



How Economists Help Central Government Think: A Survey of Economics in UK Central Government

Journal:	<i>International Journal of Public Administration</i>
Manuscript ID	LPAD-2017-2005.R2
Manuscript Type:	Research paper
Keywords:	economics and public policy, research utilization, economics training, sociology of economics

SCHOLARONE™
Manuscripts

**How Economists Help Central Government Think:
Survey Evidence from the UK Government Economic Service**

1. Introduction

The continuing rise of economics across central governments around the world potentially has an important role to play in how countries and international organisations think and operate.¹ At the time of writing, much of the world seems to be on a gradual road to recovery from the financial crisis but it can be asked: what role did professional economists play? Were they essential in finding a path out of Armageddon or were they culpable for not seeing it coming? In Europe, there are accusations that voters in the UK were misled about the likely economic costs of Brexit. If so, did the economics do what it could to clarify the situation? Elsewhere, China’s global reach continues to expand on the back of an economy that benefits from the market reforms of Deng Xiaoping. What might this say about the democratic foundations of modern capitalism? From the 1990s leading economists (like Amartya Sen, 1993; Richard Layard and at the OECD Angel Gurría, 2014) have called for re-orientation of economies towards human development, happiness and inclusion, but how have governments responded?

While economic research can be found on many topics relevant to public policy, there is much less research on how governments actually use economics save for a few reflections by leading figures at the sharp end (e.g. Stiglitz, 1998) and a few studies by other social scientists, with interests ranging from government administration through to professional practice and the use of research by policy-makers. This is perhaps surprising given Robert Nelson’s² observation in a review of professional economics (Nelson, 1987, p. 49) that “Most economists hope that their work will have an impact on public policy.” As he goes on to note “...few economists devote much time or effort to studying the mechanisms by which economic writings and research are translated into public policy...Many economists also know little about the roles of economists in government, including their roles as economic analysts in their own right...”. Such observations about knowledge of what professional economists do is probably at least as true today as it was when they were made some two and a half

¹ In 2013, there were approximately 1,700 economists employed as professionals in the UK and just over 17,000 employed in government in the US, though a minority of these were to be found in state employment.
² Nelson’s survey of economics within government is nicely complemented by two lectures given on the subject, one in Oxford (by Sir Robert Hall, 1955) and a second given nearly half a century later by Nobel Laureate (Joseph Stiglitz, 1998) as the American Economic Association distinguished lecture on Economics in Government. Hall deals with the (proper) place of the economist in government and concludes that economists in such a role must put themselves in the position of their minister who, in turn, is considering what would be in the country’s best interests. Stiglitz, by contrast, acknowledges the achievements of the public sector before going to identify reasons why Pareto improving policies are not always adopted and concludes by arguing for greater openness in government.

decades ago. The discipline itself is not very self-reflective of itself as a social, professional grouping and so this paper aims to fill an important gap by offering a glimpse into the use of economics within the UK government.

More precisely, the paper conducts and reports on what is the first research survey of central government economists working across the full range of central government departments in the UK. This differs from the reflections of senior figures in the field in that it focuses on the experience of hundreds of working economists whose roles and experiences can be expected to differ from leading academics brought in to lend their reputations to government action. Equally, this does not purport to be an external critique of economics in government – all the authors are economists with a strong belief that economics can make a valuable contribution to the ethos of effective public service. However, we also believe that now is a good time to examine and take stock of how economics operates in government, what this might mean for the profession and society more broadly.

The survey developed here, which coincided with the 50th anniversary of the UK's Government Economic Service (GES) in 2014 (Ramsden, 2015), focuses particularly on the use of micro-economics within the main departments of government. Bodies for organising government economists, similar to the GES, can be found in Canada, India and New Zealand and routine and reasonably extensive applications of economics, if organised slightly differently (neither the US nor the EU have counterpart bodies though the US employs economists across government in a manner similar to the UK), exist in many other countries. That said, the UK's GES is probably one of the oldest such organisations and has, in recent years, become more obvious, at least to professional economists, as a major (if not the largest) recruiter of economics graduates in the UK. It used to be said that economics was what economists do but, in the case of professional economists, there is no easy mechanism, as there is for research or teaching, for finding out what exactly this is, a fact that provides a primary motivation for this paper. As will become apparent, professional economics in government is neither a diluted version of research nor are the skills required always adequately provided by, or correspond closely to, what is taught on university syllabi. In the world of policy, there is a much greater need for problem solving rather proof replication, for creative synthesis from different scientific disciplines and problems in the world, and even for the interpersonal skills to engage with diverse stakeholders whose expertise and concerns are integral to the shaping of modern economies.

The rest of the paper is structured as follows. Section 2 articulates the underlying research questions and related literature as they relate to the activities of government economists, their use of research and their views about economics education. Sections 3 and 4 discuss the data and results, respectively, while sections 5 and 6 offer some further discussion and concluding remarks.

2. Research Context and Questions

Background

Before coming onto the questions of particular relevance to the structuring of our empirical survey, it will be helpful to say something about the different kinds of understandings about the use of economics that are in play as they help to put into context the findings of the paper. Most obviously, perhaps, there is the *history of economic thought* which serves to document the rise and fall of economic theories and ideologies while shedding light on some of the controversies that have emerged as ideas evolved(Backhouse, 2001; Fountaine,2016); Hoover,1997; Kirman,2010). Such analyses are often developed by economic historians and have tended to analyse the major trends and changes in government activity but have said much less about the mechanisms by which these changes have been facilitated. The work of economists employed by central governments, though often confidential, constitutes an important if under assessed mechanism by which economic ideas influence government behaviour. Secondly, there are the biographical *reflections by economists* themselves about the nature of economics in government (Basu (2015); Galbraith,1981; Portes,2012). These are often produced by senior figures in the profession, are also somewhat sparse in number, but nonetheless provide some useful insight into issues associated with the use of economic advice at the highest levels of government. Our work complements these personal assessments, by taking a quantitative look at routine activity that happens at all levels of government not just work conducted by academics often seconded into to giving advice at a high level. Thirdly there is what might be called a more general *political economy* approach that looks at the diffusion and success of ideas in government from the perspectives of power and persuasion (Chwieroth,2013). Such research is often conducted with the aid of standard economic tools of analysis and is often done in a spirit somewhat critical of the efficacy of collective action. Our approach is not intended to be critical in this sense but rather accepts a need for analysis in support of government action. Finally, there is beginning to emerge a research literature that sheds light on what government (and other) economists do drawing on ideas and methods to be found in work on the *sociology of professions*. This approach has the merit of being almost completely external both to economics and government, is conducted by academic sociologists using interviews, archival and secondary data and has the scope for offering a non self-reflexive insight though it does so through the lens of its own theoretical *agendae* which do not necessarily give answers to questions that might interest governments or economists (see for instance Eyal and Buchholz,2010); Fourcade,2006); Fourcade et al (2006); Hirschman and Berman,2014). Our paper can be regarded as a contribution to the understanding of what professional economists do through our main theoretical engagement centres around the use of economic theory in a professional setting outside of research. In this regard, we think this is one of the few papers to document an important mechanism by which economic thinking has an increasingly significant impact on government behaviour.

Research Questions

When academic economists discuss economics in government, there is a tendency to do so from the perspectives of teaching or research. While understandable, it is questionable whether this is sufficient to understand how economics, as a form of professional knowledge, is actually used in government. It is clear, for one thing, that professional economists do not generally either research or teach any more than professional psychologists, lawyers or doctors research or teach as a primary element of their professional activities. Our working hypothesis at the outset, was that professional economists apply their training to novel policy challenges as they arise on a daily basis. Quite often, a government economist might be asked to provide some briefing for a departmental spokesperson and given only a few hours to do the job. This might involve finding some data, putting together a short, economically informed, discussion of issues and couching the whole analysis in a manner that will be understood by ministers, the media and the general public. The timescales in government are certainly very different and are driven by the tasks in hand, and these, in turn, shape what it is that practitioners do. But perhaps most significantly, this activity raises questions about the economic ideas that are, in fact, used. Furthermore, preliminary discussions with colleagues in government, and some of the literature, suggests that only a proportion of what is taught and learned at university is actually used.³

As a result, and to understand more about the economics found helpful in routine central government work, a series of questions about a number of tracer economic concepts were developed. These concepts were based on distinct economic paradigms (which we label neo-classical, informational (following Stiglitz,2000) and behavioural) and methods of analysis (econometrics, theory, qualitative interviews). Tracer examples are used in qualitative research – particularly by health professionals – and our use of the approach provides one way of trying to understand the particular ideas and bodies of knowledge that are deployed in practice. However, we have also limited ourselves to the use of micro-economic concepts as we wished to survey economists working across the range of government activity; macro-economics tends to be concentrated in a relatively small number of departments (primarily Treasury, Central Bank and Business). In addition, and to understand what professional economists do, as opposed to how they think, we also asked about methods of analysis used, daily activities undertaken and groups with whom economists worked.

Our second, related, theme concerns the use of academic research in government. Here we hypothesised, following particularly work (by Landry and colleagues,2003), that both organisational variables and personal characteristics might plausibly be related to research use. Organisational

³ In addition, it was emphasized that in job interviews, students today often have difficulty in demonstrating their ability to use economics. The concepts of incentives, opportunity cost and tradeoffs were mentioned to us by a couple of senior economists as being ones they highlighted to junior economists that they should focus on.

factors might shape demand for research in government for a variety of reasons. Departments might have particular cultures associated with the use of research and the way in which economists are organised within a department may also play a role. It is possible, for example, that creating a specialist unit within a department allows for greater emphasis on work that has significant economic content. In terms of personal characteristics, the current GES requirement is that entrants have half or more of at least an upper second honours undergraduate degree in economics, though a significant minority also have postgraduate qualifications. If postgraduate training provides more direct exposure to research, then it would be reasonable to expect that research utilization is also related to training.⁴ To explore whether these factors and characteristics are associated with research use, we construct linear regression models of the form:

$$y_i = a + \sum_k \beta_k \cdot x_{i,k} + \varepsilon_i$$

where y_i , the dependent variable, is a measure of research use or perceived value and the covariates, $x_{i,k}$, are measures of organisational factors and personal characteristics. We also include controls for job role and seniority, in case these affect research use, and use ε_i to denote the error term. The models estimated use both cardinal and binary dependent variables and we therefore report OLS and probit models, as appropriate.

The third and final set of questions sought to explore issues to do with education and training. Discussions on this topic have for some time been overshadowed by a perception that the best training for professional economists might, in some way, be different to that offered by the best university courses. In the early 1990s, the Education Committee of the American Economic Association commissioned and published some research into this topic but there has been little research or action taken since. Indeed, if anything, the discipline has become more universally technical with most undergraduate courses now offering quite technically demanding options in the final year of study. Our study therefore provides an opportunity to determine whether, a quarter of a decade on and in a different setting, the concerns some expressed about the relevance of university teaching still apply. We ask about, and report on, educational status and involvement in training at work but focus particularly on answers to questions about possible changes to education and working practice.

In short, we look at what government economists do through the lenses of activities, research use, and training of GES members. Apart from the emphasis on micro-economic ideas and analysis indicated above, this means that we do not attempt to study economics as used by civil servants who are generalists or specialists in other areas. Nor do we cover the use of economics in external bodies –

⁴ Discussions with professional colleagues suggests that the connection between professional activity and training varies considerably between courses.

such as regulatory agencies or local regional authorities. With these caveats in mind, we turn to the data.

3. Data

Survey respondents were members of the UK Government Economic Service, established in 1964 by Sir Alec Cairncross (1981). It comprises a body of nearly 2,000 professional economists who work across all the main fields of government, which makes it the largest recruiter of economists in the UK. Members of the GES are specifically employed to apply economics to the problems of government and though individual members may become involved in other work, and non-GES members may use economic analysis, GES members are the only professional group of civil servants with this particular remit.⁵ From a modest beginning, with a focus in HM Treasury, policy economics has, over the past five decades, spread into all the main areas of central government activity.

The data used here were developed with the aid of a survey of GES members, designed in 2011 and conducted in February 2012. The questions themselves were developed and piloted with the help of some 20 government economists, who either completed a draft questionnaire or attended a focus group meeting to discuss it. The survey instrument was delivered to all members of the GES and was available for completion online over a two week period. This resulted in a unique dataset comprising results from approximately 550 individuals and a response rate of around a third is arguably relatively good for organisational surveys of professional groups. Economists answering the questionnaire were able to skip questions if they so choose and the usable responses for questions are often, as a result, in the high 400s. As indicated in the (online) appendices, responses were received from across all areas of government.⁶ However, we are aware from the data and discussions with GES, of a possible sample bias towards responses from those with a post-graduate qualification. Educational status is often not empirically significant in our analyses, probably because job roles are more important, but we include the variable in analysis where it is, or might be, relevant. A selection of sample characteristics is available in the online Appendix B.

4. Results

To understand some of the activities and thinking of professional economists, we turn to Tables 1-3 which summarise the results of questions about concept use, methods employed, and groups worked with. In terms of concepts used on a monthly basis, the top three concepts across Table 1a are, in rank

⁵ Other professional groups cover science, statistics and social science.

⁶ See Table B5 in Online Appendix B.

order, incentives, trade-offs and supply and demand. This is consistent with the view that ideas from the neoclassical core of micro-economics are indeed widely used within central government in the UK. However, there is also evidence that some ideas are used more frequently than others. For example, just over a third of our sample reported using the concept of production functions less than once a year. In addition, at least one fifth of respondents also reported using less frequently than annually concepts of complementary goods, substitute goods, and consumer or producer surplus. So there is some evidence that *neo-classical* economics in professional use is not used on a ‘lock stock and barrel’ basis, but rather that some ideas are used much more frequently than others.

[Tables 1a and 1b about here]

It is also clear from these data that concepts more closely associated with *informational* economics are used less frequently than those drawn from the neo-classical core. However, considering mentions of use at least twice a year, only strategic interaction was mentioned by less than half of respondents, so on an annual basis, the tracer concepts for informational economics seem also to be widely used. Concepts from behavioural economics clearly take up the rear, as might have been expected given the relative youth of this branch of the discipline. Nonetheless, we note that some 49% of respondents did report using either ‘nudge’ or ‘framing’ at least twice a year. Given the high profile of this paradigm in the period prior to the survey, it is possible that the proportion will be particularly prone to variation over time. Nonetheless, on an annual basis, some behavioural concepts are used by at least half of the respondents, which is not something that might have been predicted even five years ago.

It has been suggested to us that welfare economics and cost-benefit analysis are predominant in professional economics and the data are consistent with this. Furthermore, the widely used concepts derive from all three paradigms studied. Table 1b adds to this picture by presenting the results of a principal component analysis of economic concept use. In this case, the first component represents a generic factor, based on most components, as is often the case in dimension reducing techniques. The second and fifth components are, we suggest, clearly neo-classical. However, the third component picks up what we might call positive motivation issues – happiness and altruism are the most important variables - while the fourth component appears to be another neo-classical component, though one associated with lower usage of concepts from informational economics. These interpretations are essentially descriptive, given the nature of principal components techniques, but they show how concept use varies within our sample – some economists use behavioural concepts, en masse, more than others while others focus on a narrower set of neo-classical ideas.

For evidence about the activities of professional economists, Table 2a provides an indication of some of the methods and processes used. The three methods in rank order are, synthesising evidence, use of published econometric analysis conducted by others, and cost-benefit analysis. The ranking is interesting as it would not be obvious from a cursory glance of the contents of a modern economics

textbook or course curriculum. Cost-benefit analysis does not have the prominence it might once have had in teaching or research and yet it remains a core part of professional practice. In terms of processes used, Table 2b indicates that there is evidence that respondents have significant working connections with other civil servants, as well as economists outside of government. In order of importance, respondents also have connections with the business community, 3rd sector representatives, and representatives of consumer groups. While there is considerable variation between individuals in terms of their interactions, overall it seems that policy economists have working contacts with a wide variety of stakeholders. Such involvement with non-economists would seem to be much greater than might be the case for academic counterparts either in research or teaching.

[Tables 2a and 2b about here]

To help understand how different approaches vary together, Table 3 reports the results of a principal components analysis of 11 approaches used by GES members. Using standard rules of thumb for interpretation we find five components in these data.⁷ The first component is a general technical cluster of methods, the next three relate to cost benefit analysis in conjunction with other approaches – interviews, experiments and evidence synthesis, whilst the final component appears to pick out a pattern of use which is relatively high on theory but relatively low on use of published econometric results. These results confirm the importance of cost-benefit analysis and suggest that there is some variation in the manner it is used with other methods.

[Table 3 about here]

Our next results concern the use of research by professional economists. Table 4 presents a series of probit models in which the use of economic research is a function of personal characteristics and organisational variables conditional on seniority and job role.⁸ In the full model, having a post-graduate qualification is positively, though not significantly, related to the use of economic research. Evidence relating to organisational structural characteristics is mixed. The location of economists in a specific unit is positively related to the use of economic research but the coefficient is not statistically significant. So there is some support, albeit very modest, for the idea that organising economists in a specific unit facilitates their use of research.

⁷ Principal component analysis is a non-statistical dimension reduction technique often used in economics to construct price indices but here we use to ask, in effect, whether there are different clusters of approaches. From that perspective the application provides a picture that allows for heterogeneity between different groups of economists.

⁸ An analogous model for the use of publications by the Institute of Fiscal Studies (IFS) is presented in online Appendix A, Table A1.

[Table 4 about here]

Moreover, it is worth emphasising the fact that causality is not established by this weak association as there may be a selection effect in play - those professional economists who particularly want to use research in their work may actively seek to work in departments with a specific unit for economists. There is, nonetheless, evidence that the department is related to research use – three departments are significantly negatively associated with research use.⁹

Expecting there to be such variation, we also asked directly about some of the potential barriers to the use of research and the results appear in Tables 5. Some 40%-50% of respondents agreed or strongly agreed that, in order of importance, relevance, practicality and timeliness were problems in finding published economic research suitable for their needs. A χ^2 test indicates that the distributions of responses for these barriers are statistically distinct. In short, our results seem to suggest that structural features to do with policy and research are important inhibitors of knowledge utilization.

[Table 5 about here]

Finally, we report answers to a set of questions about possible changes that might help professional economists in their work. In Table 6a, the top three items mentioned as priorities for additional training are, in descending order of importance, evaluating econometric work by others, presenting economics to different audiences and understanding implications of institutions for policy implementation and effectiveness. It is also worth noting (see Table 6b) that just over half of the respondents agree that more interaction with those affected by policy might be desirable.

[Tables 6a and 6b about here]

5. Discussion

In considering further these findings, we draw on both the results and personal experience to offer some reflections on the nature of economics in government and implications for teaching and research. A significant proportion of working economists is employed in government in the UK and they would seem to make a contribution to the thinking and working of government not just by being bright and numerate graduates, but also by applying their economic training. This is a profound change since the time when the GES was founded and had just over 20 workers housed in HM

⁹ Six departments are significantly negatively associated with research use when we use IFS publications as a measure - see Table A1 in online Appendix A. Again some caution has to be taken when interpreting these results – in at least one case (Work and Pensions) the positive association is likely to reflect the particular relevance and coverage of IFS publications for its work – and the absence, in the UK at least, of any obvious competition.

Treasury. The scale of employment is several degrees smaller than in the USA but the work of the GES nonetheless emphasises that economics is an important contributor to government thinking. Other countries, and international bodies, may organise things differently but, nevertheless, find ways to access economic advice. There is no central economic service in the EU, for instance, which has a civil service more closely derived from administrative law traditions that prevail in continental Europe. It does, however, have departments and advisors that specialise in economics analysis. For many low- and some middle-income countries, the research conducted by the World Bank is important too. This spread of economics has taken place gradually, over many years and many different political regimes, which suggests that the drivers are secular and technical, or at least reflect an emerging consensus about how policies should be developed and evaluated.

Our approach has focused on the doings and thinking of central government economists in one country. It is, we would suggest, the analysis that economic concepts enable economists to do, and the ability for that analysis to be, if not value-free, then at least useful to parties of different persuasions, that has helped propel the use of economics within government. Some political scientists have argued that consensus within economics has contributed to the uptake of economic ideas by governments and economists themselves might point to issues of rigor and scientific method. Generality is much valued in economic analysis in a way that does not apply in some other disciplines, where the particularities and nuances of a specific situation can be given considerable weight. However, even generality may not always be a blessing – we have seen evidence that research may not be used if it is not deemed sufficiently relevant to particular problems in hand. One could argue, furthermore, that such a gap will always be difficult in sciences where the results of research are advice, rather than objective facts.

The use of tracer concepts helps to identify some of the economic concepts responsible for, and part of, this consensus. There is much more that could be done but as far as we know this is the first attempt to determine the extent to which economic ideas are used in this way. Neo-classical ideas stand out as being core to professional work and relatively easy to track but the approach does not have a monopolistic hold over the discipline. Ideas from two other traditions (one recent) indicate that alternative paradigms also make a contribution and that the concepts used by professional colleagues continue to evolve. Informational economics, it seems is useful in practice as well as in academic research. It remains to be seen whether behavioural economics will be a significant and permanent addition to the practitioner's tool kit but the idea does seem to have taken hold, perhaps reflecting the internet's capacity to accelerate the dissemination and adoption of new ideas. Behavioural economics might be seen as challenging the traditional emphasis on rationality but in practical settings it appears to be enriching the set of tools and ideas available to professionals. This helps to make an important point about economic ideas in general – namely that useful insights can come from, and be integrated

with, ideas from a range of different paradigms.¹⁰ Ideas that seem to be competitors from an academic perspective can in fact be complementary in practice. Potentially this is our single most important finding, the recognition of which could have significant impacts on the way economics is taught.¹¹

Professional practice, we have also found, is not a watered down version of teaching or research. It is fundamentally a problem driven occupation, where the ability to apply a range of concepts to novel problems and issues is key. In turn, this requires synthesising insights from empirical studies and theory, and the ability to be a discerning and critical consumer of both. At the same time, the practitioner also needs to be a skilled communicator, working with representatives from different sectors in the economy, as well as the various professions and levels in government.

We asked our respondents how, with the benefit of this experience, they might reflect on the best education for economists (see Anand and Leape,2012) and there is a sense that professional life is something of a surprise to many, following on from their university training. One respondent put it quite succinctly when he said his economics course taught him how to make a car whereas what he wanted for his current job was a training that taught him how to drive a car. There is an important distinction between skill and understanding being made here and the point was well made. In talking to senior economists in government, we found that one of the difficulties new economists have on entry to the service is in applying general economic principles to particular problems. This is a skill very different to model building but one that has, nonetheless, to be taught and practised. Furthermore, the need to work to a political mandate means that there are limits to where and how economic analysis contributes and it is not always possible to predict where these constraints will bind. For example, the allocation of funds to different departments is a relatively political decision whereas priority setting within health-care (for example through clinical trials) *is* increasingly informed by health economics. We do not argue that all courses should, or are likely, to focus on application, but equally we believe there is a market need not yet being addressed - with the possible exception of the MPA degrees which have existed for some time in the US and are now beginning to achieve an international foothold.

We have also been interested here in the use of research by government economists though, for the most part, it is not research which is the primary role, but rather being a critical consumer. Apart from anything else, the timescales of government rarely permit new research to be conducted by civil servants. The models of research valuation and utilization that we estimate suggest that personal characteristics, including the possession of a post-graduate qualification, have only a modest

¹⁰ This can be contrasted with the Kuhnian picture of scientific paradigms which suggests that individuals affiliate to one set of ideas or another.

¹¹ Indeed, there is growing discussion of how mainstream approaches may become more open to other skills and perspectives. See also the the GES explore statement at <https://quarterly.blog.gov.uk/2017/08/08/economics-in-government-more-open-more-diverse-more-influential>.

association with research utilization. On the other hand, a relatively robust finding is that the department in which an economist works can be an important factor. This might be because some government departments have a leadership which favours research, but equally it could be that in some areas there is less research relevant to the particular policies being addressed. The fact that lower volumes of relevant research are associated with areas like transport and the environment suggests that some areas are more likely to have research that could be relevant to their needs. Communities, environment and transport all have a local, geographical aspect to them which means that research produced outside the UK may be less relevant than in other cases such as health – where at least the underlying biological mechanisms have a high degree of universality. If that is the case, there might be an argument for giving priority to funding topics that are of particular national interest. Our data do not enable us to identify the different reasons for variations in research use across departments, though feedback on our results suggests that senior government economists do look to counterparts in academia for research inputs, and these connections appear to be made on an area by area and personal basis.

In sum, and returning to the contexts in which the study is set, it seems possible to make the following observations. The history of economic thought has almost never focused on the economic ideas and practices used by working professional economists. Our study suggests that practice can be seen as a kind of *mille feuille* requiring the use of ideas developed both in the 19th and 20th centuries while the rapid uptake of behavioural economics by younger economists at the same time suggests a discipline in the process of fundamental change. Furthermore, there is evidence of mismatch between the relevance and importance of concepts in theory and teaching on the one hand, and those concepts used on a daily basis by professionals. The concept of surplus, derived from supply and demand, appears not to be used to the degree that theory or teaching might suggest and much the same could be said about game theory when compared with its close relative, informational economics.

Beyond this, the field of political economy, which one might expect to contain diverse significant theories of government, though in fact emphasises the expression of self-interest through rent-seeking and the concept of regulatory capture, barely seems conceptually rich enough to guide governments in the promotion of the collective goals which their electorates mandate. Likewise accounts of the economic functions of government that focus on competition, externalities, public goods, contract law, income redistribution and macro-economic stability understate the inevitable role of the state in shaping preferences through public schooling or the steering of the economy through its activities in support of infrastructure, regions, technological innovation, business in general, and the provision of social insurance. From a sociological and professional perspective, perhaps our most important finding concerns the mismatch and sense of surprise that a significant number of economists have when entering professional practice following university training. (The profession is not unique in this

regard - for example in the past medical school training has often completely ignored paediatric and mental health training needs of would-be general practitioners focussing instead on the skills required to be a surgeon or hospital doctor.) The global financial crisis of 2008-9 helped to raise the question the question of how professional economists should be trained though no consensus has emerged on the appropriate response – a significant number of economists in this survey believe, for example, that a greater appreciation of economic history would help, but others do not.

6. Summary Remarks

The paper has sought to shed some light on how government uses economic analysis to help it solve the problems it faces on a daily basis. Various literatures including history of economic thought, political economy, public management and the sociology of professions have an important stake in this question though there is little by way of systematic research on what professional economists working in government actually do and the challenges they face. This study addresses the gap and provides evidence that supports four points.

- (i) Firstly, government economists use a range of concepts and tools developed throughout the subject's history. Neo-classical ideas are still valuable but they are used alongside informational economics and, increasingly, ideas from behavioural economics. The economics canon is not fixed and in the case of behavioural economics, the work of the 'nudge unit' in the Prime Minister's office has arguably helped to promote and advance the academic subfield itself.
- (ii) The portfolio of job tasks that government economists undertake is not reflected well in university curricula giving rise to concerns that professionals are not in every regard adequately prepared for the tasks actually involved. The fact, for example, that synthesis is the most wide-spread activity does not clearly map onto university curricula where for the most part, analytical skills are prioritised.
- (iii) About half of the respondents in our survey of over 500 professional economists felt that practicality and relevance were problems in finding research on which they could draw. This indicates a need for different kinds of economics research which, in turn, given the importance of academic freedom, suggests a need for different models of research funding as well as long term relationships between researchers and professionals.
- (iv) Economics has come, for a significant number, to be a profession in which the focus is not on the production of new research but rather the application of economic thinking to a range of public sector issues on a daily basis. It is neither a watered down version of

research though being a critical consumer of research is important. Neither is it teaching, though explanation (to non-economists) is a critical aspect of the job. Rather it is emerging into an important new global profession that intermediates the production and consumption of economic ideas and analysis.

Economics has become the lingua franca of public policy and for that reason, the professional practice of government economists merits further study. It is hoped this study will help open dialogues, not just between governments and universities but also more widely about the kinds of analysis, assumptions and judgements that are and should be made on our behalf.

References

- Anand, P., and Leape, J. (2012). What economists do – and how universities might help, ch 3 in *What's the Use of Economics?*, Coyle D (ed) London, LPP
- Backhouse, R. E. (2001). How and why should we write the history of twentieth-century economics? *Journal of the History of Economic Thought*, 23 (2), 243-51
- Basu, K. (2015) *An economist in the real world*, MIT Press, Boston
- Buchanan, J.M. (1967) *Public finance in democratic process: fiscal institutions and individual choice*, UNC Press
- Cairncross, A. (1981) Academics and policy makers in *Changing Perceptions of Economic Policy: Essays in Honor of the Seventieth Birthday of Sir Alec Cairncross*, ed F Cairncross, New York, Methuen
- Chwieroth, J. M., (2013). "The silent revolution:" How the staff exercise informal governance over IMF lending. *The Review of International Organizations*, 8(2), pp.265-290.
- Eyal, G. and Buchholz, L., (2010). From the Sociology of Intellectuals to the Sociology of Interventions. *Annual Review of Sociology*, 36, pp.117-137.
- Fountaine, P. (2016) Other histories of recent economics; *History of Political Economy*, 43 (3), 373-421
- Fourcade, M., (2006). The construction of a global profession: The transnationalization of economics. *American journal of sociology*, 112(1), pp.145-194.
- Fourcade, M., Ollion, E. and Algan, Y., (2015). The Superiority of Economists. *The Journal of Economic Perspectives*, 29(1), pp.89-113.
- Galbraith, J. K. (1981) *A Life in Our Times*, Boston, Houghton Mifflin
- Gurría, A., 2014. Inclusive growth, jobs and trust. *Organisation for Economic Cooperation and Development. The OECD Observer*, p.6.
- Hall, R. (1955) The place of the economist in government, *Oxford Economic Papers*, VII (2): 119-135.
- Hirschman, D. and Berman, E.P., (2014). Do economists make policies? On the political effects of economics 1. *Socio-Economic Review*, 12(4), pp.779-811.
- Hoover, K. D. (1997). Econometrics and reality, University of California Davis Working Paper 97-28
- Kirman, A. (2010) The economic crisis is a crisis for economic theory, CESifo Economic Studies, 56 (4), 498-535
- Landry, R. and Lamarr, M. and Amara, N. (2003). The Extent and Determinants of the Utilization of University Research in Government Agencies, *Research Policy*, 32 (2), 192-205
- Layard, R., (2011) *Happiness: Lessons from a New Science*, Penguin, UK

- 1
2
3 Nelson, R.H. (1987). The economics profession and the making of public policy. *Journal of*
4 *Economics Literature*, **25** (1), 49-91
5
6 Portes, J. (2012). Economists in government; what are they good for?
7 <https://www.niesr.ac.uk/blog/economists-government-what-are-they-good> (accessed
8 [5/12/2017](https://www.niesr.ac.uk/blog/economists-government-what-are-they-good))
9
10 Ramsden, D. (2015). The first 50 years of the Government Economics Service, lecture given on April
11 27 2017 [https://www.kcl.ac.uk/sspp/policy-institute/news/assets/Ramsden-transcript-](https://www.kcl.ac.uk/sspp/policy-institute/news/assets/Ramsden-transcript-270415.pdf)
12 [270415.pdf](https://www.kcl.ac.uk/sspp/policy-institute/news/assets/Ramsden-transcript-270415.pdf) accessed 5/12/2017)
13
14 Sen, A.K. (1993) Capability and wellbeing, in *The Quality of Life*, (eds) Sen, A. K. and Nussbaum, M.
15 Oxford, Oxford University Press
16
17 Stiglitz, J. (1998). Distinguished Lecture on Economics in Government: The Private Uses of Public
18 Interests: Incentives and Institutions, *Journal of Economic Perspectives*, 12 (2), 3-22
19
20 Stiglitz, J. E. (2000). The contributions of the economics of information to twentieth century
21 economics, *The Quarterly Journal of Economics*, **115** (4), 1441-1478
22
23 Summers, L. H. (1999). Distinguished lecture on economics in government: reflections on managing
24 global integration, *Journal of Economic Perspectives*, 13 (2), 3-18
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

Tables

Table 1a: Use of neoclassical and welfare / behavioural / informational / game-theoretical economic concepts

	At least monthly	At least twice a year	At least annually	Other/ Never	N
<i>Neoclassical Concepts</i>					
Opportunity Cost	69.4%	18.9%	7.5%	4.2%	504
Tradeoffs	77.8%	13.8%	4.4%	4.0%	499
Marginal Values (e.g. distinct from averages)	63.4%	22.3%	9.2%	5.2%	502
Complementary Goods	24.3%	28.0%	23.7%	23.9%	493
Substitute Goods	29.9%	29.3%	20.4%	20.4%	491
Production Functions	16.7%	23.4%	24.2%	35.7%	484
Efficiency	68.6%	20.4%	7.0%	4.0%	500
Externalities	65.0%	22.0%	7.8%	5.2%	500
Incentives	79.7%	13.4%	3.2%	3.8%	502
Perverse Incentives	64.1%	20.7%	7.6%	7.6%	498
Supply and Demand	75.6%	15.4%	6.0%	3.0%	499
Consumer or Producer Surplus	29.8%	28.4%	21.0%	20.8%	490
Market Equilibrium	40.0%	27.3%	18.8%	13.9%	495
<i>Welfare / behavioural / informational / game-theoretical concepts</i>					
Informational Asymmetries	48.8%	32.0%	10.9%	8.3%	494
Moral Hazard	35.2%	38.4%	12.8%	13.6%	492
Adverse Selection	30.9%	35.3%	18.0%	15.8%	488
Risk Aversion	44.8%	32.2%	10.8%	12.2%	491
Signaling Behavior	25.1%	36.4%	18.1%	20.4%	486
Discounting	64.7%	20.8%	7.7%	6.9%	495

Pareto Improvements	19.6%	30.5%	23.3%	26.8%	486
Strategic Interaction	20.2%	24.1%	21.2%	34.4%	485
Reciprocity	6.8%	17.6%	25.1%	50.5%	483
Altruism	8.5%	14.4%	27.7%	49.5%	481
Nudge or Framing	20.0%	28.7%	20.4%	30.9%	485
Biased Decision-Making	17.8%	25.3%	22.8%	34.0%	482
Happiness	8.0%	22.7%	22.3%	47.0%	485

Table 1b: Use of Tracer Economics Concepts: Loading Scores for First Five Components

	Component 1/ (Generic)	Component 2/ (Neo-classical)	Component 3 (Positive Motives)	Component 4 (Efficiency / Low Information)	Component 5 (Marginal Values)
Opportunity Cost	0.1742	-0.0938	-0.2625	0.2586	0.288
Tradeoffs	0.1612	-0.1684	-0.314	0.1998	0.239
Marginal Values	0.1732	0.1034	-0.1902	0.0968	0.4112
Complementary Goods	0.1898	0.3892	0.0356	0.0727	-0.2387
Substitute Goods	0.1894	0.3946	0.0093	0.0659	-0.289
Production Functions	0.1495	0.3303	0.1297	0.0293	0.2789
Efficiency	0.1829	-0.0327	-0.1942	0.3185	-0.11
Externalities	0.2278	-0.0272	-0.2185	0.1093	-0.1248
Incentives	0.2061	-0.1894	-0.2482	0.1213	-0.3462
Perverse Incentives	0.2017	-0.2513	-0.1321	0.0491	-0.3351
Supply and Demand	0.1628	0.2209	-0.0985	-0.0387	-0.056
Surplus	0.1881	0.3205	-0.0818	0.0538	-0.1114

Market Equilibrium	0.1764	0.3668	-0.0109	-0.1175	0.0557
Informational Asymmetries	0.2481	-0.1195	-0.051	-0.2459	-0.1077
Moral Hazard	0.2325	-0.1535	-0.0062	-0.3864	0.0142
Adverse Selection	0.2458	-0.1217	-0.0009	-0.3655	0.0322
Risk Aversion	0.22	-0.0855	-0.0172	-0.3032	0.1324
Signalling Behaviour	0.2166	-0.0993	0.1299	-0.2727	-0.0437
Discounting	0.1862	-0.0236	-0.2173	-0.0046	0.2316
Pareto Improvements	0.2109	0.0095	0.034	-0.0645	0.1881
Strategic Interaction	0.1967	0.0473	0.1879	-0.0569	0.0302
Reciprocity	0.1908	-0.0431	0.3671	0.1012	0.1573
Altruism	0.1881	-0.0979	0.3556	0.1858	0.0988
Nudge and Framing	0.1894	-0.1862	0.255	0.1629	-0.171
Biased Decision Making	0.1978	-0.1023	0.2702	0.1622	-0.0633
Happiness	0.1479	-0.1402	0.3073	0.3316	0.0644
Eigenvalues	9.94	2.27	1.98	1.36	1.13

NOTES: The first five components explain 64.2% of the variation: Component 1 – 38.3% ; Component 2 – 8.8%; Component 3 – 7.6%; Component 4 – 5.2%; Component 5 – 4.4%;

Table 2a: What economists do: Approaches and methods conducted / commissioned

	Used	Not Used	N
Cost-Benefit Analysis	67.54%	32.46%	499
Econometric Analysis	51.77%	48.23%	479
Use of Published Econometric Analysis Conducted by Others	72.04%	27.96%	490
Original Policy Experiment	20.92%	79.08%	435
Use of Published Experiment Conducted by Others	38.75%	61.25%	449
Game Theory	14.75%	85.25%	434
Analysis Involving Mathematical Manipulations or Terminology	53.23%	46.77%	464
Use of Published Research Using Mathematics or Terminology	57.46%	42.54%	456
Synthesising Evidence	84.07%	15.93%	496
Interviewing Individuals	35.40%	64.60%	452
Interviewing Groups (eg Focus Groups)	23.25%	76.85%	432

Table 2b: Groups Economists have worked with in last 3 months

	% Work with
Other Economists in Government	84.5%
Economists from Universities	42.0%
Economists in Consultancies	40.2%
Other Civil Servants	85.1%
Minister or Other Politicians	39.8%
People from the Business Community	38.6%
Consumer Representatives	9.6%
3rd Sector Representatives (NGOs)	22.5%
General Members of the Public	12.5%
Representatives from International	31.7%

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

Bodies

N=555

For Peer Review Only

**Table 3: Approaches Used by Government Economists:
A Five Principal Components Solution**

	Component 1 (Technical/ Evidence)	Component 2 (CBA/ Interview)	Component 3 (CBA/ Experiment)	Component 4 (CBA/ Synthesis)	Component 5 (Theory)
CBA	0.0872	0.3154	0.4366	0.3824	0.256
Econometrics	0.3329	-0.3164	-0.1919	-0.3392	-0.1185
Secondary Econometrics	0.4447	-0.1185	0.0234	-0.0157	-0.364
Policy Experiment	0.3042	0.1656	0.3105	-0.4563	-0.0444
Secondary Experiments	0.2952	0.2791	0.3624	-0.3552	-0.0289
Game Theory	0.1477	-0.001	0.0141	-0.1858	0.8024
Maths	0.3651	-0.4104	-0.0816	0.1649	0.2711
Secondary Econometrics	0.4177	-0.221	-0.091	0.3625	0.1024
Synthesis	0.2611	0.0791	0.3401	0.4433	-0.2346
Interview Individuals	0.2359	0.4408	-0.4956	0.1198	-0.0278
Interview Groups	0.2249	0.513	-0.4098	0.0089	0.0381
Eigenvalues	1.98	1.61	1.25	1.21	1.07

Table 4: Probit Models of Economics Research Use

	(a)		(b)		(e)		(f)	
	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.
Postgraduate	0.100	(0.188)					0.037	(0.228)
Female	-0.033	(0.166)					-0.072	(0.179)
Bank of England			0.232	(0.525)			0.214	(0.575)
Business Innovation & Skills			-0.19	(0.468)			-0.23	(0.505)
Communities & Local Government			-0.658	(0.518)			-0.871	(0.537)
Energy & Climate Change Dept.			-0.848**	(0.423)			-0.978**	(0.445)
Environment Food & Rural Affairs Dept.			-0.018	(0.556)			-0.244	(0.565)
Fair Trade & Competition Commission			-0.548	(0.452)			-0.606	(0.493)
Foreign Office			-0.618	(0.652)			-0.327	(0.701)
Health Dept.			-0.078	(0.564)			-0.177	(0.587)
HMRC			-0.343	(0.483)			-0.254	(0.517)
HM Treasury			-0.589	(0.406)			-0.547	(0.447)
DFID & International Development			-.848**	(0.423)			-0.67	(0.466)
Ministry of Justice			-1.033**	(0.5)			-0.976*	(0.518)
National Statistics			-0.548	(0.505)			-0.395	(0.51)
Scottish Government			-0.323	(0.481)			-0.443	(0.505)
Transport Dept.			-0.162	(0.466)			-0.276	(0.488)
Work & Pensions			-0.575	(0.406)			-0.611	(0.439)
Economists in Specific Unit in Dept.							0.012	(0.236)
Assistant Economist							-0.358	(0.448)
Economic Advisor							-0.375	(0.442)
Senior Economic Advisor							-0.37	(0.467)

Policy					0.274	(0.328)	0.29	(0.358)
Analysis					0.738***	(0.254)	0.713**	(0.289)
Policy & Analysis					0.852***	(0.251)	0.921***	(0.285)
constant	1.277***	(0.173)	1.769***	(0.320)	0.694***	(0.214)	1.467**	(0.602)
N	490		490		490		490	
chi2	0.315		16.361		13.622		29.106	
aic	301.709		313.663		290.402		318.918	

NOTES: Here and throughout the paper, statistical significance is indicated as: * p<0.10, ** p<0.05, *** p<0.01

Table 5: Why it is Difficult to Find Suitable Published Economics Research

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	N
Timeliness	6.4	36.3	30.1	24.8	2.5	488
Relevance	16.0	43.2	19.8	18.8	2.3	489
Practicality	13.6	39.8	30.8	14.4	1.4	487

NOTE: Pearson’s X² test for independence: 52.178*** (p-value 0.000).

Table 6a: Potentially Helpful Additional Training Policy

	Yes	Perhaps	No	N
Doing Econometrics	48.4%	36.7%	14.9%	477
Evaluating Econometric Work Done by Others	61.6%	29.2%	9.2%	479
Understanding Econometric Theory	36.8%	40.7%	22.5%	467
Synthesising Ideas	39.2%	41.8%	19.0%	474
Economic History	30.6%	43.7%	25.7%	471
Understanding Implications of Institutions for Policy Implementation and Effectiveness	52.4%	39.3%	8.3%	473
Presenting Economic Analysis to Different Audiences	60.6%	28.8%	10.6%	472
Understanding Different Social Sciences	38.5%	45.8%	15.8%	476
Understanding Different Sciences	20.0%	48.6%	31.3%	469
Using Spreadsheets	48.6%	26.8%	24.6%	471
Using Econometrics Software	46.9%	36.5%	16.6%	471

NOTE: Pearson’s X² test for independence: 376.018*** (p-value 0.000).

Table 6b: Level of Helpfulness of Additional Interaction with People Impacted by Policy

	Yes	No	Maybe	N
	52.4%	38.9%	8.7%	483

NOTE: Test for %Yes=%No rejected with a t-stat of 14.8 and p-value of 0.000.

For Peer Review Only

Appendix A

Table A1: Probit Models of IFS Publications Use

	(a)		(b)		(c)	
	Coeff	S.E.	Coeff	S.E.	Coeff	S.E.
Postgraduate					0.304*	(0.165)
Female					0.031	(0.133)
Bank of England	-0.336	(0.266)			-0.439	(0.278)
Business Innovation & Skills	-0.160	(0.282)			-0.066	(0.298)
Communities & Local Government	-0.357	(0.37)			-0.336	(0.381)
Energy & Climate Change Dept.	-0.669**	(0.309)			-0.627*	(0.319)
Environment Food & Rural Affairs Dept.	-0.577*	(0.33)			-0.702**	(0.343)
Fair Trade & Competition Commission	-0.704**	(0.319)			-0.732**	(0.33)
Foreign Office	-0.274	(0.477)			-0.141	(0.5)
Health Dept.	-0.340	(0.338)			-0.276	(0.349)
HMRC	0.746**	(0.347)			0.792**	(0.359)
HM Treasury	0.251	(0.274)			0.417	(0.296)
DFID & International Development	-1.086***	(0.339)			-0.885**	(0.362)
Ministry of Justice	-0.177	(0.391)			-0.160	(0.398)
National Statistics	0.268	(0.367)			0.321	(0.375)
Scottish Government	-0.123	(0.308)			0.052	(0.32)
Transport Dept.	-0.238	(0.277)			-0.197	(0.286)
Work & Pensions	0.906***	(0.308)			1.018***	(0.323)
Economists in Specific Unit in Dept.					0.171	(0.16)
Assistant Economist			-0.429*	(0.260)	-0.546*	(0.29)
Economic Advisor			-0.657**	(0.261)	-0.802***	(0.288)
Senior Economic Advisor			-0.535*	(0.288)	-0.546*	(0.313)
Policy					-0.200	(0.327)
Analysis					0.187	(0.257)
Policy & Analysis					0.122	(0.257)
constant	0.274	(0.178)	0.649***	(0.243)	0.431	(0.417)
N	459		459		459	
chi2	63.180		7.782		78.706	
aic	600.995		630.394		603.469	

Appendix B: Sample Characteristics

Table B1: Gender Frequencies

	Number
Male	367
Female	188
Total	555

Table B2: Number of Years in GES by Gender

	Mean	Std Dev	N
Male	6.918	6.432	367
Female	5.968	5.573	188

Table B3: Frequencies of Seniority Levels

Seniority Level	Percentage
Assistant Economist	40.0
Economic Advisor	37.8
Senior Economic Advisor	15.1
SCS1	4.7
Other SCS	2.3

N=555

Table B4: Frequencies of Main Activity Area

Seniority Level	Percentage
Policy	7.9

Analysis	36.4
Policy and Analysis	46.7
Operational Delivery	3.1
Corporate Support	1.1
Mixed	4.9
N=555	

Table B5: Frequencies of Departments / Organisation

	Percentage
Bank of England	9.6
Business Innovation and Skills	7.0
Cabinet Office	1.1
Communities and Local Government	3.2
Culture Media and Sport	0.6
Defence	0.8
DFID	3.6
Education	1.7
Energy and Climate Change	5.5
Environment Food and Rural Affairs	4.9
Equalities Office	0.4
Fair Trading and Competition Commission	5.3
Food Standards Agency	0.4

Foreign Office	1.9
Health	4.5
Health and Safety	0.9
HM Revenue and Customs	5.5
HM Treasury	8.7
Home Office	1.3
Intellectual Properties Office	0.4
International Development	2.1
Market Regulation (eg Gas, Rail, Water	1.3
Migration	0.4
Ministry of Justice	2.6
National Audit Office	0.6
National Statistics	4.2
Scottish Government	5.5
Transport	7.4
Welsh Assembly	0.6
Work and Pensions	8.3

N=530

Table B6: Academic Qualifications

	Percentage
Undergraduate Degree in Economics	57.1
Undergraduate Degree in Economics with Maths (inc Stats) or Science	4.1
Undergraduate Degree in Economics with Arts or Social Science	18.4
Other Undergraduate Degree	6.3
Masters Degree in Economics	67.9

Masters Degree in Other Subject	7.2
Research Degree in Economics (eg PhD)	8.3
Research Degree in Other Subject (eg PhD)	0.2
Other Postgraduate Qualification (eg Diploma)	4.7

N=555

For Peer Review Only