  $w_j$ , subject to (3.32) only yields the corner rent-maximizing solution (3.16) in the special case when  $\phi = 0$ <sup>121</sup>, as the NEDD is now facing a trade-off between maximizing rents now, and possibly losing policy-making power in the second period; that is, (3.17) becomes:

$$\beta\tau y = r_{j1} + \phi\chi\delta(R + \bar{r}) \tag{3.33}$$

Tax revenues therefore controlled by NEDDs are allocated, taking into account the career concerns of the NEDDs. Obviously, if  $\phi = 0$ , then (3.33) is the same as (3.17)-  $\beta\tau y = r_{j1}$ . Thus, differentiating with respect to  $\phi$  yields the intuitive result that the more easily NEDDs can be removed from office, the more likely they are to pursue a rent-minimizing strategy.

However, while non-electoral, NEDD-specific, removal mechanisms may mitigate the rent-maximizing incentives of NEDDs, unless  $\phi = 1$ , such mechanisms will not be as effective as elections in incentivizing career concerned short-term rent-minimization. To see this, consider aggregate first period rents (3.24) when EDDs face

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<sup>121</sup> Assuming that  $\chi$ ,  $\delta$ , and  $R$  are otherwise able to induce career concerned rent-minimization amongst policy-makers.

elections and NEDDs face non-electoral removal mechanisms for poor performance:

$$r_{ij1} = (\alpha\bar{\tau}y - \chi\delta(R + \alpha\bar{\tau}y)) + ((1 - \alpha)\bar{\tau}y - \phi\chi\delta(R + \bar{r}(1 - \alpha)\bar{\tau}y)) \quad (3.34)$$

Unless  $\phi = 1$ ,  $|\chi\delta(R + \alpha\bar{\tau}y)| > \chi\delta(R + (1 - \alpha)\bar{\tau}y)$ , NEDDs will be marginally less career concerned than EDDs. Even when faced with alternative mechanisms of oversight, it is only under very restrictive assumptions that such mechanisms will provide as strong an incentive mechanism as the existence of regular elections. This conclusion is very much in line with the large body of literature. It suggests that while elections may not be sufficient to eliminate rent extraction, they are the cornerstone – or at least the essential prerequisite – for it, just as Olson (2000) argued that regular elections allow large latent groups to curb excessive rent extraction. While alternative control mechanisms, such as career progression, legislative oversight etc. (Weingast et al, 1988) might render non-elected policy-makers more accountable, such mechanisms may increase the power of narrow rent-seeking groups rather than voters in general (who are rationally ignorant of the specific activities of individual ministries). This means not necessarily aligning the interests of NEDDs with those of the bulk of voters, who rely on elections, to incentivize and select those office-holders most likely to be of a high competency.

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