

Parental Human Investments

Economic Stress and Time Allocation in Russia



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Abstract

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A decade of growth and wealth generation in Russia ended in 2009 with the collapse in GDP and rising unemployment. This Great Recession added new economic challenges to the 'old' problems facing children and families, including widening income inequalities and the phenomenon of social orphanage. One question is how the new and existing material pressures affect parent–child relationships. This research contributes to the answer by examining, in aggregate terms, the role poverty plays in the allocation of parental time in this emerging economy. Utilising a nationally representative sample of children, it explores how child interactions with parents are affected by aggregate and idiosyncratic shocks.

Drawing on the rational choice paradigm and its critique, we put forward the Parental Time Equilibrium as an analytical guide to the study. This theoretical approach presents individual decisions concerning time spent with children over the long term as the product of a defined equilibrium between *resources* and *demands* for involvement. We test this approach through pooled cross-sectional and panel analyses based on the Russian Longitudinal Monitoring Survey dataset from 2007 to 2009.

Children in low-income households face the double disadvantage of a lack of money and time investments at home, with both persistent and transient poverty being associated with lower than average parental time inputs in the sample. Moreover, while on average, we find that children do maintain the amount of time they spend with their parents under conditions of severe financial strain, low-income children lose out on play time with the mother. Material resources cannot be considered in isolation from structural disadvantages, of which rural location in particular is detrimental for parent–child time together. The study demonstrates that the cumulative stress of adverse macro-economic conditions and depleted material resources makes it difficult for parents to sustain their human investment in children.

The evidence this study provides on the associations between economic stress and parental time allocations advances our knowledge of the disparities of in the childhood experience in modern Russian society. The findings strongly support the equal importance of available *resources* and basic *demand* for involvement, thus drawing policy attention to the need to address both in the best interests of children.

To my mother, who inspired by example and taught me to never give up on aspirations
To Oliver, who provided unconditional support when it was most needed

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Chapter 1

The Russian Doll of Investments in Children

The Russian doll, which originated as a children's toy, has many symbolic meanings. One of them is of a mother who symbolises the family with children of different ages. Another is the search for a truth which is hidden behind the multiple hard shells or layers (Goncharov, 2008). In 1979, Bronfenbrenner wrote that individual experiences can be considered as a '*set of nested structures, each inside the next, like a set of Russian dolls*' (1979, p. 22). According to his ecological approach, parental behaviour cannot be considered in isolation from the child, family environment, community influences and the macro-level socio-economic conditions. The study we are going to present deals with one single phenomenon of parental behaviour – the quantity of parental human investments under conditions of economic stress – but we will strive to analyse this aspect in light of all the layers of our doll, from the micro level of the child and family all the way out to the macro-economic environment.

Below we outline the objective, rationale and scope of this research; we will point to some potential contributions of the study, introduce the theoretical framework and data and, finally, provide guidance on the key content of its empirical structure.

1.1 Study Objective

Russia has a turbulent past and an evolving present. In the last two decades, families with children have been in an ongoing struggle with and adaptation to crisis environments. Arguably, no other western nation has had to experience such a 'shock therapy' of political, economic, social, and cultural transformations in such a short period of time

or in such a drastic fashion. Winners as well as losers of this transition emerged as early as 1990 when the equalisation of opportunities through universalism of state provision gave way to an aggressive new liberal agenda (Stiglitz, 2002). While some children enjoyed the great advantages of diverse learning, new social opportunities and increased parental investments, others were left far behind in the ‘the rug rat race’ – a race involving the cognitive stimulation of children from a very early age (Ramey & Ramey, 2010), disadvantaged by economic or non-material circumstances.

The years of economic growth from 2000 to 2009 brought economic prosperity but benefited children to a much lesser extent than the rest of the population (IISP & UNICEF, 2011; Huby, et al., 2011). In 2009, the risk of poverty was 37% higher for children than for the general population, according to official statistics (Pishnyak & Popova, 2011). Children in low-income families have limited opportunities in terms of access to public pre-school provision (Seliverstova, 2005; Taratukhina, et al., 2006) and a quality education, with the disadvantage further reinforced by rural – urban divide (IISP & UNICEF, 2011). They also have higher health risks (Monakhov & Tzibulskaya, 2009; Artemenko & Shabunova, 2009). Vandemoortele, in his recent policy paper, argues that *‘children hold the key to breaking the poverty cycle. No strategy will be more effective and efficient than to give each and every child a good start in life’* (Vandemoortele, 2012, p. 4). A foundation for this ‘good start’ is given in the family, by the very people who remain the most caring and devoted investors in the present and future of their children. Their concern about children’s human development and their efforts in supporting it despite competing demands and pressing material needs is crucial, in our view, to achieving this goal.

The attention of this study is on parental efforts to provide a child with a good start in life when the family faces some strain on material resources. Parental efforts are conceptualised as human investment and measured through the amount of time parents devote to child-focused activities and their decisions to be involved. So, the central objective of this study is to assess how persistent and transitory economic stress measured

through poverty experiences, idiosyncratic and macro-level shocks to income affect parental time allocations and parental non-involvement.

The underlying interest is in utilising time as an important social indicator (Gershuny, 2011) to understand the non-material aspects of childhood experiences. Learning about this is a vital link in defining the role of the state in its support of children and families in the modern, post-transition Russian society.

1.2 Rationale: Socially Responsible Parenting

Russian children ranked at the bottom of family relationship index among 20 Central and Eastern European Countries (CEE) and the Commonwealth of Independent States (CIS) (Richardson, et al., 2008). The same study indicates that they also score worst in terms of the proportion with good peer relationships. This draws attention to the social, non-material aspect of their life, which is often overlooked in policy discussions and interventions.

Children at risk of being taken into social care value time with their parents way above their material needs. When a group of children from six Russian regions were asked what a happy family means to them they named relationships, rather than material advantages, as the most important dimension of family life (Orbova, 2011). Time spent in communication, interaction, and play with parents was the most often mentioned characteristic of well-being in the family. Arguably, children disadvantaged by the lack of relationship with their parents can be more acutely aware of these aspects of their well-being. And yet the prevalence of parental attention and positive interaction mentioned as the necessary condition for other dimensions of their life such as ‘education’, ‘subjective well-being’ and ‘behaviour and risks’ indicates that time spent with parents is at the core of childhood experiences.

In June 2012, Russia adopted the National Children’s Strategy 2012–2017 (Kremlin, 2012). One of the key directions specified by the programme is ‘Measures aimed at developing a safe and comfortable family environment’. It includes the popularisation of

family values, priority on responsible parenting, and a commitment to protecting childhood. It also calls for the design of measures in response to European recommendations on policies in support of positive parenting (Council of Europe, 2006). It aims at increasing the number of children with active social position in life and independence, positive moral and cultural values. For the first time since the collapse of the Soviet state, the government is once again making the support of children's social, moral, and cultural upbringing an issue of national concern.

After two decades of seemingly irreversible policies leading to a 'privatisation of childhood', which we discuss in Chapter 5 of this study, the state is swinging back to a new, modified, paternalistic agenda. The extent of its interference in the 'private spheres' of parenting has resulted in a public debate (Kuznetsov, 2012), but few question its focus on socially responsible parenting. The latter is a response to the acute problem of social orphans (children whose biological parents were denied parental rights through court procedures) and 'street children'. These social problems came to light during the turbulent 1990s, but remain unresolved at the present time (FSC, 2009). Other acknowledged social risks to child well-being and to the health of the nation include a lower age at which children start consuming cigarettes or alcohol and widening use of drugs among Russian youth (Skvortzova & Mironova, 2007; UNICEF, 2007). Indeed, international comparative evidence indicates that Russian youth has the highest rates of engagement in 'risk behaviour' among 20 countries in the region (Richardson, et al., 2008). This includes sexual health, alcohol and drug use, crime, child labour, and suicide.

Empirical evidence on factors influencing general parental practices and specifically parental human underinvestment is highly fragmented in Russia. In 2007, the UNICEF report 'On the State of Russian Children' noted that *'A key reason for limited prevention programmes is the lack of reliable information regarding families in crisis. The reasons why children are abandoned or leave home have been studied sporadically, and many write off the causes to alcohol abuse'* (UNICEF, 2007, p. 78).

The contribution of this study to the policy debate is in highlighting the role of material disadvantage among other individual and structural factors in explaining parental in-

volvement in Russia today. Based on a nationally representative sample, we analyse the disparities between children in the amount of non-material resources they receive at home. We also reveal whether children receive compensation in the form of extra attention and care when the family has to face severe shocks that affect their material resources.

1.3 Context and Scope

Equalities of Opportunities in Child Human Development

Equality of opportunity for a child's human development is the primary normative criterion through which we analyse the extent of parental human investment in Russia. This study treats parental investments as a mechanism through which children acquire and develop their social, emotional, and cognitive competences and abilities. The interdisciplinary literature review presented in Chapter 2 reveals the diversity of approaches and interpretations of parental investments, from human capital defined as activities that influence the future income of individuals to the model of family process investments (Bradley & Corwyn, 2004) and social capital in the formation of human capital (Coleman, 1988). This study considers parental human investment as an input that aims to enhance a child's ongoing functioning without measuring the monetary value attached to it in the future. Therefore, we are concerned with the quality of childhood and social and learning experiences at home, rather than tangible future outcomes. In this sense, it is about a child's 'being' rather than 'becoming', although these are undoubtedly interconnected as present experiences implicitly shape future opportunities.

While the focus of this study is on the input side of parenting, an informed assumption is made that parental human investment makes a difference to child development. Since the publication of the controversial Coleman Report in the US in 1966 (Coleman, 1966), there have been a great number of studies examining the role of parents, family, and the home environment in the cognitive, developmental, and socio-behavioural outcomes of children (Becher, 1985; Fan & Chen, 2001; Hoover-Dempsey & Sandler, 1997; O'Connor & Scott, 2007; Ho Sui-Chu & Willms, 1996; Kiernan & Mensah, 2010). The

literature generally finds positive associations between the quality of parent–child relationships and child outcomes.

Literature on parental time supports its positive effects on the increased human capital of children (Leibowitz, 1974; 1977; Cooksey & Fondell, 1996) and on cognitive competences in the present (Neidell, 2000; Villena-Roldán & Ríos-Aguilar, 2012), but also highlights the risks of insecure parent–child relationships, such as possible aggression and non-compliance, emotional insecurity, sociability (Belsky, 1990; 1991) or cognitive outcomes (Brooks-Gunn, et al., 2002; Han, 2005) when children are cared for from an early age by someone other than their mother.

Research on the links between parental involvement and child outcomes in Eastern Europe and other countries which have experienced an economic transition is scarce. Rare evidence comes from the investigation of change in psychological well-being of Russian and Ukrainian adolescents from 1999 to 2007 by Tartakovsky (2010). It found that attention received from parents and friends were major contributors to adolescents' well-being, school achievement and social competence. Overall, the literature suggests that the effects seem to vary along a number of vectors such as intensity of parental input, quality and quantity of interaction, and the cultural conceptualisation of parent–child relationships.

Economic Stress and Parenting

Economic stress experienced by the family is the spotlight under which we analyse parental time input in this study. One of the many definitions of stress is ‘the tension resulting from factors that tend to alter an existing equilibrium’ (Merriam-Webster, 1994). Limiting empirical focus to economic stress implies defining the scope to those aspects within factors of an economic and material origin. This ecological approach (Bronfenbrenner, 1979) allows us to conceptualise the stress through the individual experiences of parents (involuntary unemployment, etc.), household characteristics (loss of income, poverty, etc.), and macro-level events such as the recent global recession.

We further differentiate it by longevity (i.e. transitory, recurring, or persistent poverty) and by its potential sources (e.g. macro-economic recession and idiosyncratic events).

Scholarly debate on the relationship between parental behaviour and economic stress is based on the premise that material disadvantage affects parents' and consequently children's outcomes (Katz, et al., 2007). According to economic theory, limited material resources mean lower levels of private monetary transfers to children, which in turn increase the risk of parental investment falling short of socially optimal levels (Lord, 2002). Children in poor families show far worse outcomes in health and education than children in wealthier families partly because they have fewer resources that help them develop (Huston, et al., 1994; Thomson, et al., 1994; Duncan & Brooks-Gunn, 1997; Ermisch, et al., 2001; Yeung, et al., 2002; Bradshaw, 2002; Gershoff, 2003; Michael, 2004). The evidence from the parental time allocation literature is scarce, as very few papers examine the effects of economic stress using direct measures of poverty or idiosyncratic shocks such as the ones proposed by this study.

There is, however, sufficient evidence on the influences of some individual-level factors on parental time allocation decisions. As further discussed in Chapter 2, we account for the significant influences of

- Child characteristics (Tzeng, et al., 1991; Burgess, 1979; Rogoff, et al., 2008; Loefmark, 2007);
- Parents' education (Leibowitz, 1974; Saxe, et al., 1987; Sullivan, 2010; Ramey & Ramey, 2010; Guryan, et al., 2008); and
- The extent of parental attachment to the labour market (Gauthier, et al., 2004; Bianchi, et al., 2006; Sandberg & Hofferth, 2001; Kendig & Bianchi, 2008; Burchardt, 2008).

Meanwhile, the literature on the family stress model (Hill, 1949; Conger & Elder, 1994; McLoyd, 1990; Conger, et al., 2002), which examines parents' and child' outcomes under material pressures, highlights the importance of subjective perceptions, parents'

stress, and the level of self-efficacy as a mediating role between economic hardship and parental practices.

Based on our data, 29% of households live in multi-generational households with at least one grandparent. This is close to the finding of another recent study (Sinyavskaya & Gladkova, 2007), which recorded 26% respondents living with their parents. Thus, the social support provided by other family members residing in the household can be a crucial resource for parents to draw on for their time allocation decisions. We conceptualise it as the part of the social capital (Coleman, 1988) available to parents, and its inclusion in the analysis appears to be crucial in the Russian context. Our study is different to the majority of time use papers in that it accounts for such inter-generational support by linking child-level data with all adult members of the household.

1.4 Potential Contribution

Our review of scholarly knowledge showed, firstly, that there is a limited body of literature explaining the patterns of parental time allocations outside the range of developed countries in the OECD group, which are distinctive in their welfare and socio-economic conditions. Secondly, even in western scholarship the vast majority is focused on explaining the influences of the socio-economic position on time allocation through parental education, rather than direct measures of poverty or disadvantage. We argue that in countries with wide access to tertiary education but some hidden barriers to entry in regard to the labour market, parental education does not fully capture either parents' aspirations or their material position. Thus, the added value of this study is: a) in the expansion of the evidence base to a new geographic region which has experienced a unique welfare discourse; and b) in the application of a refined measure of economic stress within a dynamic framework.

Time use research is not a novelty for Russia. On the contrary, Russian sociologists pioneered time diary methods as early as the 1920s. However, the collection and analysis of data on time use in recent decades has focused on the trends and patterns of individual time allocation rather than explaining its direct or mediating driving forces.

Meanwhile, the few scholars who have attempted to address this gap (Loefmark, 2007; Gvozdeva & Gvozdeva, 2006; Gronau, 2006) either used a small dataset of a single town (Loefmark, 2007), focused on gender divisions in paid and unpaid work rather than child well-being (Loefmark, 2007; Gvozdeva & Gvozdeva, 2006), or analysed economic pressures (aggregate shocks) in a very different time period (Gronau, 2006). Our study is not only an extension of all these accounts, but differs in that it is based on an interest in child experiences rather than home production or gender inequalities. Thus, this study draws attention to some previously observed issues in the Russian context (such as the rural–urban divide) but does so in the new light of childhood experiences.

The recent global recession has stimulated scholarly interest on individual time allocation behaviour (Burda & Hamermesh, 2009; Gimenez-Nadal & Molina, 2009; Morrill, et al., 2012; Bloemen & Stancenelli, 2008). The primary focus so far has been on the shift in time allocations between formal work, home production, and leisure. None of the recent papers has focused on the effect of recession on child-focused time allocations. Those few that analysed it alongside other time use categories did so within a very different macro-economic context, such as the recent recession in the US, UK or Spain, and with no examination of the related role of poverty.

Russia's recession was very different in that it was short lasting but dramatic in amplitude. To understand its effect on parental practices is a vital and timely empirical task not only for Russia but for a wider Eastern European context. So, the contribution of this study is not only in bringing the analysis of parental time allocation to a new macro-economic context but also in identifying the group of children who might lose disproportionately in terms of interactions with their parents. It is also different from recent studies in that it seeks to draw attention to the potential positive effects of direct policy measures such as a widening of access to childcare provision.

The least researched area of parental time allocation relates to it as a response or adjustment to idiosyncratic shocks. Limited availability of longitudinal time use data is one reason for this concomitant lack of attention (Gronau, 2006). While a substantial

body of literature in the field of development has investigated the risks of income shocks on household vulnerability (Skoufias, 2003; Lokshin, 2004; Dore, et al., 2003) and on child outcomes (Duryea, et al., 2001; Chevalier, et al., 2005; Dehejia & Gatti, 2005; Guarcello, et al., 2010), it has rarely examined time allocation decisions. Our study is among the very few that attempt to investigate change using longitudinal panel data. By developing and applying a theoretical model of Parental Time Equilibrium (PTE), we are able to integrate a time allocation and a family stress model within a dynamic framework. Empirically selecting the measures of idiosyncratic shock, controlling for unobserved characteristics and placing the family stress model into a new socio-economic context, we hope to contribute to the literature on transient economic stress and parenting.

Finally, despite the high priority given to protecting children in difficult life situations in the policy agenda of the Russian Federation (particularly with accumulated disadvantage and child neglect), research studying the children and families in such situations has been predominantly of a qualitative nature without drawing on a nationally representative sample of children. While highly valuable in their own right, they are not able to provide a broad picture of risk factors for joint parental withdrawal applicable to the whole population of children. This study adds value by providing empirical evidence on the previously untested phenomenon of the lack of parental involvement in childcare and leisure activities with children. Although we are careful not to equate the lack of reported non-involvement in childcare with child neglect, we consider it as parental underinvestment – a lower than socially desired level of involvement in the interests of a child.

1.5 Theoretical Framework and Data

Later in the thesis we demonstrate that there is no single theory that could guide our analytical investigation. The Time Allocation and Parental Investment theories developed under New Home Economics (Becker, 1965; 1981, enlarged 1991) do not provide a clear answer on the influence of economic stress on parental time allocation. The ef-

fect will depend not only on the opportunity cost of time, but also counter forces such as income and substitution effects. At the same time, the primary applications of the family stress model (Hill, 1949; McLoyd, 1990; Conger, et al., 2002) relate to studies of child and parent outcomes rather than time use. This lack of analytical cohesion led us to develop our own theoretical framework which stems from the above mentioned theories but has key differences. These are: a) it focuses specifically on child-related time allocations; b) it integrates the theoretical extensions and some of the relevant critique of the parental time investment and time allocation theories; and c) it provides for the analysis of economic stress at the micro as well as macro levels, at one point in time as well as from a dynamic perspective.

The PTE framework presented in our chapter on methodology forms the analytical structure and key testable propositions of this research. It proposes that, in the long run, parents act at the point of efficient time equilibrium, matching the *demands* for care and involvement with a range of existing *resources*. It utilises the ‘Russian doll’ ecological framework pioneered by Bronfenbrenner (1979) to define the nested structures within *resources* and *demands*. Thus, resources at the individual level include parents’ subjective well-being, human capital and time availability; at the household level, material capital; at the meso- level, social capital; and at the macro level, the enabling socio-economic environment and family- and child-related public provision. Demand is shaped at the individual level by a child’s characteristics, parental aspirations, belief, and ideas: those in turn are influenced by meso- and macro-level cultural traditions and social norms.

The efficient point (from an individual perspective) of equilibrium time allocation can in the extreme range from zero minutes to 24 hours per day on a Time Allocation Scale. In the short run, however, the PTE is subject to shocks to resources and/or demands. Conceptually, the effects of economic stress on parental time input can be presented as the effect of shocks to resources at the idiosyncratic as well as aggregate levels. Each chapter tests the main analytical propositions of the PTE model in light of our key research questions:

- Chapter 4: To what extent does economic stress, associated with poverty experience, contribute to disparities between children in the level of received parental care and attention?
- Chapter 5: What is the relative role of poverty experiences in explaining the lack of parental involvement in child-related activities? What groups of children are likely to be at risk of joint parental withdrawal from care and leisure?
- Chapter 6: Do drastic changes in macro-economic conditions (associated with the recent recession of 2008-2009) directly influence parental time allocation adjustments?
- Chapter 7: How do parents respond to the idiosyncratic shocks in the household, which result in significant contraction of financial resources? (Chapter 7) To what extent do parents' subjective perceptions and coping strategies facilitate this process?

The study utilises the rich data set of the Russian Longitudinal Monitoring Survey (RLMS) for the years 2007, 2008 and 2009. The advantages of using this data for our empirical task include its multilevel structure, allowing us to merge child-, adult-, and household-level data, and its longitudinal nature, which is crucial for the analysis of shocks. Moreover, its national representativeness provides grounds for some generalisations to be made. The unit of observation for our investigation is the child, and the key measures of parental human investment are: a) time spent on care and leisure activities with children; and b) complete parental non-involvement in these two activities.

1.6 Structure of the Thesis

Our empirical analysis is structured in the following way:

Chapter 2 highlights the interdisciplinary nature of this study while critically exploring its two principal concepts – parental human investment and economic stress. It defines these notions within a broad theoretical context and draws on supporting empirical evidence from the developed as well as developing world. Firmly grounding our analytical approach within the rational choice paradigm, we discuss the need to examine parental

time inputs through a dynamic perspective and to integrate the family stress model into the empirical framework of this study.

Chapter 3 defines the scope of this study and key definitions. It formulates the PTE framework as grounded on the micro-economic assumptions of utility-maximising behaviour under constraints. The chapter also presents the RLMS dataset and outlines its advantages and some possible limitations. Finally, it discusses the choices we have to make regarding the methods for time use and panel analysis.

Chapter 4 sets the analytical stage of our study by investigating what motivations and constraints drive the time allocation decisions of Russian parents today. It points to the old, entrenched risks of gender and territorial inequalities in individual time allocations observed over recent decades and the ambiguity of their relationship to the new risks of growing income inequalities. The key focus here is on the contribution of poverty experiences to the disparities between children in the level of attention and care they receive from parents. We consider this in the context of other factors forming the groups of *resources* and *demands* discussed in relation to our analytical framework. We use Tobit marginal effects to estimate the effects of poverty on parental time allocations.

Chapter 5 examines the effects of the poverty experience on parental non-involvement through the prism of the welfare discourse in Russia. It discusses a major shift in responsibility for the child's upbringing from the state to the family over the transitional period. It argues that some parents failed to adjust their parental input in response to state withdrawal from crucial services. We point to the trends in parental non-involvement in our data and estimate the risks of children having non-involved parents based on the hypotheses of time availability, direct substitution, child effects, and structural failure.

Chapter 6 engages with the 'enabling' macro-economic environment, in particular testing the theoretical proposition that aggregate macro shocks can have a direct effect on parental time allocation decisions. We relax the assumptions made in the preceding chapters where we held the macro-economic conditions and policy environments con-

stant and analyse the parental response to the recent economic recession using fixed effect modelling. We hypothesise that the effects on families and parental time allocation will be highly heterogeneous due to the multitude of transfer channels, the nature of the recession in Russia, and regional socio-economic disparities.

Chapter 7 analyses parents' ability to mitigate income risks alongside their parental responsibilities. We hypothesise based on the literature and our own study in Chapter 6 that children in low-income households can be vulnerable to changes in parental attention and care due to material strain caused by idiosyncratic shocks. We contrast different measures of idiosyncratic shocks including drastic income and expenditure falls, unemployment and hidden unemployment, and subjective indicators. We extend the panel data analysis of the previous chapter by testing the mediating influences of subjective well-being and the coping strategies employed in parental response to shocks.

Chapter 8 summarises the key findings through the underlying propositions of the PTE framework, reflects on what has been achieved and outlines limitations as well as opportunities for future research.

Concluding Remarks

Russia is a complex case for a study of parental practices. Its huge geographical spread and economic disparities, as well as the decentralisation of important child-related policies to the regional and municipal levels, mean that generalisations and analytical extrapolations should be taken with some caution. At the same time, the Soviet welfare regime and uniform ideology shaped a common cultural core, which has been transferred to the current generation of parents. Russia's uniqueness as an emerging economic power with a market-based distribution of benefits and a redefined role of the state makes it an interesting case. For Brofenbrenner, who was born in Russia, a Russian doll was probably a very natural metaphor to describe the complexity of the relationships between a child, its parents and the environment. So it is for us, in our analytical journey guided by the rational choice paradigm, that the image of a Russian doll is

more intriguing and revealing about the country and its families than a treatment of the households as a 'black box' (Pollak, 1985).

Chapter 2

Critical Review of Theories and Evidence

Over decades the process and outcomes of parental investment in children's development have been examined by a wide range of academic disciplines, including developmental psychology, economics, sociology and social policy, anthropology and education. Each field has accumulated rich evidence on child–parent dynamics, the effects of home and family factors on child outcomes and the processes that enhance them. The last decade, however, has seen a noticeable trend of wider interdisciplinary exchange of ideas and concepts either in the form of collaborative work, recognition of evidence from other fields or ‘shared perspectives’ on the discussion of parental choices, decisions, and actions (Kalil & DeLeire, 2004). This chapter reviews the theoretical approaches and accumulated evidence from a number of academic fields. The focus is placed on understanding the role of time input within the parental investment framework, as well as the linkages between economic stress and parenting.

Investment might appear to be an awkward word when applied to such a complex, sensitive, and multi-dimensional process as child–parent relationships since it implies an expectation of some tangible return in the future – to the society, family or the child. In our view, however, it is the term that best describes the ongoing transmission of resources, knowledge and skills from parents to children. Various definitions of parental investment have been provided by scholars over time and from different disciplines. The meaning very much depends on the purpose and context. For example, early papers by Leibowitz (1974) analyse home investment through the quantity and quality of time and goods devoted to the child as determined by their parents’ genetic endowment, their education, and associated family income. Becker (1981, enlarged 1991) generally considers parental investments within the ‘human capital’ framework, in terms of parents’ attempts at maximising the lifetime earnings of children and their chances for success.

Hertwig et al. (2002) attempt to integrate an economic perspective with views from biology and psychology by presenting multiple investment strategies that parents use when facing trade-offs between competing goals for their children, social norms, and resources at any given point in time. Developmental psychologists Bradley and Corwyn (2004) offer a model of ‘family process investments’ in child well-being, identifying a broader set of parental actions which aim at preserving or enhancing child development in a particular social, cultural, and educational context. Our approach here is to find common themes among these different perspectives while retaining the rational choice paradigm at the core of our approach.

This critical review defines the role of parental time as one of the key non-material inputs during a childhood. It also explains the nature of economic stress and its influence on parenting and childhood experiences. We map the scope for our analytical investigation and highlight unexplored lines of enquiry in the context of a non-western society.

This chapter is structured in the following way: first, we discuss the parental investment framework developed within New Home Economics. We highlight the limitations of Becker’s theories of time allocation (1965) and parental investments (1981, enlarged 1991) as discussed by other scholars and supported by empirical evidence. Second, we critically examine empirical evidence on the range of factors affecting parental input. Third, we focus on economic stress as an underlying theme of this research and its role in shaping and influencing parental human investments. We define economic stress in a broad context as including persistent material shortages (poverty), transitory income shocks and macro-level economic pressures. Based on this, we also review the evidence on its links to parental practices. We conclude by reiterating the knowledge gaps identified in the literature and restating our research questions.

2.1 What Are Parental Investments?

Economic Framework of Parental Investments and Time Allocation

The most prominent model of family investments in children was developed within the New Home Economics framework, which is an economic take on family choices, decisions and behaviour. Becker stressed the importance of family as a social institution and saw parents and mothers in particular as the primary source of children's adaptation to society and learning (1993, p. 23). Two interconnected theoretical developments formulated within New Home Economics are relevant for our analysis: the theory of the allocation of time (Becker, 1965) and the theory of parental investments. The latter was summarised in Becker's *Human Capital and the Rise and Fall of Families* (Becker & Tomes, 1986).

The theory of the allocation of time was a pioneering model in which time is treated in the same way as market goods. One of the main propositions of the theory is that time has an indirect cost. Becker (1965) argued that this means we have to systematically account for it when analysing non-market activities or home production such as cleaning, cooking or childcare. He also argued that 'the small factory' of the household combines capital goods, raw materials and labour in the same way as formal work. Thus, the theory emphasised the higher importance of home production to economic welfare in comparison to formal work time (Gronau, 1977).

According to this framework, households combine time and market goods via the 'production function' to produce N amount of basic commodities. They choose the best combinations of these commodities by maximising their utility function subject to budgetary constraints. Families are said to constantly face allocation choices, between work and child rearing, between home production and leisure, etc. Families with young children constantly have to deal with resource allocation trade-offs because children, as the most valuable commodity of the home production, demand both greater resources and greater care.

Raising a child in the family implies incurring direct and indirect costs, in the form of the monetary input of market goods and allocation of time, the value of which is reflected in forgone earnings. The higher the forgone earnings are (i.e. the wages that parents can command in the labour market), the higher the cost of one hour of the parents' time. The final effect will depend on the relative strength of the substitution and income effects leading to ambiguity in predictions. Of course, while this theory is the foundational step in our understanding of parental time input, its intentionally simplistic assumption of a dual constraint of time and money means the theory has little room for other important influences on parental time allocation decisions.

Further interest on the part of New Home Economics in the varied degrees of intergenerational mobility and associated inequality among families led to the model of parental investments (Becker & Tomes, 1986). According to this model, the accumulated wealth of children (including future earnings) '*equals the sum of their wealth from the capital invested in them; from their endowed capital... and from capital gain due to luck in the market for income*' (Becker & Tomes, 1979, p. 1156). Endowment is something that a child naturally inherits from parents through biological, cultural or social transmission at the time of birth (Becker & Tomes, 1993). The model recognised the life-course dimension, indicating that parental investment – being just one of the components of a child's human assets – is likely to evolve over the course of the childhood and be adjusted or modified by parents. Empirical analysis presented by Becker supports the idea that the wealth effect on investments in children dominates the endowment effect.

Our analytical investigation is primarily concerned with ongoing investments rather than biological endowments or luck. Therefore, hereafter we will refer to the parental investment theory as an independent approach. It asserts that parental investment in children is a transfer of money and time shaped by budgetary constraints, which in turn is determined by available resources: family wealth, time available to parents, and the cost of investments in children (Fulingni & Yoshikawa, 2004). Monetary inputs reflect parents' socio-economic standing, parents' education, and available information about educational opportunities. Parental time input is understood to include not only direct

interaction with a child (such as a parent holding a baby, reading to a toddler, helping with homework), but also transaction costs – time spent driving a child to after-school activities, time spent arranging the child’s schedule, etc. (Fulingni & Yoshikawa, 2004). For the purposes of our study, we will hereafter distinguish monetary or material investments and human (time) parental investments.

As parents act under constraints of time and money, intra-family allocation of these resources has been an important aspect of the analytical framework. Becker argues that parents are concerned with the welfare of their children, yet they aim to maximise the total well-being of the family by pooling their resources: *‘Since parents must reduce their own consumption (including leisure) to raise the time and resources they spent on child care and children’s education, training and health, even altruistic parents have to consider the trade off between their consumption and the human capital of children’* (Becker, 1981, enlarged 1991, p. 5). Moreover, the model stipulates that the family has one ‘altruistic’ member whose preferences reflect concerns over the preferences of the others. Individual differences in preferences (including among children) can become submerged when a family is treated as a single harmonious unit reflecting the consistent preferences of the altruist. This is generally known in economics as the unitary model of household behaviour.

Much of the criticism of Becker’s theory was directed towards this particular assumption of unitary behaviour, addressing its apparent weak empirical foundations and underlying assumptions (Berk & Berk, 1983; Pollak, 1985; Folbre, 1996; Pollak, 2003), etc. The main argument of Becker’s opponents is that this model is not suited to the performance of intra-household distribution analysis. Later theories of bargaining behaviour within households developed by Manser and Brown (1980) and by McElroy and Horney (1981) recognise the individual and possibly conflicting preferences of family members. They suggest that decisions are made as the result of a bargaining process among them. There is a large body of empirical evidence from both the developed (Lundberg, et al., 1997) and developing countries (Quisumbing & Maluccio, 2000)

showing that household decisions do in fact depend greatly on the identity of the individual in possession of the resources. For a review see Haddad, (1998).

Scholarly disputes on the models of parental/household resource allocation behaviour have been indirectly concerned with children as the ultimate recipients of resources. From a child's perspective, the human resources received from a mother or father (if they reach a child) might be equally valuable. We argue then that for the purpose of our study it is not the relative bargaining power of household members that matters most but the extent to which a child or children in the family benefit from any particular form of distribution. Therefore, while it is important to recognise the bargaining power that exists between parents (for example, by controlling for relative wages in the model) it is not a focus of our analysis.

Folbre's criticism of Becker's time allocation theory is highly relevant to our study. She states that the rational choice approach '*overstates the role of individual decisions and exaggerates the efficiency of social outcomes*' (Folbre, 2004, p. 7). Folbre stressed the importance of social institutions (including social and cultural norms), which influence the available options in regard to time allocation decisions, pointing out that '*motives for children are mediated by values, norms, and preferences*' (Folbre, 1996, p. 676). Folbre also indicated the need to explore subjective individual data to better understand the nature of parental time allocation preferences, which is in harmony with the family stress model (Conger & Elder, 1994) reviewed in the section three of this chapter.

Applying the household production approach to child-specific time allocations is complicated by the nature of these activities. Scholars disagree whether child care and other child-related time inputs should be classified as home production or leisure. Some studies from Russia indicate that recreational or educational activities with children are seen as satisfying or enjoyable activities for parents (Karakhanova, 2003; Matjushechkin, 2007). This level of satisfaction is clearly different from other home production activities, for example doing laundry or cleaning. Yet feeding, changing, bathing and other parental routine chores at the early stages of a child's development clearly have characteristics of home production as services that can be directly purchased in the market.

Thus, some scholars place it within the ‘home production’ category (Aguilar & Hurst, 2007) while others choose to treat it as a completely separate category (Guryan, et al., 2008). Guryan et al. (2008), based on US data, find that parents view market-purchased child care as a poor substitute for parental time compared to other items in home production, but the effect varies by parental education. Kimmel and Connelly (2007) also strongly argue that childcare is quite distinct from either individual leisure or home production allocations. This debate indicates the complexity of applying the time allocation theory framework in its classical form to child-focused time allocation decisions.

The strength of the economic model of parental behaviour is in its simplicity and conceptual clarity. However, simplicity in the assumptions comes at a price in the form of inevitable omissions: it is gender neutral due to the assumption of collective decision making in the family and does not account for any of the social and cultural norms prevailing in the family. Moreover, the model does not include the contributions of the family and close community, which we will further discuss below. The latter is vital in the Russian context as inter-family exchanges have an important role to play (Gladnikova, 2009). These limitations in the parental investment model call for exploration of its later extensions and other conceptual approaches offered within economics and other disciplines.

Other Perspectives on Parental Investments

The human capital model of parental investment stimulated a lot of research and theoretical discussions on the forms and means of parental transfers to their children. An important contribution was made by Coleman in his discussion on the role of social capital in the formation of human capital (Coleman, 1988). He defined the concept of social capital as a resource for action within the rational choice paradigm. He observed the close ties that a family has through extended family, community and affiliations with local organisations or unions, which create some sort of insurance or safety net for those involved. Coleman distinguishes between social capital within the family and outside the family. The former is the relationships between children and parents and other extended family members. The latter are – from the child’s perspective – a number of

‘study circles’, relationships and ties that facilitate the child’s development and learning.

Furstenberg and Hughes (1995) highlight the value of this concept as a link between the characteristics of individual actors and their immediate social surroundings, such as schools, neighbourhoods, etc. However, it was also rigorously criticised as ‘*rather nebulous ... not adequately conceptualised in socio-economic history ... gender blind and without due attention to cross- and inter-cultural differences*’ (Morrow, 1999, p. 749). The evidence on the influence of social capital on time allocation decisions is scarce but generally supportive of social capital as a factor influencing parental decisions on care. Loefmarks’ (2007) study, which is based on a time diary survey in Taganrog in Russia, finds that the childcare contributions of the older generation in a multi-generational household directly influence the time parents devote to children. From our view, Coleman’s concept of social capital adds an important dimension of resources as providing opportunities as well as constraints. It is crucial for our investigation from the child’s perspective to show that parents draw from and often depend on their extended family and social support network.

We also highlight a more recent theoretical development by Burchardt (2008), who attempts to connect income poverty and time allocation decisions within a single framework. This framework highlights a fundamental economic problem, i.e. the scarcity of time and money resources resulting in the need to make often conflicting choices, with particular attention being drawn to time allocations and their interaction with low income. Incorporating Becker’s time allocation theory, Burchardt’s model of time and income capability specifies resources and responsibilities, which shape time allocation decision making in regard to personal care, paid and unpaid work (the latter including childcare). Responsibilities represent various forms of care obligation, maintenance of capital (for example, time for keeping healthy or supporting social connections) and the fulfilment of duties to sustain entitlements. The empirical testing of this model generally demonstrates the positive association between low income and low residual free time, mostly due to the burden of home production. From a child’s perspective, it shows that

about one in 15 children in the UK live in income-poor households where at least one adult is also time poor.

The importance of this framework for our analysis is in its original attempt to define minimum childcare responsibilities within the family and the inclusion of social capital as a resource available to parents and, through them, to children. Moreover, the study also underlines the role of wide-ranging social norms but stresses the difficulty they pose for empirical testing using quantitative data: *‘they are the kind of restriction on a person’s capability set that can be detected in qualitative data but which are much harder to reflect in quantitative analysis’* (Burchardt, 2008, p. 49). At the same time, it does not specifically deal with a temporal element or discuss the time allocations under adverse macro-economic conditions, which are factors of interest to our investigation. Our empirical strategy and conceptual framework will draw substantially on this model while adapting it to the narrower topics of child-focused time allocations and a dynamic response to economic stress.

Overall, different perspectives seem to converge in the understanding that parents engage directly (i.e. through time or efforts) or indirectly (i.e. through purchases of child-related goods, services and transfers) in shaping their children’s experiences during childhood and in regard to opportunities in the future. The scarcity of these resources implies that parents face certain trade-offs which can lead under specific circumstances to the optimum allocation from an individual welfare point of view. However, what is considered optimal for an individual parent or a family might not always be in the best interests of the child, at least unless we accept a much criticised collective decision-making model.

Becker’s theory and its extensions provide limited explanations when it comes to a possible parental response to economic stress. While the model acknowledges that investments evolve over the life of the family under changed demands, in the short run it treats them as the ‘stock’ rather than the ‘flow’. Our research interest is in the economic stress as a force, which in itself might affect both the stock and the flow of investments. This suggests a need to further examine those theoretical perspectives that deal with

economic stress and parenting and which are covered in section 2.3 of this chapter. However, before this we explore the key forces that are found to shape parental investment decisions at one point in time.

2.2 Why Parents Invest: Factors That Shape Parental Decisions

The level and extent of parental investments of time and money can vary widely across families from different socio-economic backgrounds and neighbourhoods (Mauldin, et al., 2001; McLanahan, 2004; Ziol-Guest, et al., 2004), as well as between nations (Sayer, et al., 2004b; Bratberg, et al., 2007; Guryan, et al., 2008; Gauthier & DeGusti, 2012). Various hypotheses have been offered in the literature but empirical evidence is primarily concerned with individual-level factors such as parental beliefs, aspirations, education, socio-economic backgrounds, etc. We review some of the influences most frequently identified in the literature, starting by emphasising the role of children themselves and their characteristics in guiding parental behaviour.

Child Effects

New Home Economics appears to oversimplify a child's role in the decision-making process and his/her influence over parents' preferences or aspirations in relation to education, health, and other issues connected to child development. Depending on the unitary or bargaining models of household behaviour, children are treated either as 'goods' in the consumption vector of their parents (Lundberg, 2009) or as agents with autonomous preferences, thus ignoring their interdependence with adults. Human capital theory neither could nor was intended to capture the bilateral and interdependent nature of child endowment linked to the micro and macro conditions of families, neighbourhoods and the larger community. Nevertheless, it was Bell (1968) who first pointed the oversimplification of unidirectional models out, which assume that the influence runs in one direction, from parent to child. However, the focus on this limitation stimulated scholarly investigations of 'child effects' almost to the point of an equally unidirectional view of children as the main driving force in parent-child interactions (Maccoby, 2003).

Child effects are commonly defined as the ‘*reactions of parents or adults to child characteristics*’ (Bell & Chapman, 1986, p. 595) or as the influence that children have on parents. On the one hand, it recognises a child as an individual with his or her own preferences, expectations and interests within the family unit. However, on the other hand it also acknowledges the child’s dependence on parents’ behaviour, resources and actions. The child’s influence can stimulate positive responses as well as producing stresses for parents and creating situations which require immediate actions on their part. The latter aspect was analysed within a social interaction model of child neglect (Tzeng, et al., 1991; Burgess, 1979). Along with individual parents’ characteristics and the influences of social environment, this approach considers ‘child-related factors’ including his/her demands, behaviour, and disposition within the natural stages of development. The interaction between those three groups of factors is considered as contributing to parents’ neglectful behaviour.

Developmental psychologists typically measure the different domains of children’s lives through a life-course perspective based on the child’s age. As children go through major developmental stages they experience a growing self-confidence in taking action in relation to the range and scope of activities in which they choose to engage. A baby requires constant supervision and care, with parents engaged in stimulating play. The care needs of toddlers and pre-schoolers are also substantial and perhaps not less demanding than the ones for a baby but the role of parents evolves into more interactive support of the child’s growing self-awareness, critical thinking and communication (Bee & Boyd, 2007). Growing independence with age gradually reduces the demand for basic care and the focus shifts more towards a different type of parental input: teaching through play and day-to day activities (Piaget, 1960). Scholars suggest that there is a change in children’s thoughts and behaviour at the age of around five to seven (Piaget, 1960; Vygotsky, 1962; White, 1970; Rogoff, et al., 2008). The demand for parental care is still substantial during this period, but children gradually go through a transition from play activity to learning and more conscious decision making. According to other research, further involvement of children in family decision making increases between the ages of nine and 13 (Yee & Flanagan, 1985). Pre-adolescent age is a time of more inde-

pendence, the development of social relationships and a substantial reduction in demand for basic care from parents. At the same time it is a time of increased children's vulnerability to various problems such as eating disorders, depression and risk behaviour (Bee & Boyd, 2007). Developmental progression into independence and maturity implies very different levels of demand for parental investment or intensity of interaction between adults and children at different stages in life. Empirical evidence confirms the influence of a child's age on parental behaviour and specifically on time input with the majority of time use papers controlling for having children in the household of a certain age (Gustafsson & Kjulin, 1994; Loefmark, 2007; Kimmel & Connolly, 2007).

Economists explain age related variations in parental investments by higher effectiveness of investments at an earlier age: the gradual reduction in productivities or lower child's responsiveness to parents' efforts (Borowitz, 2012). Thus, Cunha & Heckman (2008) extended Becker's and Tomes' model (1979; 1986) to include different periods of parental investment depending on the family life cycle. They argue that parental investments during a child's early years are different from those that happen in later periods, primarily due to the differences in 'returns'. The economic assumption is that investment in period 'A' will produce outputs at the next stage and skills acquired by a child at one stage are transferred to the next level through the mechanism of 'self-reinforcement'. Based on evidence from neuroscience, Cunha and Heckman argue that there are sensitivity periods for parental investments – a child's early years for cognitive skills and later years for non-cognitive skills. They also point out that parental investments tend to be lower at the later stages of child development due to the gradual reduction in how different forms of parental investment such as time and money complement each other. Evidence from other studies also suggests that age related variations in parental time allocations can be facilitated by the flexibility of the labour market (Gimenez-Nadal & Molina, 2013) and the prices of childcare provision (Kimmel & Connolly, 2007).

Gender is another important attribute that is associated with a differentiated parental response. The role of child gender in individual and household behaviour is one of the

most researched areas due to its relevance to the issues of economic and social inequality of women and economic growth. Many studies exploring issues of sex bias in resource allocation between girls and boys generally find strong parental preferences for boys in Middle Eastern and African countries, which are reflected in schooling, nutrition, and health expenditures (Rosenzweig & Schultz, 1982; Ahmad & Morduch, 1993; Sahn & Stifel, 2002; Quisumbing & Maluccio, 2000). There is, however, no universal trend either across regions or continents.

While gender is undoubtedly an important ‘child effect’, the particular country context determines its scale and significance. For example, Russia is a country with relatively low levels of inequality between girls and boys in terms of schooling and health coverage (IISP & UNICEF, 2011). That said, there is little evidence on any ‘boys’ or ‘girls’ effects at home, which could reflect gender preferences in parents’ transfers.

Overall, the evidence suggests the importance of child characteristics for parental investment behaviour. The process of child–parent interaction is complex and bilateral, but as Lytton puts it *‘the questions of “who came first” or “how much” variance is explained by the child or by the parent run contrary to the realities of family relationships. Rather, attitudes, behaviours and relationship are part of an ongoing process’* (Lytton, 1990, pp. 683–697). What is clear cut is that child effects are clearly important ‘shapers’ of parental behaviour. Thus, controlling for the most important child’s characteristics is a priority for our empirical analysis.

Altruism, Reciprocity and Parental Aspirations

Economic theory explains parental motives based on the assumptions of altruism or reciprocal exchange. The altruism assumption (Becker, 1974) implies that parents’ utility (satisfaction) is raised when their children are better off or, simply, when they see them as being happy. The altruist expects no compensation in return. Bernheim et al. (1985) followed Becker’s ideas but articulated them as an exchange assumption. Here, the core notion is that even the most altruistic parents behave rationally in expecting some form of ‘return’ on their investments, in the form of attention, engaged communication, or

support. They might expect, for example, that a grown-up son or daughter will make the effort to pay them a visit.

Empirical evidence on such matters is mixed, again indicating that culture, traditions of inter-family and inter-generational transfers as well the generosity of the national social security system play some part. For example, a recent study based on Chinese household data (Cai, et al., 2006) confirmed that inter-family transfers in low-income households are driven by altruistic motives. At the same time, a study in the Russian context demonstrated that private transfers were made in exchange of reciprocity rather than being guided by altruistic behaviour (Clement, 2002).

The economic benefits of children to parents as a motive for parental transfers have been emphasised in many scholarly works (Schultz, 1973; Folbre, 1996). For many centuries, children were expected to contribute to the real household income by the work they did in the household or on the farm, or by providing support to parents when they became old. '*Children are in a very important sense the poor man's capital*' argues Schultz (1973, p. 5). A significant body of literature examines the role of children as an important source of retirement income (Laitner, 1997; Chakrabarti, et al., 1993; Kabeer, 2000; Browning & Lechene, 2001; Cai, et al., 2006). The general theme in many of these studies is that an expansion of market and government pension provision decrease older parents' dependency on their children. These economic assumptions have been criticised not least by economists themselves for not capturing the complexity of child-parent interaction and motives (Lord, 2002). The 'economic benefits' perspective alone appears to miss important cultural motives and social influences, which play a real role in shaping parental beliefs, ideas, and aspirations.

The educational psychology literature suggests that parental actions depend strongly on three aspects: a) a family's own construct of the parental role; b) parents' sense of efficacy in helping their children succeed in school; and c) the general demand for involvement from children and school (Hoover-Dempsey & Sandler, 1997). According to this approach, parents' construction of their role establishes a range of activities that parents consider important for them to do. Self-efficacy is described as the extent to

which parents believe in their capacity to help children to reach positive outcomes. Finally, demand for involvement implies parents' perceptions in regard to the extent to which a child or a school wants or requires their involvement.

This theoretical perspective gives an insight into parents' motives and beliefs, with the latter being reflected in their confidence in their children's abilities, their own ability to teach, the nature of the child's intelligence and possible achievements. The literature on parental beliefs and ideas from the field of developmental and social psychology is vast and it is beyond the scope of this review to give a comprehensive overview. However, it is important to recognise that empirical evidence is generally supportive of the effects of positive parental beliefs on parental involvement. For example, a study based on US Panel Study of Income Dynamics, with a sample of 3,500 children (Stafford & Yeung, 2004), found that parents with a high interest in child development (one of the proxies for parental beliefs) seek to increase a whole range of inputs to child development, from time contributions by each parent to social capital.

Another powerful factor influencing not only parental involvement but also the perceptions, educational goals and achievements of children themselves are parental aspirations. These can be described as aspirations related to a child's educational achievements (Wentzel, 1998) or future professional success. 'Parental aspirations' is a term which can be contested since the expectations of parents might be reflected in various forms of parental behaviour, from intrusive monitoring of school attendance to creating a positive environment for learning and self-exploration. Many authors attribute aspirations to a set of goals or standards in different areas of a child's human development (Bandura, 1989). A study by Grubb (2008) based on US data shows that high parental aspirations positively affect a child's own aspirations and a young adult's decisions to complete education to a diploma or degree level. According to this study, the combination of parents' low aspirations and low education as well as high aspirations and high education levels are particularly powerful.

Finally, the premise that at any point in time all parents contribute some amount of time and efforts to children can be challenged by evidence of child neglect. Described as an

act of omission by Erickson and Egeland (2001) in parental responsibility it may or may not be intentional on the parents' part. The aetiology of child neglect as an acute form of parental non-involvement is based on the premise of the lack of nurturing with a specific focus on mothers as key carers (Daniel & Taylor, 2006). The literature on child neglect has focused on individual-level characteristics of parents (mostly mothers), such as certain psychological characteristics influenced by their own upbringing (Polansky, et al., 1983), relationships with partners, access to social support (Gaudin, 1996), attachment relationships with children and mental health (Erickson & Egeland, 2001). The role of socio-economic factors in child neglect practices is studied to a much lesser extent, but there is still an understanding that the risks of neglect are greater when there is a combination of factors reflecting low socio-economic status. These are principally low income, low levels of parental education, teenage parenthood, lack of support or an unstable family environment.

There is little empirical testing on these issues in the Russian context and in connection to time use, not least because such a study would necessarily depend on access to measurable data which would reflect these complex issues.

Education, Class and Disadvantage

Parents' education has perhaps received the most scholarly attention as a factor influencing parental investments. It is indeed often a quite consistent predictor of parental input and subsequently of a child's academic outcomes. It can be explained by common genetics as well as 'cultural transmission' (Ermisch, 2003). However, the genetic roots of transmission have been questioned by the studies which found differences in the effect of parental education between mothers and fathers. For example, Leibowitz's (1974) study found that mothers' education was much more important in predicting the IQ of the child than fathers' education which, the author argued, showed that the relationship aspect is more important than the genetic aspect. Cultural transmission implies that more educated parents have higher levels of human capital and are better informed in regard to the benefits of cognitive stimulation, healthy nutrition, and social interaction appropriate to age. Therefore, they will make more effort to provide increased intel-

lectual stimulation, motivation, and a better environment, which involves books, educational trips, etc. (Mayer, 1997).

The study by Saxe et al. (1987) found that better educated middle-class mothers motivated their children by providing more challenging goals and more difficult tasks in mathematics compared to working-class mothers. A qualitative study on mothers' strategies for children's school achievement (Baker & Stevenson, 1986) found that almost all mothers in the sample (over 83%) were very actively involved in managing their children's schooling. They helped their child with homework during the year and had a range of strategies to boost learning. However, the extent of input varied noticeably depending on the mother's level of education; more highly educated mothers were 11 times more likely than other mothers to prepare children academically for the transition to high school.

There is sufficient evidence not only from US time use data but also from comparative analysis of parental time in Canada, Italy and Norway that parental education, especially that of mothers', is a key determinant in parents' time allocation in relation to childcare (Sayer, et al., 2004a; Sayer, et al., 2004b). Guryan et al. (2008), in the cross national study of time use, find a positive influence of parental education only in primary child-related activities and not in relation to the total time parents spend with children. Mothers with a university degree spend roughly 4.5 hours more per week in childcare situations than mothers with a high school degree or lower. The increase in father's time contribution in childcare over time in the UK and US was found to be differentiated by educational attainment in Sullivan's study (2010). Ramey and Ramey (2010) find a higher rate of increase in time spent on childcare among university-educated mothers compared to those without a university education since the mid-1990s in the US. Malathy (1994), in the context of urban India, finds that better educated women reallocate their time from household duties to teaching children, perhaps because they see it as an investment in their future.

Evidence based on US data often relates education to the class structure, suggesting that highly educated middle-class parents apply an intensive form of childrearing which re-

quires high levels of parental involvement (Bianchi, 2010). Scholars note that numerous extracurricular activities demanding parental time for setting them up, managing schedules and children's transportation are driven by middle-class aspirations for better university places for their children (Ramey & Ramey, 2010).

Such intensive coaching, which can also be seen as an overinvestment that Lareau (2003) calls 'concerted cultivation', reflects the general trend in relation to the pressures involved in skill formation in western society. Late-1990s Russia, with its rapid transition to the market economy, was characterised by polarised inequalities and an absent 'middle' (ISR, 2008). This is currently changing with the slow formation of households with distinctive consumer preferences and sets of beliefs (Maleva, 2003; IISP, 2010). The emerging middle class of highly educated, working professional families is likely to behave differently to those parents disadvantaged by their material position, regional or territorial setting. For example, we know that parents in Moscow or St. Petersburg today spend three times more on children than parents in other regions (Roshina, 2011). Meanwhile research testing differences in relation to non-material inputs is lacking in the Russian context.

At the lower end of the social strata the lack of professional education can be closely associated with low social standing or disadvantage in the family. Socio-economic disadvantage is likely to determine a certain pattern of parental investment behaviour as a result of its link to parental beliefs and aspirations. Evidence from qualitative research indicates that parents in poverty are likely to have very different aspirations for their children to middle-class parents. A five-year study of families in the poorest neighbourhoods in Philadelphia in the US found that poor mothers placed most importance on keeping a child housed, fed, clothed and safe, keeping adolescents away from drugs, crime and school failure, and considered these as noteworthy accomplishments (Edin & Kefalas, 2005). The authors contrasted these with American middle-class parenting behaviour, emphasising that although everyday hardships produce modest parenting goals, parents recognise and celebrate every routine accomplishment and consider their parental investments to be of high value to their children.

Overall, empirical evidence from western countries confirms that parental education is a strong determinant of the level of parental human investment. Its effects are often inseparable from the socio-economic status of the family and accumulated human capital. The pressures of the competitive labour market contribute to parents' awareness of the benefits of the human investments in children. However, in emerging economies such as Russia education might not be a very informative measure. For example, using Russian data Gronau (2006) did not find any differentiations in childcare time by the level of parents' education.

Russia's case can be different due to the generally high levels of education supported by high public subsidies alongside distorted opportunities for labour market entry (OECD, 2011b). The level of attainment in Russia might reflect neither family wealth nor the true market returns to education. Over 55% of 25–34 year olds attain tertiary education in the Russian Federation, which corresponds to the top place among OECD countries along with Japan, South Korea, and Canada (OECD, 2012). Yet these statistics do not reveal the persistent institutional barriers affecting the labour market such as inflexible and non-transparent employment practices (OECD, 2011b). So, while parental education is to be incorporated in the framework of our analysis, we need to find the most efficient measure distinguishing between different levels of education and also separate its effects from the influence of the labour market participation and the socio-economic (i.e. income-related) position of the family.

Parents' Labour Market Engagement

A substantial body of scholarly work deals with the effects of parents' labour market attachment on childcare responsibilities. Increased labour market participation of women in the west in the last two decades has resulted in a great deal of academic interest in the subject with a special focus on the gendered division of labour and on relevant child outcomes. The provision of unpaid labour in the family in western countries has altered as more and more children live with mothers who combine full-time work with full responsibility for children (Bianchi, 2010). The literature consistently shows some reduction in mother's time with children (Gauthier, et al., 2004; Bianchi, et al., 2006;

Sandberg & Hofferth, 2001; Kendig & Bianchi, 2008), but this reduction is perhaps less significant than otherwise would have been expected given the structural changes in women's labour force participation over time (Bianchi, 2000). Empirical evidence from European countries provides some confirmation that mothers have to reconcile increasing financial pressures – which are primarily responsible for their re-entry to the labour market – with high normative expectations in regard to their caring responsibilities (Meulders & Gustafsson, 2004).

The time allocation theory stipulates that mothers' labour force participation increases the cost of childrearing, constraining the time she can spend with her children. It also indicates that mothers accept forgone earnings to rear children because parents specialise according to their comparative advantage. The empirical evidence is mixed. Hallberg and Klevmarken (2003) find that the direct effects of market work on time spent with children is weak and only fathers' market hours were shown to have some statistically significant influence. Kalenkoski et al. (2005) find some evidence that parents who spend more time on childcare as the main activity contribute significantly less time in paid work, which according to the authors suggests a direct substitution. Malathy's (1994) study based on Indian data supports the theoretical propositions as an increase in an individual's own wage leads to a reduction in time spent on non-market activities, specifically on teaching children.

It is unclear to what extent trends in reconciling work and childcare found in western countries are relevant for empirical investigation in the Russian context since its labour market trends do not follow western patterns. Russia's economic transition in the early 1990s resulted in fluctuating rates of labour market participation and tough demographic choices (Karakhanova, 2006). The downward trend in Russian women's labour participation is primarily explained by structural factors rather than personal choice, principally a reduction in paid work hours due to sharply worsening economic conditions and high unemployment levels in the late 1990s. Karakhanova's study (2006) also shows that in the early 2000s the number of working fathers who participate in activities

with children decreased, but it also showed that those who are involved now spend more time with their children.

While the share of Russian women's paid and unpaid work declined by a quarter over a period of 40 years, this did not directly benefit the children. The relative share of working women involved in childcare remained stable (at around 48%) and the time devoted to this activity actually decreased by more than a third: from 5.5 hours per week in 1965 to 3.2 hours per week in 2003/2004 (Karakhanova, 2006). The 'time reserve' that resulted from the significant decline in formal working hours was thus not used to increase activities with children, but rather to expand physiological activities (sleep, self-care, medical care, etc.). This implies that direct reference to or extrapolation from parental time allocation behaviour and the effects of work observed in western studies to the Russian context could be problematic or unproductive. The welfare regime as well the labour market transitions which formed the experiences of Russian parents today were quite unique.

Meanwhile, Russian scholars examining time use issues have focused on trends and composition of time allocation decisions rather than their explanations (Artemov, 1990, Patrushev, 2003; 2005, Karakhanova, 2003). There is thus limited empirical support on the effects of parents' labour market participation on childcare activities in recent years, especially under conditions of material stress.

The evaluation of evidence on the factors affecting parental time investment strongly points towards two groups of influences: resources and demands. Resources come in the form of household wealth, parents' human and social capital, and time availability defined by labour market engagement. Demands are shaped by a child's characteristics, including ongoing need for care and parental beliefs, ideas, understanding of their role and aspirations – all of which are based on social norms and prevailing cultural perceptions. While welfare provisions or the macro-economic environment can also be included in the group of resources, there is little evidence to date on their direct effect on individual parental behaviour.

Our next step is to examine economic stress in the broad context of persistent and transitory material pressures and discuss prior contributions to the analysis of links between economic stress and parenting.

2.3 Economic Stress and Parental Behaviour

What is Economic Stress?

There are many different definitions of stress in the popular dictionaries. For example, the Oxford English Dictionary (Oxford English Dictionary, 2010) identifies it as ‘*a state of mental or emotional strain or tension resulting from adverse or demanding circumstances*’. Similarly, the Merriam Webster Dictionary states among other definitions that it is a state ‘*of bodily or mental tension resulting from factors that tend to alter an existing equilibrium*’ (Merriam-Webster, 1994). Generically, it can be seen as a permanent or temporary force disturbing the normatively desired ‘equilibrium’. When combined with the word ‘economic’, the meaning specifically refers to tension resulting from factors of an economic nature. Family researchers refer to it as economic strain, economic hardship, economic distress, economic pressure, or financial strain, which all imply: a) an inability to meet financial obligations; b) uncertainty in regard to income sources; c) instability in terms of employment; and d) inadequacy of earnings to meet the needs and desires (Fox & Bartholomae, 2000). Factors contributing to economic stress can be a product of macro as well as micro events, can last for an extended period of time or can be transitory, can have a normative meaning (as a conflict between what is expected and what is achievable) and can be situational. The common feature among them all is a contraction of material resources and the need to adapt or cope with the change.

Economic stress can have many ‘faces’. Poverty is one of them. In order to understand the connection between economic stress and poverty in the context of this study it is important to disentangle the different meanings of the latter. Poverty is a universal but socially constructed concept, the meaning of which depends on who uses it and in what context. Since the distribution of limited material resources is at the core of chosen policy actions to relieve poverty, its definition has always been a part of politically driven

debate (Lister, 2004). Historically, some alternative concepts of poverty based on the ideas of subsistence, basic need, and relative deprivation gained support (Townsend, 2006). At the core of the notion of subsistence or its extension of “basic need” is the fulfilment of basic physical necessity or unacceptable hardship, with hunger as an extreme example. Physical needs can change under evolving economic conditions as the cost of food or other necessary material input changes over time. The breadth of this conceptual idea is not fixed and could include items from basic shelter, food, and clothing to local services or cultural facilities.

In 1979, Peter Townsend offered the concept of relative deprivation (Townsend, 1979), which became a dominant concept in the countries of the European Union including the UK. Criticising the subsistence approach, Townsend argued that individuals are expected to perform certain social functions in society and therefore we have to account for social needs. With material resources significantly below those who enjoy an average material well-being in that society individuals are unable to perform these social functions. This leads to exclusion in the form of non-participation in ordinary living patterns and activities.

Another influential approach to the meaning of poverty, known as the capability approach, was formulated by Amartya Sen (1989) as a set of functions reflecting what individuals can and cannot do. It stimulated a fundamental shift in understanding human welfare, but has not been widely accepted as a measure of poverty due to difficulties in operationalisation of its terms (Saith, 2001). With a variety of contextual interpretations, the general trend has been towards a broad multi-dimensional view of poverty with income being an integral core. Moreover, there is wide recognition of the importance of subjective meanings of poverty, namely the experiences and perceptions of those very people who are described as deprived in the society.

Whichever meaning of poverty is used, it is well understood that poverty experience can be characterised by accumulative risk exposure. The latter is also found to be associated with psychological and mental health problems such as stress or depression (McLoyd, 1990; Evans, et al., 2011). Moreover, when we consider poverty within the dynamic

framework (Smith & Middleton, 2007), ‘stress’ implies movement in and out of poverty (departure from normative equilibrium) or departure from a desired level of material well-being (falling into poverty). As economic stress does not necessarily entail a fall in the household income below the poverty line as it is defined within a specific policy context, they have to be considered as overlapping but not identical notions.

Failures on the part of families to cope with income fluctuations and income shocks not only affect households’ ability to pay bills, provide adequate nutrition and attend to health needs, but can also lead to a lower than socially desired level of parental investment and unequal intra-household allocations of resources (Dercon, 2002). We consider economic stress in a broad framework including transitory income fluctuations caused by external and internal (i.e. within the household) factors. The literature distinguishes between aggregate and idiosyncratic economic shocks. The aggregate shocks often refer to the effects of the macro-economic cycle – expansion (‘booms’) and contractions (‘busts’) – or to natural disasters like draught or hurricane. Idiosyncratic shocks are those that affect a household or an individual, such as the death of the breadwinner, illness, loss of employment, etc.

An unexpected income loss can make parents reassess their child’s ongoing and future human development needs. The change in the balance of time and money can modify their investment choices. Becker and Tome suggest (1993, p. 267) that *‘parents must finance investments in children by selling assets, by reducing their own consumption, by reducing the consumption of children, or by raising the labour-force activities of children’*. In an environment with limited capital or insurance markets, parents have to finance their child’s education from current ongoing income. This could lead to a substantial redistribution of resources between family members or some reduction in child-related expenditures or both (Pasqua, 2005; Jensen, 2000; Jacoby & Skoufias, 1997). Whether similar adjustments affect child-related time allocations in the family is less clear due to ambiguous outcomes in terms of counter forces and limited empirical evidence. Therefore, we have to consider theoretical approaches which link economic stress and parenting.

Theoretical Approaches

Our understanding of parental investments under economic stress begins with one of the most influential theories connecting material hardship, parenting and its outcomes. It is the perspective on coping and social adaptation behaviour offered by the ‘stress theory’ and its extension – the ‘family economic stress model’¹ (Conger & Elder, 1994; McLoyd, 1990; Conger, et al., 2002; Conger, 2005).

Stress theory originated in Hill’s (1949) research on post-war American families examining war-imposed separation and reunion. This work formulated an adjustment process within an ABC-X (crisis) framework. According to Hill, A is a stressor or stressful event (related hardship), which interacts with B (families’ crises in terms of meeting resources), which in turn interacts with C (what a family makes of the event, its subjective perception of the seriousness of the event), and produces X (the crisis or recovery). The key insight of this model is that a stressful event, such as income loss or reduced resources, can cause changes in family interaction, family goals, roles of family members, and values (together or independently from each other). The direction and extent of adjustment will depend on the economic as well as psychological resources of family members and their perceptions of stressful events (Yeung & Hofferth, 1998).

The theory emphasises that subjective perception of the stressful event is important in determining the household response. A family, which perceives income loss (or another stressful event) as a crisis and has no resources to cope with it, will be much harder hit in the short run than a family which does not see a situation as so dramatic or does not expect it to last long. The difficulty, however, is to distinguish the individual characteristics contributing to a family’s recovery (such as positive attitude, support network, level of education, etc.) from the effect of the event itself.

During the 1960s and 1970s, the family stress theory was influential in drawing academic attention to the conditions, resources and coping mechanisms that families use in

¹ The terminology used somewhat varies in the literature. The earlier papers presented this as the “stress model” or “stress theory”, later referring to it as “family stress theory” and less frequently as “family economic stress theory”. This has to be distinguished from parental stress, which means a transmission mechanism within this model.

order to overcome hardship and the stress associated with it.² It states that economic hardship can lead to economic pressures due to unmet material needs, which in turn can cause parental emotional and psychological distress. Depending on the availability of other resources this can lead to negative parental and consequently negative child outcomes. For example, parental stress caused by material pressures is featured prominently in studies related to child neglect and abuse.

The family stress theme can also be found in studies of child neglect. For example, the 'personality view' of child neglect (Polansky, et al., 1983), which is based on parents' deficiency (including infantilism) as a source of neglectful behaviour, also incorporates undesirable social conditions such as poverty and isolation as stressful factors, which contribute to both stress overload and parents' character disorder. Importantly, it recognises the role of socially defined factors and, in line with the family stress model, highlights its interaction with parents' individual characteristics (resources), including subjective well-being.

It is important to contrast the family stress model with a cultural perspective, which focuses on long-term or inherited disadvantage in explaining the causes of the 'poverty cycle'. Contrary to the family stress model, this view examines not the deviation from the status quo – 'economic stress' – but rather why this status quo (specifically parental practices) in materially deprived families is different from the rest of the population. The notion of a 'culture of poverty' first offered by Lewis (1966) has been one of the most prominent as well as widely criticised theoretical hypotheses (Leacock, 1971) connecting poverty (economic disadvantage) and parenting. It stressed the fatalistic nature of certain subcultures that are prevalent in some materially deprived underclass groups.

This perspective explained the existence of certain parental behaviours by the culture of attitudes, norms, values and beliefs developed under the experiences of persistent poverty transmitted across generations. It has recently given way to a more narrowly de-

² For a review see (McCubbin, et al., 1980).

defined paradigm which is careful to distinguish values from perceptions and behaviours from attitudes (Small, et al., 2010). A new wave of cultural studies (Ermisch, et al., 2001; Yaqub, 2002) highlights the role of institutions in shaping specific cultural beliefs. These studies point to the possibility of different parental practices and approaches among disadvantaged families as opposed to the ‘concerted cultivation’ among more affluent parents (Lareau, 2003).

A number of qualitative studies examining parental practices and processes under multiple disadvantages consistently highlight the authoritarian or harsh disciplinary methods of mothers who are in a situation of cumulative disadvantage (Arditti, et al., 2010). They also stress that such practices do not exclude strong advocacy on a child’s behalf or the support of children to meet their basic material needs. A comprehensive review of the literature on poverty and parenting undertaken by Katz and colleagues (Katz, et al., 2007) come to the conclusion that, given the multiple complex pathways from poverty to parenting, the majority of parents in poverty possess adequate parenting skills.

The applicability of the cultural perspective to the Russian context in its original form is debatable. In Russia, poverty as a social problem came to light in the early 1990s, as a direct result of ‘shock therapy’ reforms. The policies of full employment with suppressed wage differentials meant that welfare distribution aimed to be egalitarian (Sachs & Woo, 1994), but was based on a unique system of differentiation through the system of rewards and in-kind benefits. It is likely that the inter-generational transmission of specific perceptions and values across generations was more driven by common ideological values than by poverty per se. At the same time, it is undeniable that Russia inherited territorial – chiefly urban–rural – and regional inequalities from the Soviet past. Indeed, the ‘ruralisation of poverty’ in Russia (Gerry, et al., 2008; Klugman & Braithwaite, 1998) is a well-studied phenomenon. But while territorial socio-economic inequalities have received a great deal of attention in Russia, knowledge about disparities between children in regard to non-material resources come from occasional, small-scale qualitative studies focused on one locality (Alekseeva, 2012). Using a nationally representative sample of children, our study aims to account for a territorial divide in

the examination of children's time with parents along with their poverty experiences. This, to our knowledge, has not been done before in the Russian context.

Finally, we look at the permanent income hypothesis, which was developed within the field of economics. Since parental investments are often about finding the right balance between available material resources and time, the economic perspective on how households respond to a change in the pool of material resources might prove useful in explaining time allocation decisions.

General micro-economic theory utilises the permanent income hypothesis introduced by Friedman in *A Theory of the Consumption Function* (Friedman, 1957) and developed by Hall and Flavin among others (Hall, 1978; Flavin, 1981; Carrol, 1997) to explain the household's adjustment behaviour during income fluctuations. The central idea of this hypothesis is that people make their spending decisions based on what they consider their normal or 'permanent' income and their expectation of the duration of the income change. Any income fluctuations from month to month or year to year might not have any effect on households' spending because it will be adjusted in accordance with the expected 'permanent' income. In other words, the family tries to save in time of prosperity and borrow at leaner times. Overall, a family's consumption or spending at any moment in time depends on longer-term income expectations rather than on their current income situation. When income is expected to bounce back quickly or be higher in the longer term, a household will maintain its 'pre-shock' income level of consumption. This might affect time spent with children indirectly through decisions about changes in labour supply or extra efforts in income-generating activities.

Closely related to this theory is the notion of consumption smoothing occurring at the time of aggregate or individual income shocks. Such an idea suggests that household consumption follows a smoother pattern than income because households employ a variety of risk sharing or risk-management strategies at times of crisis (Townsend, 1994). When a family has no savings, assets, or access to capital markets, as is often the case for low-income households, it is likely to employ a number of strategies to protect, restore or redistribute their aggregate consumption. This in turn might demand parents'

time resources and take them away from child-related activities, especially in areas such as spending leisure time together.

Although being primarily guiding principles for studying the consumption behaviour of households and individuals, these two perspectives helps us to understand the conditions under which parents will seek to complement their income (i.e. to smooth consumption), which in turn will affect time allocation. Its emphasis on the subjective perception of events, which can be determined by the level of parents' education (Yeung & Hofferth, 1998), is also in tune with the family stress theory.

Overall, the theories we have reviewed indicate that parental response to economic stress seems to depend on the individual and household resources available at times of crisis. Adjustments in time allocation decisions will likely be mediated by parents' subjective perceptions of events but can also be affected by the coping or income-generating strategies induced by the loss of income. What is not very clear from the models is how a crisis or shock to material resources acts in regard to the current responsibilities for child-focused activities (Burchardt, 2008) and whether child related time input is adjusted under changed priorities in the family. Thus, the inclusion of appropriate indicators of coping strategies is imperative for our empirical analysis.

Empirical Evidence on the Effects of Economic Stress

The empirical evidence generally attests to the influence of economic/material pressures on parental stress and corresponding outcomes. The impact of parental coping strategies on adolescents' health and family functioning were the focus of a number of earlier studies (Elder, et al., 1985; McCubbin, 1988) which applied the family stress model. In recent decades, more scholars have applied the family stress model to analyse family adjustments to income instability and outcomes for adolescent children. The series of studies on the same targeted population shows the mediating role of social support and strong family relationships, as those parents who have them were less likely to be affected. Based on US data, Yeung (1998) demonstrated that a job-related income shock induces substantial changes in family behaviour: white as well as black families often

adopted strategies that ‘disturb’ family processes and that therefore could negatively affect the well-being of family members. Also, according to the study, a major economic shock significantly increased the likelihood of a marital dissolution, applying further emotional or physiological distress to family members.

The links between socio-economic disadvantage and the socio-emotional well-being and cognitive functioning of children and adults has been confirmed in a number of recent studies (Bradley & Corwyn, 2002; Conger, 2005). Yeung et al. (2002) found that the level and stability of family income has an effect on a child’s cognitive scores. Specifically, the researchers found that income instability was consistently associated with a mother’s emotional distress, which in turn was associated with her more punitive behaviour and affected cognitive outcomes.

So, overall the family stress model finds some empirical support. But some studies indicate that the association between material pressures and parental outcomes does not have to be negative. Thus, Gershoff et al. (2007), using the Early Childhood Longitudinal Study (US), show that indirect measures of material disadvantage (food insecurity, residential instability, inadequate medical care and the family’s financial troubles) rather than income per se almost entirely predict the level of stress experienced by parents. However, contrary to previous research, the study finds an association between stress and positive parental behaviour, which in turn explains increases in child’s cognitive skills and socio-emotional competence respectively. The authors explain the unexpected effect of stress on positive parenting as a possible effort to compensate for material loss by extra warmth, cognitive stimulation, and less physical punishment. This finding opens door for further research on the compensatory strategies of parents who can or want to protect children with extra non-material resources (i.e. extra time and attention).

Most of the evidence on the effects of income shocks comes from the field of international development. This is perhaps due to the higher exposure of developing countries to socio-economic shocks and their weaker social security systems. The primary focus in this body of literature has been on child education and labour. The latter is often seen

in developing countries as a family coping strategy to smooth consumption (Duryea, et al., 2001). Empirical evidence suggests that short-lived income shocks can force parents in extreme cases to take their children out of school in order to either reduce the cost of schooling to the family or gain extra income by getting help in household production, etc. (Jensen, 2000; Beegle, et al., 2003; Dehejia & Gatti, 2005; Guarcello, et al., 2010). The studies indicate that parents facing a trade-off between current family needs and a child's current experiences and welfare can choose the former. Putting children into work helps reduce the family hardship but also compromises not only the quality of childhood but the child's chances of human capital accumulation.

Meanwhile, the evidence from the UK on children's food intake points to the protective nature of parents' behaviour in times of crisis (Middleton, et al., 2007). Study by Stillman and Duncan (2008) based on Russia data examined the impact of short- and long-term variations in household resources on a child's nutritional status. Their analysis unambiguously shows that whereas diet quality fell when income collapsed, energy intake remained unchanged during the crises. It is likely that parents value food and their child's diet as a basic need, thus giving it high priority even when times are tough (Mistry, et al., 2008). We do not really know whether the protective nature of parents works the same way for the social needs of the child and whether parents adjust their time with children due to changed household priorities.

Various scholarly works employing Russian data have tested the consumption-smoothing framework by examining the extent to which cash income fluctuations and/or changed macro-economic conditions affect households and individual behavioural choices (Skoufias, 2003; Lokshin, 2004; Dore, et al., 2003; Clarke, 2002). It is generally found that the presence of children reduces the ability of households to cope with economic shocks in Russia (Denisova, 2007). At the same time, families with more than one child are more likely to use more active strategies to cope with crises than to rely entirely on cutting spending (Lokshin, 2004). This is consistent with the argument put forward by Gerry (2007): larger and younger households can be more adaptive to economic setbacks but only to a certain point when children become 'costly'. Overall,

this body of literature demonstrates the high vulnerability of Russian families with children to income shocks despite their high levels of adaptability. However, there is little evidence on whether Russian children lose out on social interactions at home or are compensated by extra attention or care at the time parents cope with income shortages.

The evidence on the effects of income shocks on children's human development in post-industrial economies and transitional countries is scarce. A wider availability of credit and well developed social security systems are understood to be a reliable safety net against income shocks for families with children. One rare recent study – a collaborative work between German and British researchers using the UK Labour Force Survey – investigated the extent to which early school leaving (at the age of 16) may depend on variations in permanent income, parents' education and transitory shocks to income (Chevalier, et al., 2005). It finds that the effects of shocks to a family's income were important factors in young people's decision not to remain in post-compulsory schooling. Shocks to income at the age of 16 were also significant for GCSE performance, which might potentially indicate the psychological pressure experienced by young people.

Whether idiosyncratic shocks alter parental time use in the family has a very limited empirical base to enable us to recognise a specific trend.³ There are works examining the effect of sickness (proxying for idiosyncratic shocks) on adult time use (Ilahi, 2001) or the effects of unemployment on a combination of consumption and time use (Ahn, et al., 2003). The latter study, carried out utilising cross-sectional data, finds that unemployed men use their increased time budget on job searches while unemployed women use more time for personal needs. Thus, filling the significant literature gap in regard to the effects of income shocks on parental time inputs is of academic as well as policy interest, and will teach us more about the non-material resources children receive at times of material crises.

³ Some examination of income shocks and time allocation decisions were undertaken within labour economics, such as Burdett et al. (1984).

A little more has been done very recently on the effect of aggregate shocks on parental human investments as measured through time inputs. A few recent studies mostly looked at this through the prism of aggregate unemployment and the effect of ‘unemployment of others’ on individual time use (Burda & Hamermesh, 2009; Gimenez-Nadal & Molina, 2009; Morrill, et al., 2012; Bloemen & Stancenelli, 2008). The recent global recession of 2008–2009 seems to have stimulated scholarly interest in the effects of aggregate shocks on time allocation decisions. The fact that the situation is of a global nature and threatens to become entrenched in the economic life of many countries seems to pose new puzzles and questions about the nature of the processes affecting individuals, families and children.

We are not aware of any work that has specifically focused on child-related time allocations during the recent recession. Morrill, Sandler, and Wulff (2012) consider this aspect, but only in parallel with their main interest, which is in spouses’ time together. Ginja (2010) incorporates child-focused time investment into the micro-economic framework of human capital investment under income shocks, but the data used fall short of the years of the current recession (1979–2006).

The existing studies indicate that childcare time might increase during a recession: for example, Aguiar et al (2011) find that roughly 25%–30% of the foregone market work hours are allocated to increased home production and approximately 5% to increased childcare. Edwards (2011) finds that when unemployment is high young men increase their time playing with children in the household, but decrease most of the other time allocations with children, especially reading. Evidence from Russia’s 1998 crisis (Gronau, 2006) points towards fluctuating but not declining parental childcare time over the pre-recession and recession period.

The empirical evidence on the effects of cyclical aggregate shocks on child-focused activities is limited as the research here is in its infancy primarily due to the limited number of long panel data sets that can be used to study macro-level fluctuations (Aguiar, et al., 2012; Gronau, 2006; Gimenez-Nadal & Molina, 2009). Another reason is perhaps

the complexity of the possible paths from macro-level factors to individual responses and the presence of a significant number of unobserved characteristics.

The identified knowledge gaps regarding the effects of macro-level and idiosyncratic shocks prompt us to formulate our research questions as follows:

- To what extent does economic stress, associated with poverty experience, contribute to the disparities in the level of received parental care and attention between children? (Chapter 4)
- What is the relative role of poverty experiences in explaining lack of parental involvement in child-related activities? What groups of children are likely to be at risk of joint parental withdrawal from care and leisure interaction? (Chapter 5)
- Do drastic changes in macro-economic conditions (associated with the recent recession of 2008-2009) directly influence parental time allocation adjustments? (Chapter 6)
- How do parents respond to the idiosyncratic shocks in the household, which result in significant contraction of financial resources? To what extent do parents' subjective perceptions and coping strategies facilitate this process? (Chapter 7)

Our study will be among the first examining the direct effect of idiosyncratic shocks and the recent economic crises on ongoing parental human investments. Thus, we will be among the first to present evidence on children's experiences during a recession on a nationally representative sample of children.

Summary and Conclusion

This chapter critically explored the concept of parental investment through a broad cross-disciplinary examination of parental contributions to children's human development. It discussed Becker's parental investment and time allocation theories as complementary theoretical foundations for our analysis. We highlighted the most relevant critiques and extensions of these theories, particularly the role of social capital as de-

fined by Coleman (1988), the influence of social norms and institutions as pointed by Folbre (1996), the importance of accounting for child effects (Bell & Richards, 1968), and the conceptual merger of time and income poverty (Burchardt, 2008). We argue that despite the comprehensive analytical propositions these theoretical approaches still do not fully account for the dynamics of parental response to economic shocks.

We defined the phenomenon of ‘economic stress’ by distinguishing several of its overlapping dimensions: material strain related to moving in and out of poverty, income shocks and macro-economic pressures. We examined the key propositions of the family stress model (Hill, 1949), contrasting it with the cultural perspective (Lewis, 1966) and permanent income hypothesis (Friedman, 1957), which all attempted to explain the mechanisms and possible outcomes of economic stress on individual (including parental) behaviour.

Overall, the review of these relevant theoretical approaches has shown that neither of the theories can provide a comprehensive framework for our analytical task independently of each other. Moreover, the merger of parental investment theory with the family stress model has not been applied to time allocation decisions before and under a dynamic framework. This means our empirical investigation has to draw on these theories by incorporating them into a new analytical framework appropriate for our empirical task.

The analysis of empirical evidence on the factors motivating and guiding parental behaviour in general pointed towards two groups of forces. We identified them as *resources* and *demands* for child-related involvement. The latter is a product of both need for and desire to contribute time for interaction with a child. Both groups of factors seem to have some influence over parental processes and time allocation decisions, with the effects of parents’ education most prominently acknowledged by the literature. The empirical evidence also showed us that the effects of persistent disadvantage on parents’ behaviour and children are likely to disrupt parental practices in various ways (Katz, et al., 2007). We underlined the importance of parental perceptions and psychological well-being in facilitating their adjustment to economic pressures.

Growing inequalities within Russian society entail a special emphasis on understanding and explaining the gap in human resources that children receive today in their families. There has been no study of parental time allocations in Russia which would identify its linkages with material disadvantage in the post-1998 crisis environment or from a child's well-being perspective. The critical review has shown that there is little empirical evidence outside the US testing the economic stress theory in regard to the level of parental time input or within a dynamic framework of persistent as well as transitory material stress. Extrapolating the evidence from the western world or from developing countries to emerging economies which have a very different political, social and economic context seems to be not appropriate. There is also a distinct lack of analysis of parental time inputs in families experiencing persistent poverty as opposed to transient poverty. Understanding how material stress affects parenting and whether the fall in material resources is compensated by extra attention and care provided by parents seem to be a timely and important empirical task for Russia's post-transition society, and indeed for the wider East European context.

Chapter 3

Research Data and Methodology

3.1 Study Scope and Key Concepts

In the previous chapter we defined the role of parental human input within the broad framework of parental investments in children's human development. We conceptualise human investment as a parent's decision to be involved in a particular child-focused activity and the extent of this involvement. We make the assumption that such parental involvement implies direct communicative interaction with a child or children in the family, which aims at supporting the child's physical, social, and learning opportunities within the family environment or local community. The inclusion of the local community is intended to recognise that interaction with a child and his/her supervision can take place outside the formal physical structure of the household dwelling unit, such as in the local park, in the community playground, or even at another relative's home.

We recognise a child as the main beneficiary of parental human investments but also as an important 'shaper' of parents' resource allocation decisions over the family life cycle. Choosing a child as the unit of our analysis is consistent with our research perspective and enables us to account for the child's own characteristics, existing family connections such as siblings and grandparents, and corresponding external childcare input.

The broad goals of our research are: a) to identify and explain the disparities or polarisation between Russian children in the level of parental investments; b) establish the relationship between parental decisions of non-engagement in child-related activities with children and economic stress; and c) investigate whether and how parents adjust to macro-economic changes and idiosyncratic events. This chapter is going to explain and discuss the methodological path chosen to achieve this research objective, as well as present the data which provides us with the foundation for our analysis.

Measurements of Parental Investment

According to our research focus and to the theoretical foundations discussed in the previous chapter, the most direct measures of parental human investment are as follows:

- Parental *involvement* measured through participation in leisure interaction and care for a child at any point in time over a month. We believe that parental involvement at any point in time is a function of severe institutional- or individual-level constraints for such involvement, but it can also reflect parents' willingness to be involved according to social and cultural norms. The decision of whether to play with a child (for instance, over the course of a week) is a different one from the question of how much to play. One can argue that the assumption of a rational decision on the matter is a debatable proposition, since the parents in question might not necessarily have much choice over the issue due to domestic work burden or long working hours, which both entail there is limited time availability for children. Yet it is not unreasonable to suggest that unless parents are physically separated from a child by distance, divorce, or other institutional barriers, they always have a choice to spend some time in interaction with a child no matter how difficult it is.
- The *amount of time* mothers, fathers, and possibly other family members allocate to child-centred activities. Here we focus on the quantity rather than quality of time. The rationale for such an approach is twofold: firstly, we treat the quantity of parental time as a measurable non-material input which reflects 'the flow' of resources to the child, thus matching our concept of parental human investment. This does not imply that quantity of time input is more important than quality, but just as the total hours/years of formal schooling received by a child matter in terms of development (as opposed to the quality of received education) so too do the total hours of parental input matter for the accumulated social, emotional, and psychological competency of a child, especially in the early years. Secondly, the rationale is also in the possible applicability of this measure for policy purposes. As one of the key social indicators, time is the most straightforward marker of the existing disparities between children in terms of care and attention within a family. As such, it can be useful in monitor-

ing policy interventions and/or serve as complementary indicator of a child's welfare in addition to income-related measures.

3.2 Theoretical Framework

Distribution of Child-Related Time Input

The discussion of theories presented in Chapter 2 exposed the need for us to develop a theoretical framework which can integrate economic perspectives on parental human investment with theories on economic stress, allowing for analysis of 'stock' as well as of 'flow' of time inputs over time.

Figure 3.1 shows an outline of our theoretical model, which we call Parental Time Equilibrium framework (PTE). The model reflects individual decision making rather than joint parental or collective family time allocations. While some resources can be pooled, the model has to recognise bargaining and gender differences as they relate to parental behaviour. It specifies the individual allocation for a child or children in the family (one single dot on the time allocation scale).

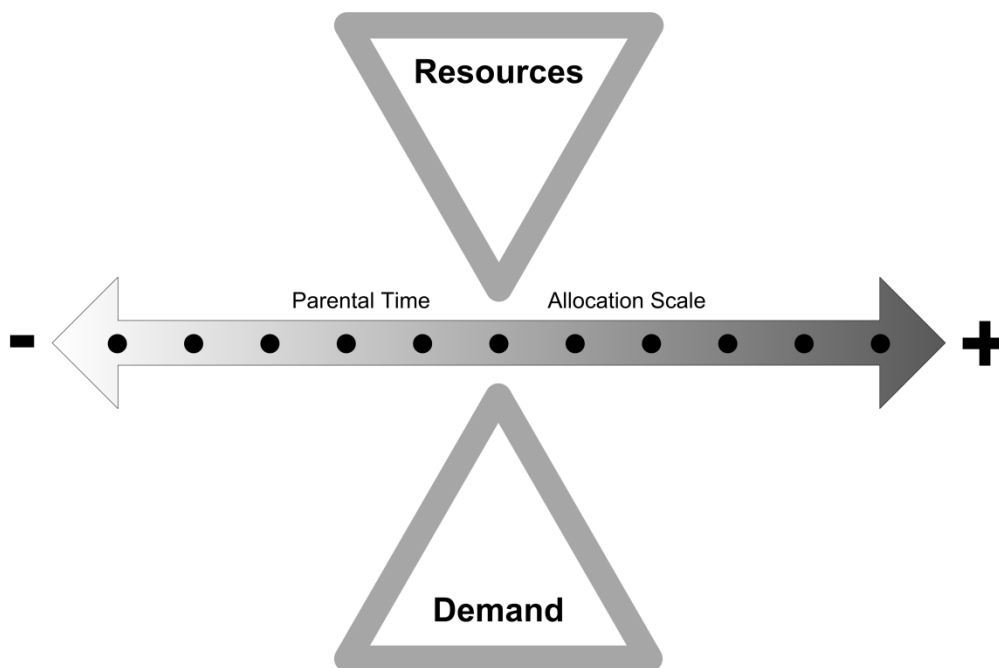


Figure 3.1: Resources and Demand in Equilibrium

Parental time allocation is shaped by two groups of factors: *demands* for child-related activities on the one hand and available *resources* on the other. We will present a more detailed specification for each group below. *Resources* and *demand* meet at the point of equilibrium – a point with a hypothetical strategy or goal which parents find within the defined need and constraints. Each point on the parental time allocation scale can be a different equilibrium, thus reflecting a different demand and corresponding set of resources. We make an assumption that this point of equilibrium is efficient or optimum from the parents' perspective. The parental time allocation scale can also reflect variations between children from different families, from the extreme lower end (zero time) to the highest possible levels (24 hours). In other words, some parents choose to spend a lot of time with children and some significantly less, but each parent acts at a point where his/her demand meets existing resources.

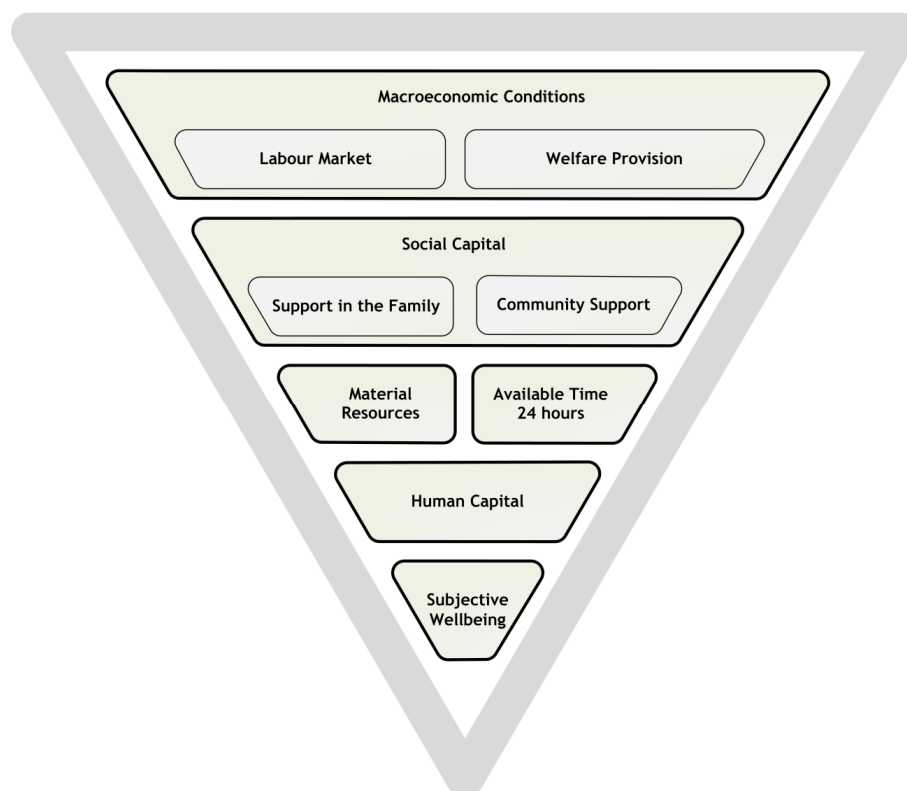


Figure 3.2: Resources

Figure 3.2 explains in more detail the composition of the group 'Resources'. It generally follows an ecological approach (Bronfenbrenner, 1979), showing the levels of influences from micro- to macro-level factors.

Subjective well-being is the individual-level resource described as parents' mental, psychological and emotional capacity. It is a resource which shapes individual perceptions. It can include self-efficacy or parents' confidence in their abilities as parents, professionals and individuals.

Key family resources are represented by the combination of money and time. According to Becker's framework, this block includes the opportunity cost of time determined by labour market wages. Parents' human capital is a vital resource which can include the realised market return on education, health and parents' work experience.

The next outer level is social capital, which is for the purposes of this study defined as the support received from family members, friends and extended family. Generally, it can reflect either inclusion in or isolation from the community through participation and barriers of access to information exchange channels.

We define the outer layer as the macro-economic conditions in which parents live and work. Among the factors which might affect their time allocation behaviour, we highlight local labour market conditions and policies as well as existing public provision of childcare. The latter can include public subsidies or direct provision of childcare, schooling and the child-related system of benefits. This constitutes a resource because it can directly influence opportunities as well as constraints in terms of the parental time contribution.

Figure 3.3 presents the composition of demands for parental time input. We start with the inner layer of child characteristics as the base line of demand for parental involvement. The children's age, the number of children in the family, children's health and their disposition and other unobserved characteristics are likely to define the scope of responsibilities and opportunities for parents' interaction. As highlighted in the literature review, the principle of reciprocity in the child-parent relationship is important. Parents' aspirations are sensitive to the child's capabilities and to developmental stages, so they constantly evolve within a formed framework of specific parental beliefs.

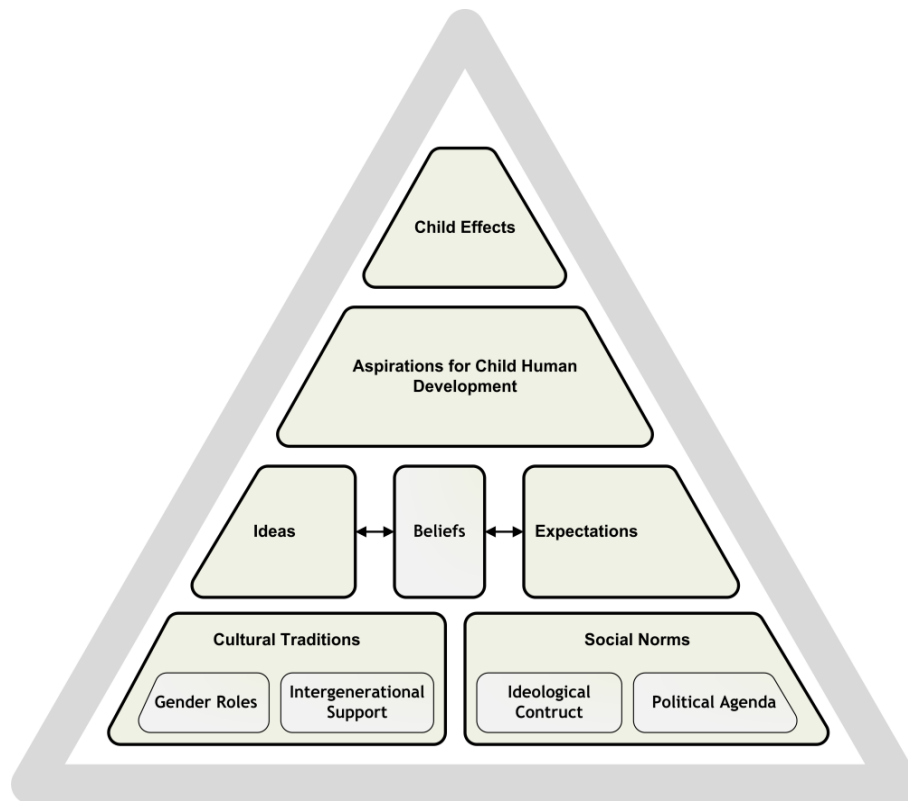


Figure 3.3: Demand

Thus, the next outer layer is the beliefs, expectations and ideas about their parental contribution and expected outcomes. This is how parents understand their role and how they perceive the benefits of their interaction with the children. As Chapter 2 has shown, these perceptions and beliefs are extremely important in feeding in parental aspirations. Although parental beliefs, values and ideas can evolve and change over time, they are generally shaped by what we describe as cultural traditions and by the social norms accepted in the society.

These cultural traditions include entrenched perceptions in terms of inter-generational support and the specific gender roles assigned to fathers and mothers. We understand social norms as the accepted society and community beliefs and expectations in regard to the role of parents, influenced by a political or ideological agenda. For example, in the Russian context the soviet ideology shaped the parental role as collaborators and partners of the state in bringing up future productive citizens. Cultural and social norms are difficult to separate or consider in isolation from each other as some ideological agendas can try to reinforce particular cultural norms or shape new ones through poli-

cies and information campaigns. We can also include here public norms (legally defined or socially accepted) on the minimum levels of parental responsibility.

The model is intentionally simplified to retain clarity within the vital core. The linkages and influences between the blocks in this group are not necessarily unidirectional or passing through one another, but they are interrelated. For example, parents' human capital is a resource which is crucial in securing not only material resources but in terms of its influence on time availability as a result of parents' attachment to the labour market.

This model is similar to the one offered by Burchardt (2008), in which individual time allocation decisions are determined by resources and responsibilities. However, our model is different in that it focuses on child-related time allocations only and, therefore, based on the literature, stipulates a more detailed hierarchy of external and internal demands for child-related activities. Our model also extends the group of resources to include subjective well-being in accordance with the economic stress model. Another important difference is that we later remove the assumption of a constant macro-economic environment since our intention is to test its direct influence on child-related time allocation decisions.

The Response to Economic Stress: Lost Equilibrium

As discussed in the previous chapter, economic stress can come in the form of persistent material pressures and aggregate and idiosyncratic shocks. We indicated that the general definition of stress implies an external force that temporarily distorts the desired equilibrium. Figure 3.4 depicts a shock to material resources in the family.

For illustrative purposes, we show the possible effect of a shock to material resources (household income), but according to the model, a shock event can affect resources at different levels and/or to different extents. For instance, the closure of the plant in the mono-industry city will have an adverse effect on the local labour market (aggregate-level event). In all cases, this will negatively affect the pool of material resources in the household but it is likely to increase the availability of individual time. However, the

increase in time resource is not necessarily allocated to children. Based on the family stress model, parental stress caused by subjective perceptions of an event can act as a counterforce and disrupt parental involvement. At the same time, the consumption-smoothing framework and supporting empirical evidence indicate that time resources can be redirected to income-supporting activities, including additional home production or extra hours of work. The final effects will depend on the availability of other types of resources and the timeframe of the adjustment process.

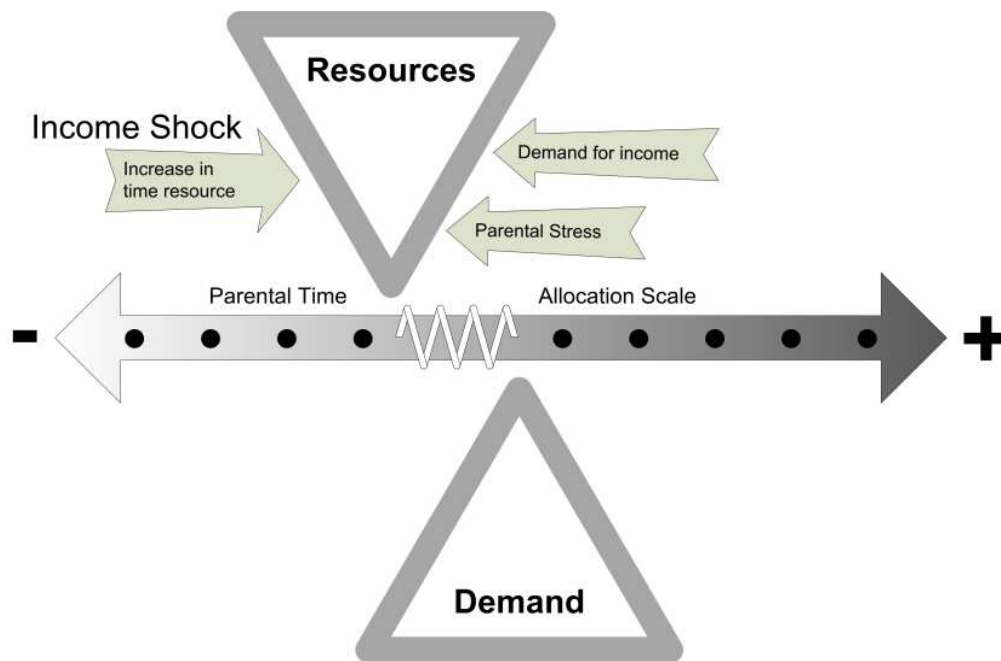


Figure 3.4: Effect of Economic Stress

The key theoretical proposition here is that economic stress distorts the established equilibrium in parental time allocation by creating a discrepancy between available resources and the desired/required level of parental involvement. We suggest that in the short run this creates a tension and inefficient parental time input (lost equilibrium). In the long run, however, parents will strive to return to the optimum point by either adjusting their demands to meet the changed resource base or by returning their resources to the initial equilibrium level. Which of the two adjustments will happen depends on the level of shock. If the welfare system drastically changes childcare provision, as happened in Russia in the late 1990s, parents perhaps have to reconsider their parental role and expectations as well as redirect resources. If it is an individual-level shock (such as

lost employment), they are most likely try to reconcile their resources with the established demands. It could be suggested that adjustment will occur in terms of both resources and demands given the evolving nature of a child's demand for care. For example, a material crisis can coincide with a child starting pre-school, which reduces the demand for care in the family. An important point is that the tension created by shifted resources has to be reconciled in the medium or long term so as to return to the most efficient allocation of parental resources.

With many factors contributing to the adjustment process, the key question from a social point of view is whether children from disadvantaged backgrounds retain their non-material resources in the family.

Empirical Testing

We are going to empirically test the following propositions of this model:

Proposition 1. Both *resources* and *demands* contribute to parental time allocation decisions in Russia and explain the disparities between children in the quantity of attention and care they receive from parents (Chapter 4).

Proposition 2: Low levels of material resources (experience of poverty and other factors of disadvantage) are associated with lower parental input (Chapter 4, research question 1).

Proposition 3: The lack of parental involvement in care and leisure activity with children (zero time allocations on the parental time allocation scale) is the result of a failure in *resources* (Chapter 5, research question 2).

Proposition 4: Economic stress at the macro level (aggregate shock) has a direct influence on parental time allocation decisions in the family and leads to a loss of equilibrium (Chapter 6, research question 3).

Proposition 5: Economic stress measured through an individual-level shock to family finances also distorts the established parental time allocation balance. The effect is me-

diated by subjective resources and competing demands for time (Chapter 7, research questions 4 and 5).

3.3 Data and Sample

Data for this investigation comes from the RLMS, which is a comprehensive, nationally representative survey of Russian households (dwelling units). It contains a wide range of individual-, household- and community-level indicators and is generally considered by scholars and researchers as a high-quality data set (Bradbury, et al., 2001; Stillman & Thomas, 2008).

It was designed and implemented by the Carolina Population Center at the University of North Carolina at Chapel Hill (US) in partnership with the Russian Academy of Science and Demoscop under a grant from the World Bank and USAID. In 2012, the project formally joined a collaborative partnership headed by the National Research University Higher School of Economics (Russia) and is now called RLMS-HSE. From the outset, the goal of the survey was to assess the effects of political and economic changes on health, socio-demographics, economic characteristics and behaviour of Russian households and individuals.

RLMS was conducted in two phases: Phase I (1992–1994) and phase II (1994–present). Each phase employs different sampling methods. Phase I used a probability proportionate to size (PPS) procedure to select primary sampling units (PSU) from the eight regions of Russia. Phase II employed a multi-stage probability sample. Over 2,000 consolidated localities (‘rayons’) were selected to serve as PSUs. These were allocated to 38 strata based on geographical location and level of urbanisation. They closely follow the federal divisions of the Russian Federation. Remote locations and Chechnya were excluded from the sample due to cost and safety issues (including the armed conflict in Chechnya at that time). Moscow, Moscow oblast and St. Petersburg formed self-representing strata due to their very large populations. The rest of non-self-representing rayons were allocated to 35 equally sized strata. Each PSU population was further stratified into urban and rural and allocated proportionally to the substrata. Initially the sam-

ple was not designed to be regionally representative but this was corrected in the latest rounds (RLMS-HSE, 2012). The rounds were conducted in regular intervals at the same time of the year with the exception of Round VII (1998), which happened at a two-year interval compared to one year.

At first, this data set was designed based on cross-section repeated sampling. Repeated interviews at each round are conducted at a static number of dwelling units. Such a design has large disadvantages when it comes to analysing micro-level changes and the sample size shrinks due to attrition. Therefore, Round VII of Phase II (1998) saw a departure from the original protocol in that households were followed where possible within a local population unit. The net effect of non-response attrition and change in dwelling occupancy during the first three rounds of Phase II was considered modest (Heeringa, 2007, March): for example, only 6.3% of households from Round V (1995) were lost due to their having moved for Round VI (1996). Gradually, the attrition increased with each consecutive round. The biggest loss of respondents was in Moscow and St. Petersburg from rounds V to IX. As a result, the cross-sectional sample in these two cities was 100% replaced with a new sample based on the same sample design. In Round XV, another aspect of sample restoration was undertaken. Post-stratification weighting initially used the 1998 census (1994 micro census) but, starting from Round XIII, post-stratification weights were calculated based on the 2002 census. No major replacement of the sample has been undertaken since Round XV (2006). This means that all recent rounds, which form the base of our analysis, have a stable sample intake.

The database in the latest rounds contains observations on more than 11,000 individuals and over 5,000 households. Within the survey, households were defined as ‘a group of people who live together in a given domicile, and who share common income and expenditures’ (RLMS-HSE, 2012). Households include unmarried children of 18 years or younger when they temporarily resided outside the domicile at the time of the interview.

The advantages of using RLMS for our research are as follows:

- There is *child-level data* which includes the child's characteristics, for example health conditions and level of physical activities. The availability of data on all siblings can help to control for unobserved within-family factors, the importance of which was pointed out by Jenkins and Siedler (2007, p. 6). The data also provides information on individual childcare choices (nursery, kindergarten or informal arrangements) and its cost.
- Our research questions underpin the dynamic nature of parental time input: it is not static over time or over the course of a family's adjustment to economic stress circumstances. The RLMS is the only publicly available *longitudinal dataset* on the Russian Federation and, crucially, the only one to have a time use section in the questionnaire. The longitudinal nature of the RLMS data thus enables us to analyse changes in parental time along the above mentioned dimensions.
- The dimensions of economic stress within our analytical focus reflect complex individual- and household-level material circumstances which require further exploration. The RLMS enables us to conduct just such a multilevel, multi-dimensional analysis. It contains detailed current and retrospective information on families' income and expenditures, as well as on individuals' work status and job search, socio-economic background, subjective well-being and coping strategies. Indeed, the RLMS interviews were conducted with *all members of the household unit*, which means it is possible to link time use and other individual-level data from all family members to children in the same household;
- Being a large-scale household survey, RLMS data is likely to be of high validity and high quality (Jenkins & Siedler, 2007). This ensures national representativeness due to the comprehensive sampling procedures employed.

Among the apparent limitations of the RLMS for our analysis is the inconsistency in questionnaire content across different rounds. Specifically, child and adult questionnaires were modified in Round IX (2000), where the section on time use data was removed and new questions appeared that were not in rounds V to X. A new time diary section was introduced in individual questionnaires in Round XV (2006), but this was administered only to mothers and no other family members. Lastly, in Round XIX

(2010) this section of the individual questionnaire was again withdrawn. There are some other minor inconsistencies involving other variables of interest across the rounds. This fact affected our selection of the timeframe for this investigation: our key analysis is based on the panel for the years 2007–2009 but where possible and deemed necessary we included data from years 2006 and 2010 (for example, to track poverty status, income and expenditure history over time).

Sample

The sample of the study includes children aged 0 to 14 who participated in rounds XVI (2007), XVII (2008) and XVIII (2009). The sample size was stable over these years: there were 2,012 children in 2007, 2,164 in 2008, and 2,032 in 2009, making a total of 6,268 observations in the pooled sample. There is data for 1,370 children in all three rounds, for 668 in two consecutive rounds and for 822 children in only one round. This is partially explained by demographics: 152 children from the 2008 round were not yet born in 2007, and 121 children had not reached their first birthday at the time of the survey in 2009. Appendix 1 to Chapter 3 presents our sample's key characteristics, which are highly comparable with official national statistics. This indicates the representativeness of our sample for the total population of children of a corresponding age.

It is generally accepted that parental involvement is most crucial in the early stages of a child's life. Correspondingly, we include children from birth onwards in our study. Regarding the upper bound, Russian law defines children as those who have not yet reached their 18th birthday. At the same time, Family Law defines the age of 14 as a stage at which a child gains a certain level of independence.⁴ The RLMS requires the child questionnaire to be filled in only up to age 14. While parental time input spent on leisure and especially care activities declines as the child's age advances, we do still see substantial parental involvement for secondary school children (aged 11–14) in terms of childcare as well as leisure. The observed variation explains our decision to keep them in our sample.

⁴ For example, this is the age when a child can apply for a national passport or represent himself/herself in court.

The child-level data is based on an interview with an adult member of the family. Based on the fact that all respondents are women in their thirties and the fact that the interviewers were asked to interview the person with the most knowledge of the child, we can assume this to be the mother for all our observations.

3.4 Methodological Considerations in Time Use Analysis

Time diary surveys, which record the respondent's activities in a sequential way covering one or more days, are arguably the preferred method of measuring people's daily activities and life practices (Robinson & Gershuny, 1994; Robinson, 1985; Harvey, 1993; Bianchi, 2000). While time diaries are highly reliable, they are also a rather expensive way to conduct time allocation surveys. This is perhaps one of the main reasons why they are conducted relatively rarely in Russia today.⁵ The alternative method is to collect time allocation data through a time use section of the questionnaire, usually called a 'stylised questionnaire' approach. It is this latter approach which is used in the RLMS database.

The RLMS adult questionnaire in 2007 to 2009 included a section on a range of time use activities, including child-related time allocations. The respondents were asked: 'Let us talk about things for which you usually spend your time... tell me, which of them have you usually done in the last 30 days. For those you have done, please tell me how much time you spent on them'⁶. 'In the last 30 days you... a) played, occupied, spent your leisure time with children or grandchildren who live with you; b) cared, looked after children or grandchildren who live with you – bathed them, fed them, and took them to lessons'. The respondent is asked to specify whether he or she engaged in such an activity and, if they did, to record the time devoted to it on an ordinary working and non-working day.

⁵ Exceptions are small-scale time use studies conducted by the Russian Academy of Science which are not representative of the whole population. We address their findings where they are relevant to our research in Chapter 5.

⁶ Taken from original RLMS questionnaire, English version.

We treat play/leisure time with children and childcare as two distinct categories. As was highlighted in Chapter 2, there are conceptual and theoretical reasons for their disaggregation. We argue that each of these time categories reflects different parental preferences: leisure involves people gaining maximum enjoyment and satisfaction (utility) from a joint activity, whereas care entails meeting normatively defined personal expectations of care. This implies that time allocations to these two activities can be driven by a different set of factors.

The RLMS questionnaire records an individual's participation in specific activity and measures the average duration of time in this activity rather than sequence of events or its share in the total daily routine or unpaid work. It also provides only generalised information on the dimensions of parental activity. For example, we cannot know the location (home or outside), the type or nature of activity (reading to a child, watching TV, playing football together, etc.). There are also some other methodological issues which generically arise with this type of time use data collection and which it is important to be aware of at this stage of the analysis.

Many methodological studies have demonstrated that stylised questions suffer from a number of pitfalls. Gershuny (2011) points to four specific problems: a) recall issues – when the respondents have difficulty remembering the activity or its longevity; b) unclear meaning in terms of time use categories and which specific actions are included in the time use category and which are excluded; c) uncertainties about the specified period (i.e. where someone is not sure whether the event occurred during period A or not); and d) the social desirability effect, i.e. a higher likelihood compared to other methods of indicating or overestimating the time category due to its perceived positive value. Niemi (1993) argues that some of the measurement issues could be sources of random or systematic errors, with the latter depending on the population group. Random errors resulting from, for example, unclear questions or deterioration of motivation cancel each other out in large-scale surveys so do not pose a big problem here. Systematic errors, on the other hand, do affect the mean and can pose analytical challenges.

Some methodological studies comparing two methods find that direct questions on leisure and household work time in survey questionnaires produce somewhat different estimates compared to time diaries. For example, studies based on US time use data (Bianchi, 2000; Juster, et al., 2003) find that the stylised questionnaire format produces an overestimation of time use compared to time diaries. The recent study by Kan (2008) based on the Home On-Line Study (UK) is generally in line with these findings, pointing to the systematic errors produced by survey questionnaires. Specifically, Kan finds that the gap in reporting housework hours is very small for women (5%) but substantial for men (30%). This can lead to underestimation of the gender gap in their housework contribution. The study also indicates that the presence of dependent children appears to inflate both men's and women's stylised housework hours. The suggested explanation of gender-related differences in estimations relate to the social desirability of housework within a specific context.

These studies can be contrasted with methodological studies from Denmark and Norway which support neither over-reporting trends nor big gender differences. For example, Bonke using Danish data (2005) finds that while information on paid work does not depend on the instrument applied, data on unpaid (household work) generally underestimates the time spent on this activity, with parents underestimating more than non-parents. At the same time, Kitterød and Lyngstad (2005) assess Norwegian time use data with a particular focus on parents. Contrary to many studies, they do not find a consistent pattern of overestimation in the stylised questionnaire format for all adults. They do, however, find that for parents with children the questionnaire generates somewhat higher time estimates than time diaries, although the discrepancies are rather small according to their account. In the multivariate analysis of this study, the mother's housework time showed similar patterns of variation between the sub-groups. Two methods also produced quite similar differences between mothers' and fathers' contributions. Overall, it seems that the scale of discrepancies between time diary and stylised questionnaires depends not only on the general quality of the household survey design and collection procedures (Niemi, 1993) but also on the national context and the pre-

vailing social norms and values in terms of issues like parenting and gender division of roles. We will address these issues in reference to our data below.

Comparative methodological studies suggest that at least for some demographic groups questionnaires generate reasonable results and could be used to evaluate generic patterns (Kitterød & Lyngstad, 2005) as well as that ‘*structural analyses on questionnaire-based data on time use are feasible and reliable*’ (Bonke, 2005, p. 366). The studies also showed that questionnaires provide a useful ordinal scaling of individual’s time on housework and generally have a higher response rate, given that they are less demanding (in terms of time to participate) for respondents than the diary method (Kan, 2008). No methodological comparison has been conducted based on Russian time use data, so direct critical extrapolation of earlier finding to the RLMS time use dataset would not be appropriate. Yet we have to be aware of some possible systematic errors in our time use data, especially because we deal not with the whole population but only with parents. Meanwhile, we emphasise that our interest is not in the gender relationships or absolute levels of leisure and care contributed by parents; rather, our interest lies in the relative change in the time input under material stress and disparities between children in the pool of resources they receive not only from parents but also from other family members. We believe that for our research purposes the benefits of panel data and the opportunity to conduct a longitudinal analysis, in the ways noted by Sullivan and Gershuny (2011), outweigh the limitations of using stylised questions.

In order to get a sense of potential measurement errors in the RLMS questions, we tested them through an independent survey in five localities of the Russian Federation in the frame of the qualitative study (see Appendix 2 to Chapter 3). Fifty-three parents (predominantly mothers) were given exactly the same time use questions as in the RLMS survey strictly following the RLMS format. After answering the questions they were asked to evaluate or comment on the clarity/possible ambiguity of the questions and explain how they understand the meaning of the key words ‘leisure’ with and ‘care’ for children. The vast majority of the interviewees did not have problems answering the questions. Only a couple of interviewees pointed out that they had a slight difficulty

recollecting the exact time spent on one or another activity, which is consistent with the problems highlighted in the literature. A number of 'stay at home' mothers were initially quite generic in their responses, saying that they spend 'the whole day except household work' with children. After the interviewer's probing, however, most offered a more specific indication of time, although in some cases the time seemed a rough approximation. It is likely that mothers on maternity leave with very young children perceive childcare as their full-time job and that for them leisure and care are not always separable notions. Working parents were often much more specific in their time calculations, often listing and counting the activities and then giving their estimate of the time they spend on those on average and in total.

Coded analysis of the prevailing themes based on an induction approach showed that the majority of parents understand leisure with children as interactive activities and strongly connect it with entertainment. Although more affluent parents more often named types of leisure which are conditional on some monetary input (such as going out or going to the cinema), on the whole, all the parents perceived leisure as an activity which brings some sort of enjoyment to the child as well as to parents:

'Leisure- cultural time use. Sport, movies, theatre. Going to cafe, restaurant'
(R.O)

'It is time free from studying, working, when we do something interesting together' (D.B)

'Leisure in our family means watching TV together, talks and discussions over a cup of tea about the day, playing the children's favourite board games' (L.L)

'Leisure is the time which a child spends with pleasure' (M.R")

'Under leisure we understand only entertainment; children are very busy over the school week, therefore when everyone is free <over the weekend> my wife and I are trying to entertain them' (D.T)

'Leisure is what our family is doing together. We often go to the theatre, into entertainment centres, get out to dacha' (V.C)

'Leisure is when we play together, read, build something' (K.S)

The definition of care for children, somewhat surprisingly, was more inclusive as it was not limited to what is often perceived as immediate care responsibilities or duties. Many interviewees understand it in a broader sense of making the child comfortable and providing for his/her welfare. This included treating a sick child as well as teaching social norms – what is usually meant by the notion of ‘upbringing’. On the whole, one of the most common themes throughout was not the fulfilment of material or basic welfare needs but giving a child attention:

‘Care for children – attention first and foremost. In some sense it is spoiling her <daughter>. It is a moral upbringing’ (R.O.)

‘Feeding them, giving them attention, helping to solve their problems, providing them with material needs’ (D.B)

‘Care for children for us... this is help in preparing homework, timely purchase of seasonal clothing and all that sort of thing’ (M.F)

‘Looking after a child means constant control over the child’s welfare; this is attention, feeding, ensuring neatness’ (Y.L)

‘Care is caring about a child’s health, physical activity, correct <healthy> feeding. Teaching the right behaviour in the social circle, so that in the future they don’t have problems with communication, business, interaction with people’ (S.B)

‘Care ...<pause>... it is probably increased attention, patronage’ (V.S)

‘Care is more intimate <than leisure>. Care for my son at his difficult age is limited to the question: “How are you? Have you done your homework? Have you eaten?” He is not very eager to open his soul to me, and I am already happy if he is home by 10pm. But with a daughter I need to be ‘on my toes’ constantly’ (the son is 14 and the daughter is two) (H.B)

‘Care for a child, creating the right atmosphere. Well... in fact this is not an easy question, a philosophical question...’ (N.A)

A broader definition of care might be partially explained by the fact that interviewees were limited in their explanations to only those two terms (‘leisure’ and ‘care’), so some inclusiveness is inevitable. Yet the fact that this was observed with care but not leisure could indicate the truthfulness of respondents’ attitudes. The broader definitions of care

might also indicate that it has the ‘social desirability’ connotation highlighted by a number of studies discussed earlier, which therefore can lead to some overestimation in the RLMS data. On the whole, both notions are very close to what we expected the RLMS questions to capture conceptually. This provides sufficient ground to claim that the RLMS data on child-related time use is a valid instrument for our analytical purposes and indeed reflects the notions of play/leisure with children and care for children in their broader sense. As such, it is a good measure of parental human input.

Lastly, it needs to be said that the RLMS time use data is collected at the individual adult level rather than at the child level. This implies that time input specified by mothers, fathers or other family members relate to all the children in the household. However, our unit of analysis is a child with every child constituting a separate case. In response, we deal with clustered data, i.e. siblings in the same family. This means that in the multivariate model the estimate might be biased towards children with siblings. The variance of all the variables can also be underestimated due to the fact that the family characteristics of siblings are similar. In other words, the residuals will not be independent. Therefore, we have to account for estimation biases in big families arising from likely positive correlations between different subjects within the cluster (in our case families).

Our research objective is not concerned with distributional issues between children within the family (by gender or birth order), meaning we do not consider the above mentioned limitation as a threat to the substance of our analysis. Nevertheless, we take the necessary steps to ensure the methodological and analytical validity of the results. We will follow a standard procedure as outlined by Bonke (2010) to control for this by partitioning children into clusters (children with any number of siblings) at the household level. With the cluster option, the estimates of the coefficients will be the same as with the standard OLS, but the standard errors will take into account that observations (children) within family are not independent. Robust standard errors produced under the cluster option are computed based on the aggregate scores for families rather than at the child level. Moreover, in our descriptive exploration we also examine the trends based

on the number of children in the family. This allows us to distinguish the time devoted to a single child compared to a child with one sibling or more.

3.5 Measures of Economic Stress

In the last chapter, we defined economic stress very broadly as the tensions resulting from factors of an economic nature that alter an existing normative or situational equilibrium. We also highlighted different dimensions of economic stress, such as poverty experience, idiosyncratic shocks to income, or macro-economic pressures (shocks) within a dynamic framework. Our proposed measures of those three dimensions are discussed below.

Poverty Experience and Disadvantage

The western debate on the dichotomy of absolute and relative definitions of poverty and attempts to reconcile these two approaches (Sen, 1983; Lister, 2004) has been restricted in Russia to the research domain (Davidova, 2004). This is due to the fact that the prevailing national approach in measuring poverty since the early 1920s was a subsistence minimum, with a conventional need-based approach adopted in the early 1980s (Lokshin, 2008). In the early 1990s definitions of poverty were not openly debated in political circles as the social and economic reforms which were highly influenced by international institutions such as the World Bank and IMF called for continuation with the existing absolute poverty definition. Today official documents define households or individuals as poor if their income (disposable resources) is lower than the subsistence level (FSSS, 2011).

The national statistics of the Russian Federation use a poverty threshold based on the official subsistence level calculated separately for adults of working age, children, and pensioners. For each group the threshold is calculated as the cost of a minimum consumption basket which covers basic food as well as non-food expenditures (inclusive services) ‘sufficient for the normal functioning of the bodily organs and the preservation of health and required for the satisfaction of the main social and cultural necessities’ (Denisova, 2012). The subsistence level is determined at the regional levels which ac-

counts for local prices but is also calculated as a country average. It is adjusted each quarter by the Russian National Statistical office. Some of the problems of the existing official measurements are difficulties in comparing poverty across regions and its disregard for the economy of scale due to the use of durable goods in the household and housing costs (Soboleva, 2013).

RLMS-HSE data reports national and regional absolute poverty levels calculated based on the methodology developed by Popkin et.al (1996), utilising income rather than consumption for the estimation process. Poverty lines here are based on diets meeting subsistence needs, taking into account regional prices and, contrary to official measures, equivalence scales for family size. All our poverty dynamic measures will be based on this generic measure of poverty in RLMS.

The importance of a dynamic perspective on poverty and especially child poverty analysis has been conveyed in a number of works (Duncan, et al., 1994; Walker, R. with Ashworth, K., 1994; Walker, 2005; Smith & Middleton, 2007). Material deprivation of the family might have wide-ranging effects on children depending on the specific poverty pattern. Whether it is, for example, a single long spell of moderate poverty or a short spell of extreme poverty (Bradbury, et al., 2001) might determine the extent of psychological, physical and cognitive changes occurring to children given all other things being constant. The literature distinguishes between transient or short-term poverty, recurrent poverty, persistent poverty, and chronic poverty (Walker, with Ashworth, 1994). The extent of poverty is usually identified as the ‘severity’ or ‘depth’ of income deprivation and is usually measured through the difference between the official benchmark (usually the absolute or relative poverty line) and the actual level of household income. The frequency of material hardship and the direction of the income trend are also essential for adequate analysis. All these dimensions of income poverty have a role to play in a child’s experiences at the time of material hardship and later in life.

We focus on the frequency of poverty spells and their longevity as measures of persistent economic stress experiences without measuring the depth of poverty. Acknowledging the complex nature of material disadvantage we account for other factors of associ-

ated disadvantage in Russia – i.e. a rural location, the density of living conditions and the self-evaluated ability to pay for a child's extra classes. The latter is just one of the subjective indicators of perceived hardship specifically related to the monetary side of investments in children. The focus on disadvantage also means that we chose to control for parents' basic educational level (the lack of a professional degree) rather than generic levels of education. As the education gradient captures parental preferences, we expect that this measure will reflect the fundamental differences between parents' beliefs and aspirations, which serve to shape their level of involvement and interaction with children.

Macro-economic Shocks

For the purposes of our study we understand macro-economic shocks as an aggregate change in macro-economic indicators which alter socio-economic conditions for families and households. The most appropriate context for such an examination is the recent 'great recession'. Examination of its effects on families with children in general and parental behaviour in particular is of great scholarly and policy interest. Russia has been one of the countries which had one of the deepest falls in GDP growth rate in 2009, and therefore offers an interesting case for analytical investigation. We will measure this aggregate shock through macro-economic indicators disaggregated at the regional level. Specifically, we chose Russia's regional gross product (RGP) and regional unemployment rates as indicators of economic change over the pre-recessionary and recessionary period. Such disaggregation is required in order to control for any small fluctuations in work hours over time (Morrill, et al., 2012). Economists treat the unemployment rate as a better measure of macro labour market conditions than wages (Edwards, 2011) and this is the measure predominantly used in recent literature examining the effects of aggregate shocks on time allocation decisions. Burda and Hammersmith (2009), Gimenez-Nadal and Molina (2009), Aguiar et al. (2011), and Morrill and Pablonia (2012) all used macro or meta unemployment figures to examine the effects of cyclical fluctuations or shocks to the labour market on time use. In Russia, however, official unemployment figures can merely be the tip of the iceberg as firms and companies adapt in

an effort to retain their labour force by reducing the working week or sending employees on unpaid leave. This creates ‘hidden unemployment’ that is not represented in the official figures.

Idiosyncratic Shocks (Income Shocks)

For the purposes of our study, we define an idiosyncratic shock as a substantial financial strain caused by an individual level event. Previous studies have used a range of definitions and strategies to measure income shocks. Guarcello et al. (2010) categorise income shocks as collective and individual, which are further defined as those brought about by external forces (earthquakes, floods, fires, massive lay-offs, public protests, business closing, etc.) and those caused by unemployment, death, lowered income of any member, etc. According to that study, a household was defined as experiencing a shock if it reported one of the above mentioned events. Beegle et al. (2003) use the value of crop loss due to weather and natural hazards as a proxy for transitory income shocks in agricultural households. Some studies used questions from the household and individual questionnaires to construct variables which identify income shocks. For example, Scoufias (2003), in a study of households’ consumption-smoothing strategies in Russian households, used a number of survey questions to identify temporary income setbacks, including questions on whether an individual is owed a salary from their primary job, whether an individual is either at work or on unpaid leave, etc. On its own, the loss of a job might not necessarily be associated with the loss in total household welfare since, as Scoufias (2003) shows, Russian households use a variety of strategies to smooth their consumption. Therefore, unemployment by itself not necessarily reflects financial strain. Lokshin and Ravallion (2000) categorise all households experiencing income shocks based on the size of the shock: a decline in real income from less than 10% to more than 30% compared to the previous year. Their definition of a transient income shock as an ‘*unexpected but short lived drop in income*’ (2000, p. 2) more closely reflects our own conceptualisation of an income shock within the economic stress framework.

Rather than simply accept any of the earlier applied measures of income shocks, however, our intention is to empirically test a number of possible indicators and arrive at the most appropriate one in the sense of actual material loss. Specifically, we will compare the fall in household real income, the fall in household real expenditure, involuntary unemployment, and the subjective evaluation of the financial situation relative to a year ago. These indirect measures of shock are based on strong assumptions of associated loss in total material welfare, which might not necessarily be the case due to substitution from private transfers, savings or other complementary income.

3.6 Panel Data Analysis

Panel data sets have both cross-section and time series dimensions that provide repeated observations over an interval of time on the same cross-sectional sample (Wooldridge, 2002). Therefore, there are two types of information provided by the panel data: the cross-sectional information reflected in the differences between subjects, and the time series on changes ‘within’. There are substantial benefits to the use of panel data: they are more informative (less collinearity, more variability, more degrees of freedom and smaller recall error), ensuring that estimates are more efficient (Brüdel, 2005). They also allow for the study of individual dynamics and to control for unobserved heterogeneity (i.e. the omitted variables bias). The latter is especially important in examining complex behavioural patterns in regard to parental investments, not the least due to the unobserved influences of the child’s abilities, temperament and physical disposition. Most importantly, depending on the method, panel data allows one to study the data-based inferences of the causal relationships between the variables of interest.

There are in principle two main approaches in the analysis of panel data depending on the objectives of the research: pooled-OLS regression, which relies on a ‘between’ comparison, and models that control for unobserved heterogeneity by applying ‘within’ estimators. It is possible to pool data across all the available time periods of our data and run a standard least squared regression treating all the observations for all of the time periods as a single sample. Granted, the estimate produced might be biased be-

cause it is still subject to unobserved heterogeneity, but in relative terms it will be more efficient than a cross-sectional estimation because pooled OLS also takes into account the within variation over the time period (Brüdel, 2005). Moreover, when an appropriate comprehensive set of controls are used, which capture the main characteristics of the individual, the omitted variable bias will be minimised (Dougherty, 2006). The key is that the pooled OLS approach enables changes between subjects retaining time-invariant characteristics such as parental education to be incorporated into the model.

The problems of panel data such as heteroskedasticity across units and non-independence of observations are addressed by using an individual fixed effects⁷ estimator. This is a model which allows for each unit of observation to have its own intercept. Here, time-invariant heterogeneity is no longer a problem since we deal only with variations within a unit of observation, in our case changes for a single child over time. Thus, this approach enables us to identify underlying causal effects. The trade-off, however, is that we have to exclude all time-invariant characteristics from the model, which would otherwise be automatically dropped since the model cannot estimate them unless there is some variation over time. As a result, the ‘within’ logic is only applicable for time-variant covariates.

The solution to this problem could be a random effects estimator. This method is generally considered more efficient, but only if it meets certain assumptions. The selection of a fixed or random effects estimator is usually done through further statistical tests. In our preliminary testing we applied the Hausman test (Greene, 2008) to our data. It revealed significant systematic differences between the fixed and random effects estimators, which proves that the random effect estimator is biased or inflated and cannot be used. We consider the selected fixed effects regression as the most appropriate method for examining variations ‘within’ our unit of analysis.

Our aim is to identify and explain both the changes in the level of parental time contribution *within* one family under economic stress over time (the ‘flow’) as well as the

⁷ A variety of more complex panel data models exist but are not directly applicable for our investigation. For a general review of methods in poverty research, see Jenkins (2007). For a focus on graphical chain models (SEN) on panel data, see Berrington et al. (2006).

disparities *between* Russian children in the level of non-material input (the ‘stock’). Moreover, time-invariant factors such as parents’ education, perceptions or value of children etc. could be crucial in our understanding of parental strategies and choices in childcare and other child-focused activities. Therefore, our empirical strategy calls for using both: a) a pooled OLS / Tobit regression to explain disparities or polarisation of children at the level of parental human investment; and b) a fixed effects model in analysing the effects of aggregate and idiosyncratic shocks on changes in parental input over the course of the adverse events. Referring to the testable propositions presented earlier in this chapter, we apply these two methods in the following order: propositions 1, 2 and 3 are tested in chapters 4 and 5 and will be based on pooled data Tobit/OLS/Logit estimates; propositions 4 and 5 are tested in chapters 6 and 7 and will be based on panel analysis and fixed effects regression.

Choice of Method for Confronting the ‘Zeros’

There is separate debate among scholars on the use of the appropriate method to tackle the ‘problem of zeros’ in time use research. The problem stems from the nature of the data collected using either time diaries or stylised questionnaires. Individuals differ in the way they decide to spend their time, so there is an inevitable number of ‘zeros’ in the data. Put simply, some people choose not to do cleaning or ironing, some do not go to church or do it on an irregular basis. One of the common approaches has been to treat the problem as a limited-dependent (censored) variable problem, thus calling for the most typical method applied in such cases: Tobit estimation. This method assumes a latent propensity to participate in childcare and play that can take negative values (Amemiya, 1984). There is, however, a growing understanding that zeros in time use data arise from a mismatch between the reference period (i.e. a diary day or a week or a month in a survey) and the period of interest. Steward (2009), for example, argues that Tobit regression in some cases can generate biased estimates while OLS provides unbiased estimates in all cases, securing more consistency. Some researchers have recently tested both estimations on their data (Bonke, 2010; Gimenez-Nadal & Molina, 2013) and concluded that both estimates give similar qualitative results.

Other more rarely used alternatives include the Gamma model and Heckman two-step estimation. The Gamma model was proposed on the specific premise that values in time use cannot take negative values as otherwise assumed by Tobit estimate (Andersen, et al., 2006). However, the interpretation of the results under this method poses certain difficulties as coefficients are not intuitively interpretable. This led to a very limited use of Gamma models in time use studies.

Other time use studies use the Tobit type II model, i.e. Heckman two-step regressions (Loefmark, 2007). The Heckman model makes estimation by projecting possible time allocations assuming zero observations (truncated data) as observed. It is generally used to compensate for selection bias. If all of the observations that we have in the data set are not randomly selected from the population, but are selected based on a different property (unobserved sub-sample), then this would introduce a selection bias that can be compensated for by a Heckman regression.

Our sample is randomly selected from the population and the zeros we observe are true zeros – they are observed and do represent non-participation by choice, given that the recall period is just one month. Moreover, our research is not concerned with projecting potential time allocations from those who do not currently contribute to it, but rather we are interested in the meaning of ‘zeros’ and the effect on the nationally representative sample of the population. Thus, applying Heckman model would not be appropriate in our case.

Our final selection of the statistical method will be done through the testing and comparison of the main alternatives, in the form of the OLS and Tobit estimates. We will also consider a seemingly unrelated regression as a method used recently in a number of papers to evaluate parental time.

Conclusions

This chapter presented and discussed the proposed theoretical framework and its testable hypothesis. We specified the core definitions of this research and approaches to its

measurements using the RLMS. This data set is provided by a comprehensive household survey designed to monitor socio-economic changes in the Russian population since the early years of transition. We highlighted the methodological issues related to time use research, particularly drawing attention to the challenges and options in the use of methods and measurements. We believe that the structured survey design of time use data included in the RLMS is appropriate for our research task of examining typical childcare patterns among Russian parents and that it provides rich background information on the child, parents and family. This chapter highlighted the peculiarities of working with panel data and discussed our choice of methods, specifically the analytical applications of cross-sectional Tobit/OLS estimates and fixed effects panel modelling.

Chapter 4

A Level Playing Field? Poverty and Disparities in Parental Time Input

Playing is a privilege of childhood. It is the most effective way for children to learn and socialise. The distinguished Soviet child psychologist Lev Vygotsky noted that *‘Play – is the best preparation for a future life, in play a child tests and develops those talents, which he will need later’* (Vygotsky, 1984, p. 38). Playing starts at home in multiple precious interactions with parents: stacking a tower of blocks together, engaging in a chess battle or even, much to a mother’s dismay, kicking a ball around the living room with the father. These experiences, along with the care received from the parents, are the foundation for many of the future opportunities of the child.

However, every family is different. Some children experience excessive attention and overprotection, others grow up with much fewer opportunities for shared communication and play experiences. What influences these differences will be our focus in this chapter as it opens up our investigation into parental practices in Russia. We will be examining the range of factors that motivate parents to invest their time in children, with a key focus on the relationship between attention and care and child poverty experiences.

The profile of child income poverty is well understood in Russia today (Ovcharova & Popova, 2005; IISP & UNICEF, 2011). There is also accumulated knowledge about disparities in time allocation decisions among Russian individuals over the course of the most recent four decades (Karakhanova, 2003; Gvozdeva & Gvozdeva, 2006; Patrushev, 2003; Patrushev, 2005). However, these two aspects have not yet been brought together in the Russian context to understand how, if at all, risks of poverty and disadvantage correspond to the disparities in the amount of non-material resources chil-

dren receive in the family. To investigate this link we define our research question for this chapter as:

To what extent does economic stress, associated with poverty experience, contribute to the disparities in the level of received parental care and attention between children?

Utilising the theoretical framework of PTE presented in the previous chapter, we examine the distribution of children along the Parental Time Allocation scale (Figure 4.1). In other words, this chapter looks at the variation in parental time allocation when it is at equilibrium and aims to understand its driving forces.

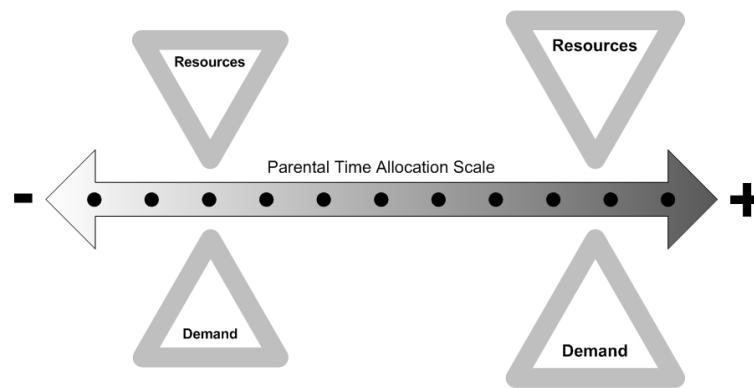


Figure 4.1: Variation in the Point of Equilibrium between Families

We evaluate the relative weight of various factors, which shape the composition of the groups of *resources* and *demands* within our model. Yet our primary interest is in the role of economic stress as it is measured through poverty experiences. We intend to answer this research puzzle through a pooled cross-section analysis of mothers' and fathers' time allocations. We estimate parental time disaggregated into working and non-working days, as well as a weighted average for the week, using Tobit models.

Verifying the composition of factors influencing the PTE will provide an important empirical test of our model and a basis for more specific questions in the following chapters. Understanding the role of poverty in shaping parental time allocations can shed light on important choices and constraints faced by parents in their efforts to mitigate economic stress. Most importantly, however, the study will contribute to our under-

standing of how Russian children experiencing poverty compare to their peers in terms of their experiences with parents in aggregate terms.

The chapter is structured as follows: Part 4.1 reviews the evidence on existing inequalities among Russian children in access to non-material and material resources in the family. Here we present findings from individual time use studies on gender and the rural/urban divide collected over a few decades and the characteristics of child poverty in Russia. We discuss our theoretical approaches and hypothesis in part 4.2. Part 4.3 presents data, the empirical model and key measurements. Part 4.4 provides some descriptive analysis on child-related time inputs among family members and the results of a multivariate analysis. We finish the chapter with the main conclusions.

4.1 Russian Children: Disparities in Home Resources

Child Poverty

According to many experts, poverty in Russia has for many years had a ‘child’s face’. Children show the highest risk and the greatest depth of poverty. According to official statistics, the risks of income poverty among children in 2007 were 29% higher than among the general population. In 2009, at the peak of the economic crisis, the difference reached 31% (FSSS, 2010). This is not a new phenomenon but rather an indirect result of the structural reforms of the early 1990s and the economic crisis of 1998. In 1995, soon after the start of the economic reforms, Russia topped the table of child poverty levels among the 25 most industrialised nations. At that time, and based on a relative measure of 50% of the median national income, Russia’s child poverty rate was 26.6% (Bradbury, et al., 2001). The deterioration of real household incomes, as well as emerging disparities in the sources of income, are usually mentioned among the structural triggers of this problem during those turbulent times (Ovcharova & Popova, 2005).

During the years of economic growth (2000–2007) the risks of poverty declined but at unequal rates among different groups of children. The highest risks remain among children aged 1–2, children from families with multiple children (‘mnogodetnyy semja’) and

single-parent households (IISP & UNICEF, 2011). The depth of poverty is the most acute for children aged 3–7. This is explained by the inability of the family to recover the level of per capita income that existed before the child's birth. The birth of the second child increases the risk of poverty up to an additional 50% (IISP, 2010). Therefore, public perceptions firmly associate families with more than one child with material disadvantage (Rotkirch, 2012).

The majority of risk factors for child poverty in Russia are labour market related and are similar to those found in other countries (Ovcharova & Popova, 2005): a) a high dependency ratio in the household; b) joblessness of the adults in the household; and c) low income for the working adults. Generally, families with children are 2.2 times more likely to have an unemployed adult in the household, and 2.8 times more likely to include an economically inactive adult (which is likely to be a mother). The struggle to get and retain work is likely to be a parent's main occupation and primary worry in these families. A recent IISP & UNICEF report on the position of children in the Russian Federation (2011) has not identified any territorial differences in the risks of child income poverty. At the same time, the analysis reveals a factor 3.4 difference for a combined deprivation measure of child poverty between rural and urban locations. This indicates that focusing on income as a single indicator of child disadvantage, measured only at one point in time, risks overlooking the problems related to the other dimensions of a child's life.

First attempts have been made to complement income measures with a set of various material and non-material factors of disadvantage (Ovcharova, 2001; Burdjak & Popova, 2007). Relevant to our study and actually quite a rare empirical analysis of the Russian case, IISP (2010) tested some non-material aspects of a child's life, including levels of family conflict and parental cohesion, in relation to issues of upbringing along with indicators of low income and poor living conditions. The study found that 41% of the sampled Russian families with children have family/parental conflicts of some sort and 8% live under permanent conflict in the family. The most common type of conflict between partners reflected the high level of stress and tension present when material

resources are tight. So, while some first evidence on the links between material pressures and the subjective well-being of parents is emerging in Russia, there is surprisingly little known of the effects of these factors on parental practices and children's experiences.

Parental Time Allocations over Recent Decades

Some experts claim that parenting in Russia is changing as a result of trends toward more child-centred relationships built on the values of trust (Kukulin, 2010). Parental time allocation is a tangible measure that reflects actual decisions and true preferences rather than desired or valued parental practices. As such, it offers a possibility to observe general changes in parental input over the years. To understand the current disparities between children in the level of attention they receive from their parents, it is therefore important that we see what the actual preferences of Russian parents were over the years or recent decades. The main focus of the time use studies conducted in the last decades in Russia has been on the overall balance of paid/unpaid work, examined through the lens of gender divisions of labour (Gvozdeva & Gvozdeva, 2002; Karakhanova, 2003; Gvozdeva & Gvozdeva, 2006; Loefmark, 2007). A number of studies also examined the disparities in time allocation decisions between urban and rural populations (Artemov, 1990; Patrushev, 2003; Patrushev, 2005). While parental investments were not their primary interest, the studies included data on childcare time allocations. This enables us to see the historical trends and persistent disparities in parental time allocations in Russia over time.

The period of economic and social transition of the 1990s seems to have reinforced already existing gender and urban–rural inequalities in parental time allocations (Patrushev, 2005). The urban–rural gap in the extent of formal employment has narrowed compared to previous decades, but the rural population was still heavily engaged in supporting their livelihood by maintaining personal plots, spending up to 19–20 hours per week on these. As subsistence-oriented agriculture became one of the main survival strategies of households, the pressures on rural women increased (Wehrheim & Wobst, 2005). Gvozdeva, in her analysis of RLMS data from 1996 and 1998, finds that low-

income and especially rural women have to work more in the house and on the family allotment (Gvozdeva & Gvozdeva, 2006). According to this study, employed rural women worked 23 hours a week longer than their husbands, eight hours longer than women in urban areas and 26 hours longer than urban men. The data suggests that at times of economic difficulties women, especially rural women, carry a disproportional burden of household work, including childcare. This is particularly important for our study as it suggests that women's child-focused time input could be more sensitive to changes in the economic welfare of the family.

A general trend over four decades observed in different waves of Pskov⁸ time use data (1965, 1986, 1997/1998 and 2003/2004) showed that, on average, a mother's contribution to childcare as a share of unpaid work declined over time (Karakhanova, 2006). This is at odds with the observed high normative value or social desirability of children, especially among working mothers. The same study finds that working women of Pskov ranked family and children as their first and second priorities among 17 different value options. Yet the high value of children that they expressed verbally contrasted sharply with the allocation of women's time. On average, time with children occupied only 7th or 9th place (depending on her age) as a share of women's unpaid work time (2.3%). Women aged 30 and under, who could be expected to be more child-oriented, devoted the least time to activities with children (only 0.8%) compared to older age groups. For women aged 30–50 activities with children occupied the highest share among all women (2.7%), yet this remained in 7th place among other non-working activities, scoring less than household work, watching TV, shopping, or reading. So parents' actual preferences did not match the personal desirability or expectation of child-related time commitments.

Karakhanova's analysis is a relevant illustration of our PTE framework. The financial crises of the late 1990s in Russia not only changed the economic landscape of the country but also affected the resources available to parents. Despite declarations of child-

⁸ Pskov is a town in Central Russia that was selected as a typical mid-size town in a comparative international survey of time use in 1965. The samples from 1986 and the subsequent years used the same sampling methodology.

oriented values, mothers in the early 2000s were not in a position to invest more of their time in their children. The lost equilibrium between desired and actual time allocations apparently takes longer to restore when macroeconomic transitions force adverse changes on an individual level.

While direct international comparisons of Russian time allocation data are not possible on methodological as well as socio-economic grounds, it is still useful to have a rough indication of its relative standing compared to parental time allocations in other countries. A comparative study by Guryan et al. (2008) showed that there are huge differences in child-related time allocations between countries. For example, while mothers in Palestine, Austria, and Norway spend on average 12.35, 12.27 and 11.7 hours respectively per week on child care, mothers in South Africa and France contribute half of that with 5.88 and 6.83 hours respectively. Mothers in Germany, Italy and the UK are somewhere in between with 10.4, 9.8, and 9.9 hours per week devoted to childcare. The least involved fathers are those living in South Africa and France, who spend 0.6 and 1.82 hours per week on childcare respectively. Even accounting for significant methodological differences between the data, the 3.2 hours per week that mothers from the Russian city of Pskov contributed to childcare in 2003/2004 is strikingly small (Karakhanova, 2006; Patrushev, 2005). On the other hand, Russian fathers who decide to contribute their time to childcare compare relatively well to fathers from other countries.

The reviewed research indicates that years of economic transition affected the desired equilibrium of parents. Contrary to trends in the western world (Bianchi, 2010), Russian women, on average, have decreased their time with their children in the last decades despite spending fewer hours in the formal labour market. Gender inequalities in the family rooted in the 'male breadwinner' culture of Russian families (Teplova, 2007) only slowly gave way to the modern family with more involved fathers. In other words, we can expect differences between mothers' and fathers' time allocations to persist in the 2000s as they did in the late 1990s, which makes disaggregated analysis of our data the only rational option.

The persistence of the urban–rural divide in parental childcare input over many decades is an indication of entrenched socio-economic disparities in the Russian Federation, which have not disappeared during the years of economic growth. At the same time caution is required when making generalisations, as stagnating economic development in rural settlements can mask significant variations among parents’ time resources and preferences for spending time with children. As Patziorkovskiy, a recognised expert in rural development, points out (2012) many Russian villages have moved from the survival strategies of the early 1990s to a more sustainable household economy. But the success of adaptation to the new market economy varies from one household, village and region to another. In these conditions, using nationally representative data rather than a small sub-sample of the population of one locality is the only way to ensure the validity of the results.

4.2 Analytical Framework and Hypotheses

In Chapter 3 we presented PTE – a theoretical model for our investigation. It is rooted in the economic theory of time allocation (Becker, 1965; Gronau, 1977) and parental investment (Becker & Tomes, 1986), but incorporates certain later critiques and extensions (Folbre, 1996; Coleman, 1988) as well as the family stress model (Hill, 1949; Conger & Elder, 1994; McLoyd, 1990; Conger, et al., 2002; Conger, 2005). PTE stipulates that parents allocate their time under the constraints of their existing resources and formed (but not static) demands. Moreover, in the long run the allocation decisions have to be at the point of equilibrium, where resources meet demand. This will be the most efficient (from their point of view) allocation of time for child-related activities. This chapter tests the first two propositions of the model. The first is as follows:

Factors included in the groups of ‘resources’ and ‘demand’ contribute to parental time allocation decisions and explain the disparities between children in the quantity of the time they receive from parents.

The PTE framework stipulates that *resources* include parents’ subjective or psychological well-being, monetary, human and social capital, and the enabling macro-economic

and policy environment. The analysis in this and the subsequent chapter makes the assumption that the macro-economic environment is held constant. *Demand* is driven by child effects, parental aspirations, ideas, beliefs and expectations, which are more directly influenced by parents' education and indirectly shaped by cultural and social norms. The evidence on those was presented in the literature review.

In order to elaborate on this proposition, we have to revisit the classic home production framework (Becker, 1965). Generally, Becker's model suggests that individuals combine market-purchased goods and time to produce consumable commodities that are included in their utility function. The assumption is that individuals maximise their utility by finding the best combination of market-purchased goods combined with time allocation under a given market wage. Thus, the total time is split into working, home production and leisure, based on the elasticity of substitution between time and goods in their production and a given opportunity cost per time unit. The theory, as we pointed out in Chapter 2, stresses the scarcity of time as the main factor driving the reallocation between goods-intensive and time-intensive commodities.

The time allocation theory also specifies that labour market productivity and the comparative advantages of parents are of primary importance in determining time allocation in the household. This is generally measured through observed or predicted wages, work status and income. Wages and employment history are determined by parents' human capital, so they are in themselves the product of key resources available to parents. Our model also specifies that parents will have to rely on their subjective resources and social capital.

The equilibrium point on the time allocation scale will differ from one family to the next. For example, working parents with a single child – being constrained by the available time and social support from family members (*resources*) – might choose to supplement their own time with their child by purchasing formal care in accordance with their preferences for the quality of care and child's needs (*demand*). We test whether the factors we include in the model indeed have any influence on parental time allocation

decisions and whether resources and demand both contribute to the variability between children.

The second proposition tested is the following:

Low levels of material resources (experience of poverty and other factors of disadvantage) are associated with lower parental time input.

This suggests that individuals (parents) who experience economic stress through persistently lower levels of material resources would provide a lower than average time input. We use the notion of 'low equilibrium' under the assumption that, in the long term, low availability of resources will also affect the expectations (demand) of what is possible and/or appropriate. Resources and demand will therefore meet at a lower level than the sample mean.

Generally, economic intuition would suggest that the low opportunity cost of time faced by these parents and the higher availability of time provide an incentive to substitute market-purchased goods with home production. This would imply more time than average is spent on meeting responsibilities at home, including childcare or other activities with children. More time with children would translate into an equilibrium position skewed to the right (towards higher values) on our parental time allocation scale. This economic logic, however, is based on strong assumptions. These include: a) that parents gain a personal utility from interaction with a child, or have high aspirations for their child's development; b) that there are no competing demands for available time; and c) that the parent is indifferent between reallocating more time to child-related activities or the labour market. In other words, there is an assumption that they would rather be playing with a child than spending the time searching for a new or higher paying job.

Of course, there will be many circumstances when these assumptions do not hold. If we utilise our theoretical framework, which emphasises subjective perceptions of the events based on the family stress model (Hill, 1949; Conger, et al., 2000), we will be able to account for some conditions facilitating certain responses to material pressures. For example, parents who are emotionally and mentally destabilised by their material circum-

stances might have no desire to interact with a child, or will not receive any personal utility from it. This would push the time input in the opposite (negative) direction. Moreover, according to other perspectives such as the time and income poverty framework (Burchardt, 2008), income-poor parents might also be time poor, with limited residual free time. The demand for competing household tasks is also greater in poor households due to insufficient resources to purchase market-produced substitution and/or they can be less productive due to the lack of expensive household tools, which save time. This in turn means that time might be directed towards more pressing household needs, or that parents perhaps engage in childcare as a secondary activity in parallel to performing other tasks.

The third assumption might also not hold because of other conflicting demands. Parents might prefer to spend time on improving their financial position and career prospects by doing extra work, searching for a job, or engaging in other income-generating activities. The risk of poverty increases with the loss of a job or unstable employment. Therefore, parents who have recently become poor but have not yet lost touch with the labour market might prioritise their job search over child-related activities at home. For some low-income parents, the level of subjective well-being might directly depend on the extent of their labour market engagement and career progression.

The ability of poor families to manage conflicting demands and needs can depend on the availability of additional resources such as social capital. This could, for example, consist of childcare assistance offered by other family members or extended family. As a safety net or a direct time substitution this can allow poor parents to spend more time in the labour market or on income-generating activities. The size of the substitution effect will depend on the general level of enjoyment (utility) parents receive from the interaction with a child and/or the extent to which a child-centred activity meets their normative assumptions regarding their role as parents.

Our theoretical framework allows a scenario when parents experiencing poverty might retain their time with children at the equilibrium levels in the medium or long run if they strongly believe in the benefits it provides to the child. In other words, normative

preferences will motivate them to adjust or better utilise their resources without compromising their time with their children. We saw from the collected qualitative evidence⁹ that Russian parents are likely to include elements of upbringing in the definitions of care, such as providing a child with a safe and comfortable environment. This is self-evidently something that cannot easily be bought in the market. Thus, the *demand* for childcare defines a base line for parental input or its desired level. For example, based on the literature discussed in Chapter 2, we can expect parental education as a driving force of parental preferences and aspirations to influence the extent of time spent with children.

Another important angle is from the interplay of factors. One qualitative study among low-income families in rural locations of the Leningrad Oblast investigated parental practices among parents with a basic level of education and those with any professional degree (Alekseeva, 2012). The study, which was based on qualitative interviews, reports that the instability of their working life significantly affects rural parents in poverty who are educated to lower levels. They were found to be in a constant state of searching for jobs or other temporary income. These adults had no control over their financial situation in the coming month, or over what working schedule they would have. This can, according to the study, be exacerbated by alcohol dependency on the part of either parent. Alekseeva notes that children in such families have only one structured thing in their life, which is pre-school or school hours (if they attend): *'parents cannot organise children's life or establish stable conditions for their development. Such parents hardly imagine the future of their children and their highest aspirations for them is to at least finish school'* (Alekseeva, 2012, p. 2). Thus, the cumulative effects of parents' lower education, rural location, poverty and other structural and individual disadvantage can cause a low point of equilibrium on the parental time allocation scale. Employment of parents and their labour market trajectories seem to bind these factors together, at least in the rural Russian context.

⁹ See Chapter 3.

4.3 Data, Empirical Strategy and Measurements

Our multivariate analysis is based on a pooled sample of children aged 0–14 from rounds 16–18 of the RLMS covering the years from 2007 to 2009. There were 2,072 children in the sample in 2007, 2,164 in 2008, and 2,072 in 2009. The questions on time use which are at the centre of our analysis were only introduced in 2007 and were then removed in 2010. The individual-level data from the years before 2007 and after 2009 therefore does not contain usable time use data, and we use it only to complement our exploratory analysis or for construction of our poverty dynamics variables and cannot use these years in the pooled sample.

The evidence on time use from Russia reviewed earlier clearly shows the importance of conducting the analysis disaggregated into mothers' and fathers' time contributions. We estimate a Tobit regression on the full sample of children but report only marginal (observed) effects. In the previous chapter, we discussed extensively the debate concerning the use of Tobit or OLS regressions in time use. In our case, the choice of Tobit is driven by our interest in the observed effects, when parents spend any non-zero time with their child, since we separately examine the extreme lack of parental involvement in the next chapter. As a check of robustness we tested alternative models, specifically seemingly unrelated regression (SUR) based on OLS estimation, and found consistent results.

Mothers' and fathers' time inputs as well as different types of child-related activities are interrelated: a father's childcare can substitute for the mother's and vice versa. Decisions about play and leisure activities with children cannot be done in isolation from each other. This implies that their error terms are correlated and we should account for joint and interdependent decisions in our model. Some recent studies (Bloemen & Stancenelli, 2008; Bonke, 2010; Gimenez-Nadal & Molina, 2013) have used SUR to account for this interdependency. SUR estimates mothers' and fathers' time inputs in each of the time categories in context by assuming joint error terms. The main difficulty in applying this approach to our data is tackling missing values. Since all regressions are applied to every observation, the model requires all independent variables to be present.

In our sample, this leads to significant attrition due to non-participating and missing parents. To counter the attrition and at least achieve some rough estimates for comparison we estimated SUR based on OLS by splitting the sample for children living in full families and those who live with a single mother. The results are largely consistent with the Tobit estimates on our key predictors, although we see some differences in the size of coefficients, in line with the findings of Gimenez and Molina (2013). The results of the SUR estimation are included in Appendix 1 to this chapter.

Dependent Variables

The questionnaire asked all adults in the household if they spent any time in the last 30 days on the following activities:

- ‘Played, occupied, spent your leisure time with children or grandchildren who live with you’; and
- ‘Looked after children or grandchildren who live with you – bathed them, fed them, took them to lessons’.

If respondents answered positively, they were then asked to report how much time this activity took in minutes on a ‘typical (working/study) day’ and on a ‘typical non-working/non-study day’. For brevity, we will refer to these as weekday and weekend-day respectively even if this is not entirely accurate for the minority of parents working part time.

We applied the same logic when we then constructed the average combined measure of working mothers’ and fathers’ time per day by weighting this information, using the sum of time on working days multiplied by five and weekends multiplied by two, then dividing the result by seven. For non-working parents, we kept the given answer for a typical non-working day as the answer for a working day would not apply. The resulting average time spent on play and care activities are our main dependent variables.

One piece of research (Booth, et al., 2011) underlines the importance of considering weekday and weekend time separately. In recognition of this, we also use disaggregated

data to investigate the time variations based on the day of the week. One has to remember, however, that the disaggregated measures for working days will be censored by the working status of the respondent. In our case, the questionnaire specifically asks the respondent to record the time of those who do not work/study under a ‘typical non-working day’. This means that the effects observed for ‘weekends’ are skewed towards non-working parents. Similarly, effects observed for the working week will only be representative for working parents. Overall, we do think that presenting disaggregated measures could give a more accurate account of parents’ strategies in managing their work–life balance and therefore proceed in that vein.

Predictors in the Model

As our focus is on the role of poverty, we start our presentation of predictors with the different measures of poverty experience used in our analysis.

Poverty Experiences

Within our theoretical boundaries the experience of poverty can be a ‘stressor’ or a ‘shock’ but can also mean limited resources. The distinction is difficult to make without looking at poverty from a dynamic perspective. One single spell of poverty for a young family could be a stressor, forcing a necessary adjustment in resources or demands. Poverty over a sustained period of time can be accounted for as accumulated material stress, but can also be considered as a depleted material resource under our PTE framework. The availability of longitudinal data enables us to distinguish the effects of a single spells of poverty as a stress-imposing circumstance either in the present or in the near past. This would contrast with persistent poverty, which is likely to define stable allocation choices.

Using the typology of poverty first suggested by Walker and Ashworth (1994), we construct a categorical variable of poverty which reflects child’s poverty status over the years. It is based on a RLMS-HSE constructed variable of households below a subsistence level, the specification of which are discussed in the previous chapter. The following four categories are used:

<i>Transient poverty</i>	Being poor once at any one point in time. Children who live in households with income below the all-Russia absolute poverty line in any one of the relevant survey years.
<i>Recurrent poverty</i>	More than one spell of poverty but none lasting more than one year. This includes children in poverty more than once within a five-year period but not in consecutive years.
<i>Persistent poverty</i>	A single spell of poverty lasting two or more consecutive years. Children who were poor in two or more consecutive survey years within a five-year period;
<i>Never in poverty</i>	Our reference category.

In order to better account for poverty history we incorporate the data on poverty status from the years 2006 to 2010 into our model. This enables us to record more than two years of occasional poverty or more than three years of persistent poverty, thus making the predictions more accurate. RLMS –HSE has two constructed poverty variables – all Russia average and regional poverty variables based on regional poverty lines (adjusted by the local price index). We chose to base our measure on the former. The reason for that is that regional poverty is a more conservative estimate; it produces very small sample sizes of families in poverty. Therefore, our categorical variable of poverty experience is based on the federal absolute poverty line measure. The generic RLMS-constructed variable ‘poverty’, which captures household income below the absolute poverty line in the current year, is also tested separately in alternative models. The model excludes those observations which were new to the panel in 2010 and had a poverty status in that year as there was not enough information for us to justify placing them in either category.

Table 4.1 shows that about 16% of children in our sample have been in poverty once at any point in time over the three-year period. Relatively few children (around 3%) had repeated but not consecutive spells of poverty and about 6% experienced persistent pov-

erty. Even if our sample shows somewhat conservative estimates, the distribution of income among children accurately reflects the general trend of increasing risks of poverty with the number of children in the family (Ovcharova & Popova, 2005; IISP & UNICEF, 2011).¹⁰

Table 4.1: Summary Statistics on Poverty Experience

Types of poverty experience		Number of siblings			Total
		0	1	2	
Never	N	2960	1525	215	4700
	%	81%	71%	49%	75%
Once	N	488	384	117	989
	%	13%	18%	27%	16%
Occasional	N	61	92	26	179
	%	2%	4%	6%	3%
Persistent	N	165	153	82	400
	%	4%	7%	19%	6%
Total		3674	2154	440	6268
		100%	100%	100%	100%

Apart from poverty we will consider the following influences presented based on the level of their observation:

Child's Characteristics:

Child age Four age categories (0–2, 3–6, 7–10, 11–14) reflect the stages of a child's development. This captures not just the linear progression of age but also the distinct milestones in a child's life, such as the age at which kindergarten or school is started. These categories are more suitable for our analytical needs than the simple controls of age and age squared, since they are more interpretable.

Gender A category variable with boys as the reference.

¹⁰ Due to methodological difference between FSSS (the Federal Statistical Service of the Russian Federation) and the RLMS, the whole sample of the RLMS survey produces different compositional estimates of poverty to FSSS (Heeringa, 2007, March). According to the FSSS office, the share of children aged 0–16 living below the subsistence level for Russia as a whole was 18% for 2008 (FSSS & UNICEF, 2009).

Number of siblings counts the number of siblings aged 0–14. Older siblings, where present, are included in the family size but not in this variable. The questions in the RLMS regarding time spent with children are asked only for children up to 14 years of age. Including older siblings into this variable without associated time use data would skew the aggregate numbers for the family.

Total hours of external care: total time a child received over the week through formal and informal care and relatives living outside.

Parents' Individual Characteristics:

Age at the birth: Mothers' and fathers' age at the birth of the youngest child is calculated based on the difference between the youngest child's and the parent's birth year. Missing values for parents not present in the household have been replaced with the average age per gender.

Low education: The education gradient or the level of parents' education is a standard measure in the majority of time use research. Since our interest is in the effects of disadvantage, we code our educational variable as low education with 1 assigned to parents with no professional degrees beyond high school and 0 to parents which hold any professional degree. Education is likely to capture both the human capital of parents, which is usually reflected in exposure to better job market opportunities, and labour market productivity resulting in higher wages, as well as a set of aspirations and parental beliefs. In this sense it influences the demand as well as resources for child-

related activities. Our key assumption is that the influence happens along the same vector, for example that the higher the education the more human resources the parent has and the higher their aspirations in regard to their child's development. We also attempt to distinguish between the two by controlling for the human capital component (*resources*) through reported market log wages. Therefore, we expect low education to capture preferences and aspirations (demand).

Work status Parents' formal work hours are endogenous to the time allocations for childcare and play. The decisions in regard to how much time to spend with a child or how much to work are interdependent. Parents' work status is a suitable alternative measure of parents' attachment to the labour market (Jenkins & Leary, 1995). Our data indicates that 60% of mothers and 86% of fathers are in full employment at any point in time (Table 4.2). It is very clear that mothers' employment varies significantly with the age of the child and the level of parental responsibility attached to it. Only 22% of mothers with a child of 0–2 work full time, while 41% are on maternity leave. Those who indicated 'not working' are likely to be self-employed, study, or possibly be unemployed prior to the birth of the child. Fathers' employment varies very little with the age of the child, but we see a distinctive trend towards higher unemployment with older children. Mothers' and fathers' work status is a simple dichotomy of non-working/working parents regardless of

the type and reasons for unemployment (maternity leave, part time, etc.).¹¹ Missing parents are considered as not working.

Table 4.2: Mother's and Father's Labour Market Participation based on Child's Age

Age Group	Mothers				Fathers			
	Working	Paid leave	Not working	Total	Working	Paid leave	Not working	Total
0-2 (Baby)	22%	41%	37%	100%	88%	0%	11%	100%
3-6 (Kindergarden)	71%	6%	22%	100%	89%	1%	10%	100%
7-10 (Primary School)	68%	6%	26%	100%	85%	1%	14%	100%
11+ (Secondary School)	74%	4%	21%	100%	83%	1%	16%	100%
Average	60%	14%	26%	100%	87%	1%	13%	100%

Log wages The model includes a proxy for parents' productivity in the form of observed as well as predicted log wages. The RLMS data includes a wage variable of all working individuals. First, we identify all parents for whom we have data on reported wage in any of the panel years (2006–2010). If a parent is missing wage data in one of the years, we extrapolate the wage value from the closest year. For example, mothers on maternity leave in 2008 would have a reported wage in 2007. We use this reported data instead of a missing value. For parents who have no wage data over the panel years we estimate the predicted value based on the regression proposed by Mincer (Lokshin, 2004; Burchardt, 2008). The model includes parents' age, category of education, type of settlement, region, and alcohol consumption. We then predict the missing values for non-working parents. This set of variables was chosen partially follow-

¹¹ Variables with more categories on the level of education (five levels for education) and work status have been also created and tested. The model fit and significance was noticeably better with dummy variables incorporated, therefore they are presented in the final model.

ing Mincer's suggestions (age and education) and partially based on the results of exploratory regressions on reported wages. Using predicted coefficients, we generate log wage using multiple imputation. Since imputations are applied only to parents who did not work in any of the recorded years, this is a relatively small number.

Mother's and Father's concern about necessities is a proxy for subjective perceptions of economic stress in the family. The question asked was 'how concerned are you about the possibility that you might not be able to provide yourself with the bare essentials in the next 12 months?' It is a dummy variable with 1 assigned to mothers responding with either 'very concerned' or 'somewhat concerned' and 0 assigned to 'both yes and no', 'not too concerned', and 'not at all concerned'. In alternative models, we also tested mothers' and fathers' generic satisfaction with economic conditions of the family at present time.

Satisfaction with economic condition is a dummy variable which records 1 for the responses 'not very satisfied' and 'not at all satisfied' to the question: 'To what extent are you satisfied with your material situation at present?' and 0 for all other responses.

Mother's self-ranked respect from others. This is an interval variable with a scale from 1 to 9. Respondents are asked to place themselves on a nine-step ladder where on the lowest step stand people who are absolutely not respected, and on the highest step stand those who are highly respected. Missing values were replaced by average values.

Fathers' self-ranked power ranking is also an interval variable with a scale from 1 to 9. Respondents are asked to place themselves on a nine-step ladder where on the lowest rung are people 'completely without rights' and on the highest are those who 'have a lot of power'. This variable is intended to be a proxy for father's professional and personal self-efficacy.

Heavy drinking: This is a dummy variable which assigns 1 to mothers and fathers who consume above a specified dose of ethanol per day. The construction of the variable was conducted in two steps, the first being a calculation of the sum on all reported grams of alcohol (including beer, vodka and homemade 'samagon'). Then, we formed categories according to WHO guidelines on risky drinking (gender-adjusted ethanol levels per day) (WHO, 2000). The guidelines consider alcohol consumption heavy if more than 60 grams of ethanol for men or 40 grams of ethanol for women are consumed once a week or more. Lesser amounts of alcohol or less frequent consumption are considered moderate.

Household Level:

Cannot afford to pay for classes is a dummy variable with 1 recorded for those adults who answered 'no' to the question: 'Is it possible for you or your family to pay for additional classes for your children, e.g. music classes, foreign languages, athletics clubs, and hobby groups?' This variable reflects some perceived level of material disadvantage: 40% of children in our sample living in persistent poverty

are reported to miss out on extra classes because the family cannot afford them, compared to only 14% in the group who never experienced poverty. At the same time, it is based on personal evaluation by the parents and is likely to reflect two factors. One is the actual lack of money that triggers the notion. The second is the priority given by the parents to spending money on child-related activities as opposed to other needs. The connection between this variable and time spent with the children can therefore work through both the resource as well as the demand side of our theory. For example, parents who report that they cannot afford extracurricular classes but who place a high priority on child's non-academic development would try to compensate for the lack of opportunities with their own efforts at home. In other words, the priority given to a child's non-academic development will be reflected in the actual time input parents devote to children, all other factors being constant. Since we control for poverty in the model, we consider the 'prioritising of child development' as the main influence of this variable and consider it under demands.

Presence of grandparents and elder siblings in the household. It is reasonable to suggest that the presence of grandparents in the same household could be endogenous to the extent of their involvement: families who decide to live together must have a good inter-generational understanding and matching willingness to support each other. However, we argue that, in Russia, despite a strong tradition of inter-generational support, there can be many other reasons for multi-

generational households, e.g. as a way to optimise the cost of living, provide accommodation to a newly formed family, or support a single mother to cope with material difficulties (Lokshin, et al., 1999). Accordingly, we treat this variable as exogenous in our model.

Living space m² per head. This is a continuous variable of available living space in square meters per person in the household. It indicates the density of living accommodation¹² and is weighted by dividing the reported size of living accommodation by the number of people in the household.

Rural A dummy variable which assigns 1 to those living in rural locations. We use the definition applied by the Russian National Statistical Office in which ‘rural’ is a settlement with fewer than or equal to 10,000 people. Rural locations in Russia are settlements with diverse economic and social level of development (Starodubrovskaya & Mironova, 2010). However, experts point to a number of prevailing problems associated with the rural locations: limited and sporadic economic opportunities, thus unstable work prospects and low wages; deterioration of human capital due to migration, dilapidated road and transport infrastructure; extremely limited information and communication channels including basic telephone networks. (Patziorokovskiy, 2009; Starodubrovskaya & Mironova, 2010; Bondarenko, 2009; Kopilov, 2012).

¹² The questionnaire has two questions on the size of accommodation: a) on the total general usable space including kitchen and bathroom; and b) on living accommodation (bedrooms only). The latter was used in the construction of our variable.

At the same time, pedagogical and sociological literature points out distinctive characteristics of community life and family norms in rural Russia: underdevelopment of social infrastructure including limited cultural or leisure opportunities (Kalganov, 1999), slow pace of life, conservatism and traditionalism, prevalence of heavy drinking particularly among male population, collective upbringing influenced by specific community norms regarding parental practices, extensive involvement of children in home production from as early as at age 5-6, limited opportunities of child socialisation outside the school and family (Polezhaeva, 2004; Patziorkovskiy & Patziorkovskaya, 2010), high influence of public opinion on parents' pedagogical views (Bukreeva, 2010). So, theoretically rural location can represent both *resources* as well as *demands*. As we control for parents' work status, low education, wages and poverty, which capture individual socio-economic disadvantage in our model, we expect the rural location to capture more structural, community-specific conditions and corresponding social and cultural norms. Although these are difficult to separate in such an aggregate variable, we believe they are captured under our model specification. We measure it as a dummy variable on rural location with 0 assigned to all other types of settlements.

Local cost of child care is a constructed variable that represents an attempt to control for the effect of childcare prices on parents' behaviour. The generic assumption is that the price reflects quality. As we mentioned earlier, most pre-school institutions are still funded from local

budgets and on the basis of cost-sharing with parents. The system of subsidies to families varies by locality and can include criteria such as low income or children with disability. The RLMS child questionnaire asks the respondent to report the weekly expenditure on childcare and the time a child spends in the formal institution (our formal care variable).

Similar to Lokshin's approach (2004) we assume the quality of formal care to be universally distributed within a locality. Thus, we first estimate the cost per hour of care per individual child, and then weigh it by using the average per hour price of care in the corresponding locality (average among children in that locality).

Table 4.3 presents mean values and standard deviations in the pooled sample of children.

Table 4.3 Summary Statistics for Selected Dependent Variables

Variable	Mean	SD	N
Child Age	6.46	4.07	6268
Gender	0.50	0.50	6268
Any illness in the last 30 days	0.37	0.48	6262
Mother's age at birth	25.36	5.24	5998
Mother with low education	0.20	0.40	5998
Mother's work status	0.60	0.49	5998
Mother's bad health	0.03	0.18	5998
Mother's heavy drinking	0.12	0.33	5998
Father with low education	0.19	0.40	4855
Father's work status	0.87	0.34	4855
Father's heavy drinking	0.29	0.46	4855
Can't pay for classes	0.15	0.36	6268
Grandparent in the household	0.29	0.45	6268
Older sibling in the household	0.11	0.32	6268
Hours of external care per day	7.68	7.15	1422
Local cost of child care per child	37.52	32.41	5209
Living space m ² per head	12.29	7.59	6268
Rural	0.26	0.44	6268

Based on our theoretical model, we formalise the concepts of *resources* and *demands* using the RLMS data as the following:

Resources:

- subjective well-being – mother’s self-ranked respect from others, father’s self-ranked power, concern about getting necessities;
- time availability – parents’ work status, returns to human capital, external childcare per day;
- labour market productivity – log wages;
- social capital – presence of grandparents, elder siblings, presence of father in the household, total hours of childcare received outside the family; and
- material resources – poverty, density of living conditions, cost of childcare in the locality.

Demands:

- child characteristics – age group, gender, number of siblings;¹³
- parent characteristics – the age of the parent at birth of the youngest child, heavy drinking;
- aspirations, beliefs and ideas – parents’ low education, inability to pay for classes; and
- community structural characteristics, social and cultural norms – rural location.

4.4 Descriptive Exploration of Data from Child’s Perspective

To gain a first feel for our dependent variables, we will examine the general distribution of reported time and how this time is split between different household members.

¹³ In exploratory diagnostic regressions, we also tested child’s health status (illness in the last seven days), the level of his/her physical activity, and reported chronic illnesses. They were consistently not significant when we controlled for other child’s characteristics or other individual- or household-level factors.

Variations in the Sample of Children

A first glance at the parental time input in our sample (including the observed or non-zero time allocation) reveals a wide variation between children in the level of received attention and care from parents (Figure 4.2). While the average time for mother's leisure activity with a single child is 2 hour 50 minutes per day, the maximum reported contribution is 4.3 standard deviations from this mean. The disparity between children in mothers' input in childcare is even bigger: 7.7 standard deviations from the reported mean of 1 hour and 58 minutes. Variations between children in the level of received care from fathers are similarly large, with the maximum reported value being seven standard deviations from the average of 1 hour 7 minutes. Although the extremes are further away in care than in play activities, care input is much more 'tightly' distributed around the mean in the mother's as well as the father's time allocations. This might suggest that there is some perceived normative core of parental responsibilities that parents have to engage in. Meanwhile, leisure can be more sensitive to parental preferences or other factors.

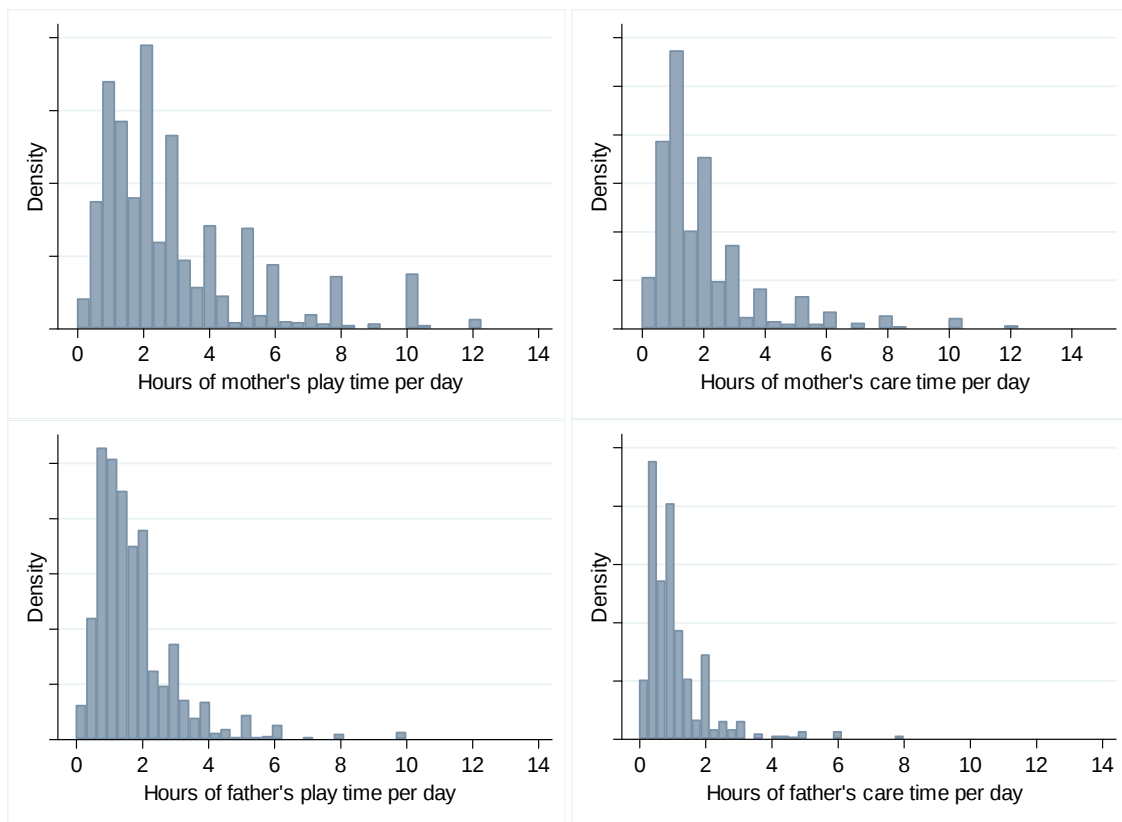


Figure 4.2: Play and Care Time Distribution for Mothers and Fathers of a Single Child (observed)

Table 4.4 presents the distribution of parental time in three sub-groups of children: (1) without any siblings; (2) with one sibling up to age 14; and (3) with two or more siblings up to age 14, based on the observed data (excluding zeros). Our data shows that, on average, a mother's and father's time input increase only incrementally with each additional child.

A father's time input in care and play is generally slightly over 50% of a mother's contribution. This is different in big families, where increase in the demand for care is entirely covered by mothers while the father's involvement remains unchanged for care and even reduced for play with children. With a high rate of working fathers in our sample (86.5%), this points to limited time availability and inflexibility in the father's time.

Table 4.4: Play and Care Time for Mothers and Fathers by Number of Children (observed)

Number of children		Mother		Father	
		Play	Care	Play	Care
Single child	Mean	2.81	1.97	1.68	1.12
	SD	2.28	1.82	1.27	0.97
	Min	0.00	0.00	0.00	0.00
	Max	12.67	15.00	10.00	8.00
	N	2748	2438	2013	1131
Two children	Mean	2.92	2.23	1.70	1.11
	SD	2.26	1.91	1.28	0.83
	Min	0.00	0.00	0.00	0.00
	Max	12.00	12.00	12.00	6.00
	N	1696	1561	1465	855
Three or more children	Mean	3.39	2.60	1.50	1.09
	SD	2.61	1.91	1.00	1.13
	Min	0.33	0.17	0.00	0.00
	Max	12.00	10.00	5.57	6.43
	N	338	320	290	205
Total	Mean	2.89	2.11	1.67	1.11
	SD	2.30	1.87	1.26	0.93
	Min	0.00	0.00	0.00	0.00
	Max	12.67	15.00	12.00	8.00
	N	4782	4319	3768	2191

Distribution of Time in Families with Multiple Children

Average reported mother's play and care time also remains practically unchanged with the addition of the second child in the family but noticeably increases when the child has more than two siblings. The increase is not proportional to the number of siblings. Parents either reallocate the available time between siblings or maximise the efficiency of their time input by making children share parental time. Economies of scale as found by Gustaffson and Kjulin in Swedish families seem to be a reasonable explanation (Gustafsson & Kjulin, 1994). However, without data per child in households with multiple children and without more information on the 'quality' of interaction, we cannot say with confidence if there is any 'time input efficiency' or how it is achieved. Nevertheless, we can reasonably assume based on our data that children with multiple siblings do not receive the same individual attention as a single child.

In both types of activities we deal with the issue of outliers – reported time beyond the reasonable limit. We excluded several reported values which exceeded 24 hours. At the same time, there was not sufficient ground for us to exclude observations with reported 10–12 hours of childcare or leisure with children (primarily by mothers). Firstly, they are not technically outliers as we have multiple reported values anywhere between eight and 12 hours, making it difficult to define a cut-off point. Secondly, our assumption is that these are children with 'stay at home' mothers who take it as their job to care for children. They are likely to spend time on childcare all day long either as a primary or secondary activity. Although this can be attributed to the aggregate nature of our data, it might also reflect a general understanding of their role of a parent at this point in time.

Allocation of Responsibilities within the Family

About 29% of children in our sample live in multi-generational households over all reported years. This is significantly higher than the OECD average of 6.6% and even higher than other East European countries like Poland (22%) or the Slovak Republic (17%) (OECD, 2011b). Examining the role of grandparents and elder siblings is important from a child's perspective as it helps us to understand the pool of human resources available to the child at home. Here, we want to highlight which share of 'parental re-

sponsibility' is provided by parents themselves. We present the allocations from two different perspectives: a) for the whole sample of children adjusted for 'zeros' (family members are not present or not participating) – Figure 4.3; and b) for children with observed time contributions from corresponding family members (excluding 'zeros') – Figure 4.4. Attention is drawn to the relative allocations of care and play responsibility among family members and parents rather than to the absolute numbers of their individual contributions. This is due to certain methodological issues affecting our time use data, as discussed in the previous chapter.

Figure 4.3 represents each family member's time inputs in the full sample of children. Our data strongly confirms the findings of other international and Russian studies that mothers are the key contributors of human investments in children in the family (Patrushev, 2005; Karakhanova, 2006). They are not only the main 'carers' but also the key 'entertainers' for children.

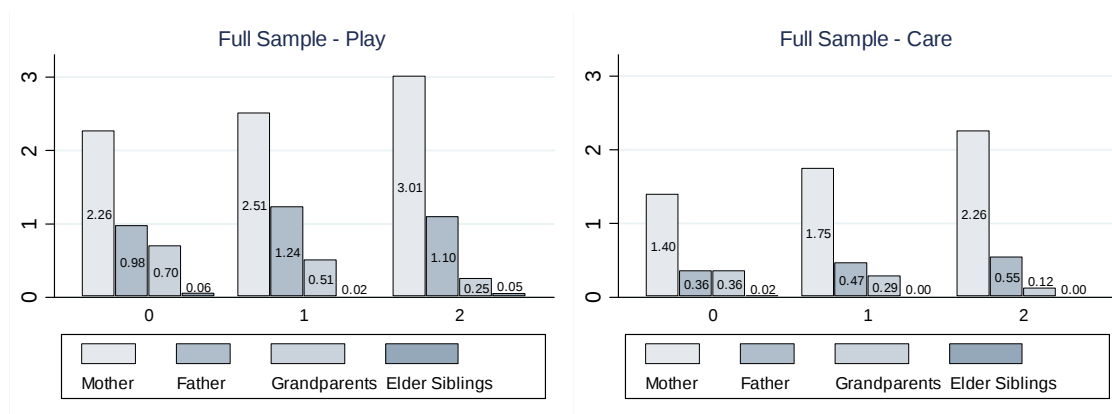


Figure 4.3: Family Members' Play and Care Time Input by Number of Children in Full Sample (including 'zeros')

Grandparents' time contribution in childcare as observed for the whole sample of children is quite marked but not comparable to the one from the mother. In the case of a single child, grandparents' contribution is equal to the one from fathers, but is reduced as the family gets bigger. As the mother is likely to reduce her labour market participation when she has more than one child, the decline in grandparents' contribution here seems to be compensated for or caused by her higher involvement. Grandparents' time

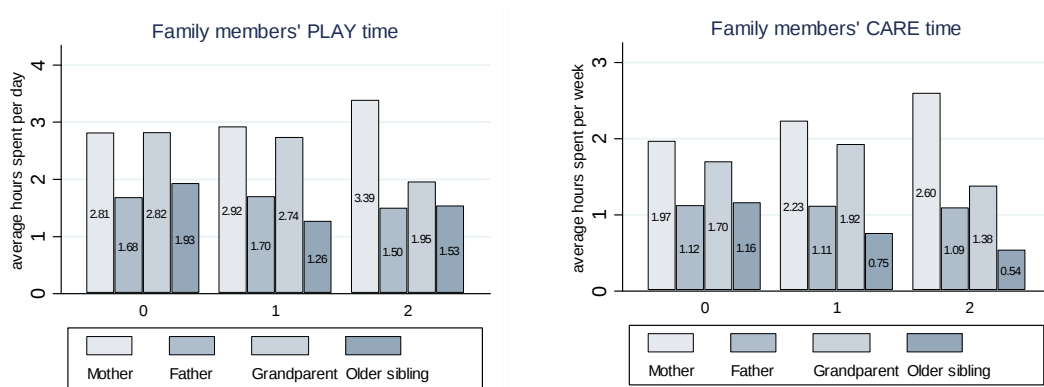


Figure 4.4: Family Members' Play and Care Time Input by Number of Children (observed, excluding 'zeros')

input in leisure activities with children is noticeably higher than in care. Older siblings' time contribution is small relative to other family members for the whole sample of children. This is primarily attributable to the small number of households with a residing older sibling (15 years and older). Yet if we look closely at those children who actually have older siblings, the prominence of their contribution is undeniable (Figure 4.4).

Figure 4.4 represents play and care time only for those children who have the corresponding family member in the family who spends time playing and caring for the child.¹⁴ Older siblings' largest time input is observed in play activities. Irrespective of the number of siblings, children spend the same amount of time or more with their older sibling as they do with the father.¹⁵ This can be explained by the greater availability of older siblings' time compared to fathers' and the fact that young people might sometimes be better companions to children in leisure than parents. In care time, however, such an interpretation does not adequately capture family roles. Here, older siblings' time is utilised either in addition to or instead of parental care time and as such might indicate a direct substitution in relation to parental involvement.

Overall, our exploration of the data confirms that human investment in children is a 'family business' and Russian families are likely to pool their time resources together to meet childcare responsibilities or their expectations in regard to their child's development. It is not unreasonable to suggest that children in multi-generational households

¹⁴ An extended analysis of non-participation by parents will be presented in Chapter 5.

¹⁵ An exception is care activities in big families, where we do not have enough observations.

are likely to benefit from social interaction with other family members through shared experience and enriched communication.

4.5 Empirical Results

The results of the Tobit estimate on mothers' child-focused leisure and care activities are reported in Table 4.5. The corresponding model for fathers' time in both activities is presented in Table 4.6. We present the results according to our theoretical framework under the generic groups of *resources* and *demands*. The presented Tobit estimates control for clustering of children within a household.

Mother's Time

Resources

Our findings show that a transitory (single) poverty spell explains variations in a mother's time input in both activities. With a high level of confidence we can say that children who experience a single 'dip' into poverty have on average 0.35 hours (21 minutes) less leisure interaction with the mother and receive 0.21 hours (13 minutes) less of her care input compared to those children who were never in poverty. The total negative effect in both activities is primarily driven by what we observe on non-working days. Further examination of the data revealed that the difference in mothers' time was present for both groups – children with working and not working mothers – but was largest among children with working mothers over the weekend. A suspected interaction effect between poverty and work status tested in a separate model was not statistically significant. Separate tests of a generic variable indicating current poverty strongly confirms this result, which allows us to say that the effect of transient poverty is likely to reflect a current poverty spell rather than experience of it in the past.

Table 4.5: Mother's Play and Care Time

Variables	Play			Care		
	Weighted Average	Workday	Non- Workday	Weighted Average	Workday	Non- Workday
Child Characteristics						
Age, Ref: 3-6 (toddlers)						
0-2 (babies)	0.703*** (0.0911)	0.105* (0.0454)	0.739*** (0.110)	0.474*** (0.0646)	0.0403 (0.0312)	0.489*** (0.0773)
7-9 (primary school)	-0.493*** (0.0712)	-0.112*** (0.0335)	-0.754*** (0.0946)	-0.336*** (0.0545)	-0.120*** (0.0244)	-0.455*** (0.0701)
10-14 (secondary school)	-0.907*** (0.0828)	-0.321*** (0.0379)	-1.257*** (0.108)	-0.819*** (0.0669)	-0.331*** (0.0301)	-1.044*** (0.0837)
Gender	-0.0755 (0.0586)	-0.0422 (0.0262)	-0.117 (0.0739)	-0.0556 (0.0442)	-0.0535** (0.0200)	-0.0848 (0.0534)
Number of siblings	0.179** (0.0563)	0.0284 (0.0303)	0.172* (0.0697)	0.201*** (0.0385)	0.0183 (0.0245)	0.199*** (0.0451)
Parent's characteristics						
Age at birth	-0.0286*** (0.00713)	-0.00521 (0.00330)	-0.0394*** (0.00912)	-0.0153** (0.00525)	-0.00359 (0.00240)	-0.0188** (0.00646)
Work status	-0.982*** (0.0854)	1.489*** (0.0580)	-0.477*** (0.0989)	-0.723*** (0.0633)	0.973*** (0.0412)	-0.533*** (0.0725)
Wage	0.00736 (0.0460)	0.0233 (0.0257)	0.0809 (0.0531)	0.0549 (0.0327)	0.0100 (0.0196)	0.0850* (0.0380)
Low education	-0.530*** (0.111)	-0.0651 (0.0473)	-0.557*** (0.136)	-0.191** (0.0729)	-0.0207 (0.0323)	-0.180* (0.0863)
Heavy drinker	0.0640 (0.0937)	0.0159 (0.0419)	0.144 (0.121)	-0.0997 (0.0631)	0.0242 (0.0301)	-0.0847 (0.0789)
Concern about getting necessities	0.0677 (0.0674)	0.0290 (0.0322)	0.0277 (0.0839)	-0.00523 (0.0494)	-0.00204 (0.0234)	-0.0140 (0.0603)
Mother's perceived respect	0.0429* (0.0213)	0.00701 (0.00999)	0.0748** (0.0265)	0.00772 (0.0167)	0.000787 (0.00751)	0.0166 (0.0194)
Household characteristics						
Poverty, Ref: Never in poverty						
Once	-0.346** (0.108)	-0.105 (0.0557)	-0.414** (0.128)	-0.207** (0.0788)	-0.0472 (0.0416)	-0.211* (0.0936)
Recurring	-0.153 (0.241)	-0.104 (0.0838)	-0.0715 (0.304)	-0.274 (0.159)	-0.144 (0.0994)	-0.275 (0.204)
Persistent	-0.342 (0.189)	-0.0484 (0.0777)	-0.446 (0.232)	-0.338* (0.131)	-0.112* (0.0552)	-0.334* (0.150)
Can't pay for classes	-0.0485 (0.103)	-0.0379 (0.0459)	0.00574 (0.124)	-0.132 (0.0692)	-0.0509 (0.0353)	-0.184* (0.0804)
Father in the household	0.00780 (0.0857)	0.0468 (0.0414)	-0.0606 (0.124)	0.0645 (0.0682)	0.0228 (0.0328)	0.0261 (0.0896)
Grandparent in the household	-0.166 (0.0867)	-0.0266 (0.0433)	-0.248* (0.109)	-0.0653 (0.0646)	-0.0474 (0.0279)	-0.0907 (0.0768)
Older sibling in the household	-0.539*** (0.128)	-0.180** (0.0567)	-0.524*** (0.159)	-0.461*** (0.0947)	-0.0981* (0.0450)	-0.502*** (0.114)
Relative outside household cared for child	0.0110 (0.00807)	0.00401 (0.00363)	0.0264* (0.0105)	0.00489 (0.00598)	0.00375 (0.00264)	0.00802 (0.00779)
Local cost of child care per child	0.00182 (0.00129)	-0.000877 (0.000601)	0.00332* (0.00157)	0.00151 (0.00100)	-0.000612 (0.000453)	0.00254* (0.00118)
Living conditions						
Living space m ² per head	0.00201 (0.00468)	0.000758 (0.00197)	-0.00278 (0.00617)	-0.0115** (0.00378)	-0.00383* (0.00162)	-0.0147*** (0.00446)
Rural	-0.505*** (0.0934)	-0.186*** (0.0431)	-0.693*** (0.116)	-0.221** (0.0726)	-0.148*** (0.0315)	-0.285*** (0.0851)
Model Characteristics						
Observations	5,558	5,558	5,558	5,558	5,558	5,558

Robust standard errors in parentheses, *** p<0.001, ** p<0.01, * p<0.05

We also find that persistent (including current) poverty is negatively associated with the mother's care input: children who experience persistent poverty are likely to receive 0.34 hours (20 minutes) less of their mother's care and supervision. The effects of poverty were quite stable in the block-wise regression. It reacted to the introduction of density of the accommodation and rural location with some reduction of statistical significance, meaning that those variables removed some of the associations.

As anticipated, labour market engagement – as a proxy for time availability – has a very big impact on a mother's time with her children. The combined measure of time on an average day supports consistent international evidence from time diaries that working mothers reduce their time with children (Bianchi, 2000). It has the highest coefficients within our model for both play and care time input when holding other factors constant. The magnitude is bigger for leisure activities with children: children with a working mother on average spend 1 hour less interacting with her through leisure/play activities and receive 0.72 hours (43 minutes) less of her care input.

However, the analysis disaggregated by average working and non-working day shows a somewhat different picture. Specifically, we find that on a normal working day working mothers are likely to spend more not less time on play as well as childcare activities: by 1.4 hours (1 hours and 26 minutes) and 0.97 hours (58 minutes) respectively. In play activities, the observed effect is the biggest coefficient of the model. On a normal non-working day (weekends), the effect is indeed negative and very similar: 40 and 38 minutes in play and care respectively. These results were confirmed by a test in alternative OLS and SUR OLS models (see Appendix 1 to this chapter). They are also in line with what was found in the recent study by Ferragina et al. (2012).

We find no statistically significant effects of labour market productivity (log wages) on mother's time with children, which is consistent with the findings of Bloemen and Stancenelli (2008), Bonke (2010) and Gimenez and Molina (2013).

The influence of older siblings on a mother's time is the only observed effect among the tested factors of social capital. The negative relationship between the presence of older

siblings and a mother's own contribution is highly statistically significant and consistent across types of activities and days of the week. It is associated with 0.53 hours (31 minutes) less time from a mother in play and 0.46 hours (about 28 minutes) less time in care. This indicates that elder siblings are the direct substitute for the mother's time and a true social resource for her. The presence of grandparents as well as the utilisation of external care is only marginally significant on a non-working day and only in leisure.

We find that a mother's self-efficacy measured through her self-ranked respect from others showed a marginally significant positive effect on her leisure interaction with children. The higher a mother's ranking is, the more time on average she spends playing with children. Yet the magnitude of this effect is relatively modest. A full swing from the lowest ranking of 'absolutely not respected' to the highest ranking of 'very respected' is associated with 19 minutes more of the mother's leisure time input. The effect does not vary with poverty status (tested separately through inclusion of an interaction effect).

Demands

A child's age is strongly associated with parental time allocation decisions. This is expected and also confirmed in the findings of other studies (Gustafsson & Kjulin, 1994; Sousa-Poza, et al., 2001; Kimmel & Connelly, 2007). It reflects the demand for attention and care which is gradually reduced with age. We also find that a mother's time is influenced by the number of siblings aged 0–14 a child has, but the size of the effect is small compared to other factors. This is consistent with the findings by Malathy (1994).

Older mothers are found to spend less time on child-related activities in both leisure and care. The magnitude is also relatively small. For example, a five-year increase in a mother's age reduces her contribution to play with children by 0.02 hours (6 minutes) and by 0.01 hours (3 minutes) in childcare, controlling for children's characteristics.

As predicted by the literature on time use, we find that parents' education is important in determining parental demands. As a proxy for parental preferences and aspirations (controlling for human capital through wages), low education is found to be negatively

associated with mother's time in both activities. The magnitude of this effect is much stronger for leisure time: a mother's lack of professional education is associated with 0.53 hours (32 minutes) less time being devoted to leisure interaction with children and 0.19 hours (11 minutes) less time caring for or looking after the children. Once again, the model disaggregated to working week and weekend time shows that these effects are primarily observed over the non-working days. However, contrary to poverty, here the biggest difference in time allocations is among non-working mothers. Mothers with low education levels and non-working mothers allocate relatively less time to children, particularly on 'non-core' play activities.

A rural location is intended to capture the underling community characteristics, including social norms and cultural perceptions in a close community. The latter are inseparable from the influences of structural factors of economic disadvantage in Russia. This category is found to be consistently influential in predicting a mother's lower time contributions regardless of the type of activities or days of the week. Children living in rural locations, on average, receive 0.50 hours less leisure interaction and 0.22 hours (13 minutes) less care or supervision time from the mother.

Overall, controlling for children's characteristics, the biggest negative influences on a mother's time input are on the side of *resources*: her work status, transitory poverty, persistent poverty (care only), and the presence of older siblings, with those on the side of *demands* being low education (play only) and rural locations.

Fathers' Time

As expected, fathers show a distinctly different pattern.

Resources

We find the influence of transitory or recurrent poverty experience on father's time with children only on a working day (disaggregated measure). However, the size of the effect is small (about 6 minutes) but relative to the magnitude of other influences in father's model. We also find negative effects of persistent poverty on father's care time in the aggregate measure.

Table 4.6: Father's Play and Care Time

Variables	Play			Care		
	Weighted Average	Workday	Non-Workday	Weighted Average	Workday	Non-Workday
Child Characteristics						
Age, Ref: 3-6 (toddlers)						
0-2 (babies)	0.232*** (0.0519)	0.156*** (0.0324)	0.283*** (0.0747)	0.222*** (0.0267)	0.122*** (0.0194)	0.289*** (0.0358)
7-9 (primary school)	-0.305*** (0.0526)	-0.129*** (0.0331)	-0.537*** (0.0761)	-0.181*** (0.0319)	-0.0955*** (0.0211)	-0.247*** (0.0420)
10-14 (secondary school)	-0.543*** (0.0602)	-0.260*** (0.0386)	-0.836*** (0.0885)	-0.407*** (0.0409)	-0.248*** (0.0265)	-0.530*** (0.0533)
Gender	-0.135*** (0.0393)	-0.0934*** (0.0256)	-0.230*** (0.0554)	-0.0192 (0.0243)	-0.0212 (0.0167)	-0.0491 (0.0308)
Number of siblings	0.0582 (0.0348)	0.0359 (0.0212)	0.0807 (0.0524)	0.106*** (0.0221)	0.0849*** (0.0210)	0.123*** (0.0249)
Parent's characteristics						
Age at birth	-0.00539 (0.00396)	-0.00144 (0.00269)	-0.0127* (0.00573)	-0.00120 (0.00267)	-0.00141 (0.00182)	-0.00248 (0.00325)
Work status	0.0864 (0.0819)	1.135*** (0.0739)	0.405*** (0.100)	0.00820 (0.0497)	0.550*** (0.0533)	0.0377 (0.0591)
Wage	0.0972** (0.0371)	0.0149 (0.0232)	0.115* (0.0537)	0.0535* (0.0219)	0.0244 (0.0160)	0.0662* (0.0290)
Low education	-0.299*** (0.0606)	-0.101** (0.0387)	-0.351*** (0.0893)	-0.0175 (0.0401)	0.0287 (0.0312)	-0.0195 (0.0515)
Heavy drinker	-0.000213 (0.0522)	-0.0276 (0.0334)	0.0117 (0.0760)	-0.0757* (0.0296)	-0.0469* (0.0203)	-0.0778* (0.0390)
Concern about getting necessities	-0.0363 (0.0477)	-0.0457 (0.0318)	-0.115 (0.0663)	0.0571 (0.0295)	0.0215 (0.0217)	0.0501 (0.0378)
Father's perceived power ranking	-0.0539*** (0.0136)	-0.00938 (0.00834)	-0.0590** (0.0204)	-0.0283*** (0.00786)	-0.0140** (0.00544)	-0.0332** (0.0106)
Household characteristics						
Poverty, Ref: Never in poverty						
Once	-0.00268 (0.0781)	-0.102* (0.0489)	-0.0370 (0.110)	-0.0639 (0.0482)	-0.0830* (0.0345)	-0.102 (0.0607)
Recurring	0.167 (0.186)	-0.0872 (0.0990)	0.0704 (0.278)	-0.162 (0.0970)	-0.108 (0.0719)	-0.118 (0.143)
Persistent	-0.102 (0.132)	0.0972 (0.0851)	-0.158 (0.191)	-0.171* (0.0806)	-0.0977 (0.0598)	-0.206 (0.109)
Can't pay for classes	-0.266*** (0.0579)	-0.126*** (0.0380)	-0.338*** (0.0855)	-0.0969** (0.0370)	-0.0766** (0.0259)	-0.104* (0.0485)
Grandparent in the household	-0.0799 (0.0597)	0.00110 (0.0398)	-0.103 (0.0841)	-0.0667 (0.0351)	-0.0173 (0.0241)	-0.0710 (0.0451)
Older sibling in the household	-0.338*** (0.0772)	-0.143* (0.0559)	-0.464*** (0.113)	-0.316*** (0.0513)	-0.220*** (0.0378)	-0.349*** (0.0654)
Relative outside household cared for child	0.00244 (0.00587)	-0.00232 (0.00369)	0.00386 (0.00801)	0.000621 (0.00339)	-0.00104 (0.00219)	0.00115 (0.00455)
Local cost of child care per child	0.000983 (0.000953)	-0.00166** (0.000541)	0.00383** (0.00143)	-0.000378 (0.000517)	-0.000919** (0.000347)	-0.000143 (0.000683)
Living conditions						
Living space m ² per head	-0.00539 (0.00330)	-0.00223 (0.00214)	-0.0151*** (0.00434)	-0.00104 (0.00218)	-0.000162 (0.00142)	-0.00130 (0.00269)
Rural	-0.230*** (0.0643)	-0.221*** (0.0426)	-0.445*** (0.0922)	-0.113** (0.0408)	-0.0649* (0.0299)	-0.167** (0.0526)
Model Characteristics						
Observations	4,786	4,786	4,786	4,786	4,786	4,786

Robust standard errors in parentheses; *** p<0.001, ** p<0.01, * p<0.05

Children in persistent poverty are likely to receive 0.17 hours (10 minutes) less care or supervision from the father. The size of the effect in this model is still small but bigger by comparison than the effect of father's wages or rural location.

We find that fathers' availability measured through his work status is highly statistically significant for his contribution to leisure activities and care on a working day. Similarly to our finding for mothers, fathers' employment is associated on average with 1.13 hours (1 hour and 7 minutes) more time in leisure interaction with children over the working week and 0.4 hours (24 minutes) more play time over the weekends. This means that, holding all other factors constant, working is associated with a father's more devoted behaviour. The magnitude of these effects is quite large, comparable only to the child's age coefficients in the model.

Unlike in the model for mothers, here we do find some association between labour market productivity (log wages) and fathers' time contributions in both activities with children. As an indicator of productive capacity, this suggests that a father's time devoted to children is responsive to the opportunity cost of his time. However, contrary to what time allocation theory would suggest, the direction of the effect is positive and relatively small, amounting to only about 1 minute each for a doubling in wages. Interestingly, the block-wise regression conducted separately (See Appendix 1 to Chapter 4) indicates that the effect of market productivity is significantly diminished after the introduction of parents' education and especially rural location, confirming our suggested compounded influences between these variables.

Similarly to the relationship observed in relation to a mother's time, we see a strong and consistent negative association between the presence of older siblings in the family and father's time in both activities. On average, children with an older sibling will receive 0.34 hours (20 minutes) less play interaction with a father and 0.31 hours (18 minutes) less of his care contribution. The magnitude of the effects is much stronger for play activities on non-working days. This is surprising as, presumably, fathers have more time for leisure with children over the weekend. So, it is perhaps not simple time availability but some competing priorities that call for older siblings' substitution of father's time.

The father's measure of self-efficacy – his self-ranked power – is strongly associated with a lower contribution to leisure as well as care time input. This is the opposite direction compared to the effect observed for mothers. A higher perception of power is associated with less time spent with children. The magnitude is relatively small for a single step on the ranking ladder, but the move from a position of 'completely without rights' to the top position 'have a lot of power' is associated with 24 minutes less leisure time with children and 9 minutes less childcare. Exploratory prior analysis revealed that this variable is negatively influenced by a father's involuntary unemployment and bad health and positively by income and age. Thus, self-perception of rights and ability to influence things is very likely to be related to a father's professional experience, history of employment, redundancies, or career progression. It might also reflect a general dissatisfaction with employment, including his earning capacity. The relative influence of these effects is modest compared to, for example, a father's low education or rural location discussed below.

Our data indicates that an increase in the cost of care purchased on the local market (including publicly provided nursery and pre-school places) has a negative effect on fathers' play time but only in the disaggregated models. The higher the cost of formal childcare, the less time a father devotes to play activities on working days. The effect is small: A 10 Rouble increase in the price of external care per hour decreases play time by about 1 minute. With average prices for full-time care varying from 5,000 to 18,000 Roubles per month depending on the region and type of settlement, this is a relatively small change.

Demands

The analysis shows that girls in our sample are likely to spend less time in leisure interaction with the father than boys. This is an interesting finding in terms of child effects, which reflects gendered choices in play activities. However, unlike other international studies (Bonke & Esping-Andersen, 2011), our data shows no variation of this effect by father's educational level. Boys can prefer to spend leisure in active play outdoors or

indoors, and fathers might be more responsive to that. Of course, the other way around is also possible: fathers can take the initiative in active play.

Children's age is one of the strongest predictors in the fathers' models. A father's reduction in time devoted to children is particularly big for 10–14 year olds: at this age, it amounts to a 0.54-hour (32 minute) drop in father's play activities and a 0.4-hour (24 minute) reduction in care when compared to reference group of children aged 3-6 on an average day.

Fathers with only basic education spend on average 0.29 hours (17 minutes) less leisure time with their children than their more educated peers. The effect is consistent through different days of the week but the magnitude is slightly bigger over the weekend (0.36 hours or 21 minutes).

The self-reported inability to pay for children's extra classes is one of the few variables that have high predictive power and a negative direction across all models. However, the magnitude is markedly larger for the father's time input in play with a coefficient similar to the effect of education: it is associated with 0.26 hours (15 minutes) less time with children on this activity. The consistently negative influence of this indicator on both activities indicates that low priorities being given to non-academic development are likely to be linked to a father's general thinking on the necessity of his own contribution.

Similarly to the observed effects in the mothers' model, rural location is associated with lower than average time investments in children regardless of the activity, controlling for all other factors. The magnitude of the relationship in leisure activities with children is larger than in care, especially over the non-working day: rural children are likely to spend 0.44 hours (26 minutes) less time playing with their father over a non-working day compared to 0.16 hours (9 minutes) less time received in care.

Meanwhile, heavy drinking shows a marginally significant (at 5%) negative effect in a father's care input across all days of the week, although the size of this influence is relatively small with a difference of only 0.07 hours (6 minutes). Although the result indi-

cates that, on its own, alcohol consumption is unlikely to dramatically change a father's behaviour, we are conscious of a possible downward bias as the data might not reflect true consumption levels due to the stigma attached. We did not observe any association with alcohol consumption in the mothers' models.

Overall, the strongest negative associations with father's time with children, controlling for child's characteristics, are on the side of *resources*, persistent poverty (care only) and the presence of older siblings and, on the side of *demands*, low education (play activities), inability to pay for classes, and rural location.

4.6 Discussion

Returning to the theoretical assumptions discussed earlier in this chapter we relate our findings to some of the proposed influences. Overall, based on our data we see that the *resources* group does not explain all of the variations between the children or lower parental contributions to child-related activities. For example, while unpaid maternity leave secures time availability of mothers in the first years of a child's life ('resources'), the underlying needs in care and development ('demand') call for a certain minimum level of involvement. Our data confirms that both are likely to contribute to higher time input in care as well as play from mothers for babies (0-2) compared to toddlers/pre-school children (3-6).

The underlying beliefs and aspirations of parents and their understanding of their role all influence the extent of their time contribution, especially in non-core activities such as leisure interactions with children. We see this in the observed negative relationships between parents' time allocation and low parental education level and consistent influences of expressed inability to pay for classes, a proxy for low priority being given to a child's non-academic development. Consistent with our hypothesis, an expressed inability to pay for a child's classes has a negative effect on child-focused time input, but only explains a father's lower than average contribution. Rural location is one of the most consistent influences across all models, including both parents and different types of activities. This suggests that the underlying community characteristics which define the

traditional cultural and social norms of parenting (Patziorovskiy & Patziorkovskaya, 2010; Polezhaeva, 2004) have a role in defining rural locations as one of the most persistent predictors of lower than average parental contributions.

This is consistent with the first proposition of the PTE model, namely that *demands* together with *resources* define parental time allocations. We see that demands are the long-term forces (such as territorial factors) or evolving base responsibilities (child characteristics). Resources are crucial, especially time availability and severely restrained material resources.

Our second theoretical proposition and research question dealt with poverty experience as a measure of economic stress. We hypothesised that poor households might spend less time with children due to low levels of time resources being available resulting from competing household needs or increased pressures attributed to income-generating activities. Indeed, what we find seems to indicate that the effect of poverty is much stronger among children with working parents. Mothers have to catch up on household chores over the weekend while possibly delegating child-related duties to other family members including the father or older siblings. Working fathers spend less time with children over the working week when the family experience a single current spell of poverty. Given fathers' traditional gender roles, this could imply him undertaking extra income-generating efforts.

Importantly, we see the distinction between the relationship of transient and persistent poverty. The former, as a temporary material shortage, affects both types of mothers' activities with children but the effects is bigger for leisure, which is likely to be perceived as a luxury good – an activity which parents cannot afford when times are tough. This could also mean that for some families leisure with children requires supplementary money input which reduces parents' willingness to engage in this activity. Meanwhile, persistent poverty is associated with only care activities, which are at the core of parental responsibilities. This might suggest a more fundamental relationship or base line reflecting the long-term influence of depleted material resources on the extent of parental time allocation in care, which is generally consistent with our PTE framework.

We also hypothesised that one of the reasons why parents in poverty might not be spending more time with their children is their emotional and psychological response to economic stress. We find no support for the hypothesis that the stress imposed by poverty moderates the effects of poverty itself on parenting. Based on our data, subjective perceptions of events, measured through parents' concern about providing necessities and satisfaction with the economic situation in the family, are not significant in any of the models. At the same time, what really has an influence on parents' interaction with children is the level of their perceived self-efficacy, self-worth as a professional or an individual. The effect, however, does not vary with the poverty status and is likely to be influenced by their professional trajectories and opportunities in the labour market rather than poverty per se. The effect of self-efficacy, especially strong among fathers, works in the opposite direction between parents. It reduces a father's time with his children. We suggest that this reflects parents' gender roles and attachment to the labour market, and will further test the causality of these links in chapters 6 and 7.

We find the effect of father's labour market productivity to be the opposite to what the time allocation theory would suggest based on the opportunity cost of time. The higher the father's productivity are, the more time children are likely to receive from their fathers. This might support the notion that child-related time allocations do not fit well into the household production model and the enjoyment or utility parents receive from direct interaction with children might be worth more to them than the cost of their time suggests.

At the same time, fathers with higher wages are able to see returns on their education, thus realising the benefits of early development and stimulation. This is supported by our finding on working mothers, who are likely to give a higher value to the interaction with children when they have limited time over the working week. Another explanation of the positive association of a working mother's play time with children over the working week relates to higher demands arising from children's school homework, additional routine activities and child's urgent daily needs, which usually fall over the working week. So, working mothers might want to compensate for their absence by spending

more time with a child when the need is greater and catch up on personal and household needs over the weekend.

Attachment to the labour market also plays a moderating role in the effects of low education on mothers' play as well as care time allocations. On an average day as well as on weekends, children are likely to spend the least time with a mother who has neither a professional degree nor a job.

The possible constraints of low education on parental employment were described by Alekseeva, based on qualitative evidence from rural Russia (Alekseeva, 2010, p. 4). A parent who has only a basic school degree '*has no anchor, he does not know where to go, agrees to any job, spadework, selling things in suburban trains*'. It seems that unstable employment or the outright lack of employment due to low education does affect mother's aspirations for their time with children on many different levels, from self-confidence as a respected individual to the ability to structure a child's life. As our analysis has shown, this could be exacerbated by living in rural locations and, in relation to the father's time, by low priorities being given to children's development. Moreover, the fact that the effects of rural location were observed consistently across both parents and across all models and types of activities reminds us of the importance of this distinction and the many ways in which it influences parents' behaviour, including cultural as well as community-level influences.

Parents' self-confidence and perceived self-efficacy proved to have an influence on their time allocation decisions, being especially prominent for fathers. Nevertheless, we here find clear gender differences. The more successful fathers are, the higher their perceived level of power and the less time they are likely to allocate to both child-related activities. On the other hand, the more respected mothers feel, the more time they devote to leisure activities with children. Although in both cases the self-efficacy is likely to be influenced by their professional lives, for fathers self-ranked power could be directly influenced by career progression, requiring more effort and time.

Our finding on the negative association of a rural location is not surprising given what we already know about the rural–urban time allocation divide. This is traditionally explained by the extent of domestic work burden for the rural population who have additional work on the allotments and other livelihood chores. Our data confirms that rural fathers report time allocated to total household work as 41% higher than urban fathers. Rural women report spending 14% more time on total housework (excluding child-related activities) than urban women.

However, there are also other notable differences which will have an effect. It is, for example, possible that the availability of open spaces and the perceived safety of children in rural locations allows children to play more outside without parents' supervision. Rural parents are also likely to give a higher priority to child's productive activities – such as helping generate a livelihood, looking after younger siblings, etc. – and consider joint leisure as 'wasteful' time.

Our findings on the variations in parental time over the childhood years confirm the common findings of other time use studies: parents' time investments are reduced as the child gets older (Gustafsson & Kjulin, 1994; Loefmark, 2007; Kimmel & Connely, 2007). Our data shows a significant reduction in the age groups 7-10 and 11-14 and corresponding higher investments at early age (0-2) compared to toddlers/pre-school children (3-6). This indicates a continuous decline in parental investment as children get older with a more pronounced reduction in joint time when the child enters the pre-adolescent stage of 10-14. This might reflect a major shift in the parent- child relationship, but also can reflect lower availability of older children for parent-child interactions as children spend longer hours in school and with their peers (Roeters, et al., 2012).

Summary and Conclusions

This chapter examined the disparities in the amount of attention and care Russian children receive from their parents. The research question focused on the role of economic stress measured through the experience of poverty in explaining variations in parental time allocations. We placed the question within our theoretical framework of PTE, test-

ing factors drawn from our sets of *resources* and *demands*, which are postulated to determine the long-term equilibrium.

Our key finding and the answer to our research question is that, irrespective of subjective perceptions of events, the level of parental human investment in children is negatively associated with poverty experience. Specifically, we find that economic stress measured through transitory poverty predicts a lower time input from mothers in play as well as care activities. At the same time, persistent poverty, which reflects depleted material resources, has a negative relationship with the mother's as well as the father's contribution to the care and supervision of children. Its negative effect on mothers' care time is larger than the influence of a low level of education or rural location. The effects of persistent poverty on a father's care contribution are also larger than the effects of rural settlement, labour market productivity or alcoholism. Everything points towards children with parents earning poverty-level wages being relatively more disadvantaged than their more affluent peers in terms of social and human interaction with parents.

The role of employment is a complex one, but without doubt it is a fundamental force which influences parental time allocations both directly – through competing demands on time – and indirectly, through the parents level of self-efficacy, which can be considered a psychological resource of parenting. We find that a mother's participation in the labour market reduces her time availability to children in both activities, which is consistent with our theoretical framework. However, over the working week Russian mothers seem to have double shifts, spending more time with children relative to their non-working peers. This finding appears to support Bianchi's view that '*we may have failed to appreciate how much working mothers do to protect investment in children even as they enter the paid labor force*' (Bianchi, 2000, p. 402). This highlights the difficult choices mothers have to make to reconcile their professional interests and childcare responsibilities.

Overall, we confirm that a combination of *resources* and *demands* explain the disparities in non-material resources available to children in Russia. Leisure activities with children seem to be a litmus test for parents' preferences, ideas and aspirations. Al-

though these are extra activities that can make a big difference in a child's development at home, they are also an 'extra effort' for parents and might need to be given higher priority from a policy perspective. Leisure is clearly more sensitive to changes in resources than childcare responsibilities. Methodologically, our analysis showed the importance of disaggregated analysis of the parental time over the week. Some of our important findings regarding the variation in the inputs of working mothers would be masked by the average measure alone.

The key message of this chapter is that Russian children who lack material resources are unlikely to be compensated for it by extra attention or care from their parents. Poverty experience is an important factor contributing to disparities between children in the level of parental human input. The balance between parents' employment, poverty and childhood experiences is not a straightforward trade-off between money and time for children, as the motivated and professionally active mothers we see in our data seem to demonstrate.

Chapter 5

The Privatisation of Childhood:

Who Plays? Who Cares? And Who is Left Behind?

This chapter discusses parental responsibility in the context of the institutional changes in Russia over the last two decades. Article 64 of the Constitution of the Russian Soviet Federative Socialist Republic (RSFSR) of 1978 stated: ‘Citizens of the RSFSR have the responsibility to care for children, prepare them for socially useful work, and bring them up as worthy members of the socialist society’ (RSFSR, 1978). However, the new Constitution of 1993, which emerged after the collapse of the USSR, completely omits this socially oriented goal of parenting. Instead, article 38 confines the normative call, stating that ‘Care about children, their upbringing – is equally the right and responsibility of parents’ (Kremlin, 1993). This change in language illustrates the top-down, normative shift in what government determines to be the value of children in the society and the corresponding social construct of the parental role. This chapter discusses the move from the socialist value of children as a ‘public good’ – children becoming productive citizens in the future – to children as a ‘private good’, fulfilling individual reproductive goals and inter-generational transfers of wealth.

This chapter argues that the ‘privatisation’ of children to the family level resulted in a market failure of sorts. It followed the rapid withdrawal of the state from child-related services and provision, along with policies to return women to family life (Teplova, 2007; Sätre, 2012). Inevitably under such rapid transformation, some parents failed to respond to their children’s social and developmental needs or failed to provide supervision and cultural and social stimulation to socially desirable levels. This can be called parental underinvestment and is a rare example of a normative and ideological shock

that coincided with drastic macro-economic change. According to our PTE model, this leads to short-term adjustment but also to a new long-term equilibrium.

In the previous chapter, we explained some of the differences between families. This chapter deals with a special case – the reported lack of any time contribution to either childcare or leisure activities with children. It is the extreme position on the left of the time allocation scale marked as ‘zero’ time allocation.

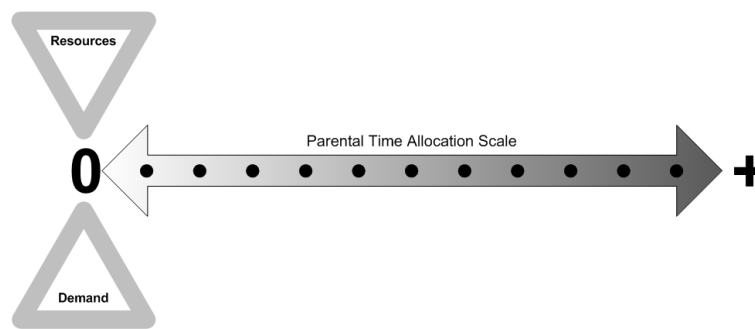


Figure 5.1: The Extreme Case of Non-Participation by Parents

We explore the nature of parental non-involvement in our sample of children in order to provide empirical evidence of the socio-economic factors affecting parental behaviour beyond the expected and well understood age-related progression in gaining independence.

The following research questions guide this analysis:

What is the relative role of poverty experiences in explaining the lack of parental involvement in child-related activities? What groups of children are likely to be at risk of joint parental withdrawal from care and leisure?

Broadly speaking, we are interested in whether the extreme cases of ‘zero’ time on the parental time allocation scale are the result of an equilibrium chosen by parents (no matter how undesirable it is from the child’s or societal perspective) or rather the result of the shifted balance due to a shock to their material resources, measured through transient poverty. The model allows for both scenarios, and each case would require a different policy response. Our assumption is that if we observe the greater influence of factors representing *resources*, especially the effects of transitory poverty, it would give us

grounds to claim that the zero time allocation is the result of lost equilibrium: parents are not involved but it is not their ideal or desired allocation. If, however, we observe the effects to be bigger on the *demand* side of the model, which is generally fixed or more rigid in the short run, then it is likely to be a chosen equilibrium between *resources* and *demands*. Through the discussion of the welfare discourse and the current childcare modalities outside the family, we highlight some of the challenges faced by Russian parents today in fulfilling their parental responsibility.

This chapter is structured as follows: firstly, we discuss the shifting role of the family in the context of the welfare transformation in Russia over the last two decades. A special focus is placed on the change in the provisions for children's services with the 'privatisation' of responsibility to the family level. Secondly, we underline our theoretical hypothesis as to the reasons for parental withdrawal from child-related activities. We then present key measurements and describe the nature of the data. After presenting and discussing the results of our multinomial analysis, we close with concluding remarks in answer to our research question and highlight our key message.

5.1 The Context of Parental Human Investments in Russia

Welfare Discourse and the Value of Children

Becker notes that '*Each person is assumed to live for 'two generations': he is a child during the first generation, when his parents invest time and other resources in his adult productivity; he is an adult during the second generation, when he produces income, consumes and invests in his own children*' (Becker, 1981, enlarged 1991, p. 180). Arguably, the child investment decisions which Russian parents and families make today are rooted in the institutional transition from the old social welfare contract of the Soviet Union to the new liberal agenda of the early and late 1990s.

Today's generation of Russian parents aged 30 or slightly over, which form the core of parents in our sample, were born at the end of the old Soviet welfare system. From an early age they benefited from its generous child welfare provisions and guided social

upbringing. But their growing up and maturity coincided with one of the most challenging and economically depressed times in Russian history, when the great majority of their own parents struggled to pay their bills and provide necessities (Treisman & Shleifer, 2005). Therefore, the emergence of new modernistic perceptions of today's Russian parents, which are described as highly involved and child focused (Kukulin, 2010), are often at odds with their high expectations from the welfare state. As noted by Sveshnikova (2010), the conflict between 'the state owes us' and the claim 'no one helps us' leads to the rejection and criticism of the current system of education and childcare. We argue that the underlying factor that created this normative conflict is the shifting of responsibility for child-related welfare from the state to families and individuals, which happened without prior assessment of the range of human and material resources of the families to take up this role and without the provisions being in place to support the most vulnerable children.

The paternalistic policies of the Soviet state dominated the social policy agenda over 70 years of planned economy and single party rule. The public cost of bringing up future generations of productive workers was high, but this was part of an overall social and economic policy agenda. Family policy was engineered to promote full employment with a special focus on women's participation in the labour market (Teplova, 2007). Women's employment rates were higher than anywhere in the world and part-time unemployment was less than 1% (Lokshin, 2004). To enable such high rates of labour market participation and to promote the value of socially beneficial collective education, the state provided a highly regulated but also highly accessible substitution for parental care: free childcare places available from as early as three months, provision of childcare directly at or close to the work premises (by state enterprises), and minimal charges at the point of entry. This ensured continuity in normative and ideological upbringing under the state's close supervision. At the same time, extended maternity and paid childcare leave and family allowances were allowed so as to support traditional gender roles with an emphasis on women as the main carer, while reinforcing men's position as a breadwinner (Teplova, 2007).

The educational system of that time was characterised as highly deductive – based on clear learning of rules (Taratukhina, et al., 2006) – but there was also a wide provision of fully subsidised activities outside the school curriculum, including sport, art, and educational clubs located in specially developed Centres of Culture. An extensive network of summer camps was also a mechanism to provide holiday cover for working parents. In the late 1950s, in the Moscow region alone there were more than 500 permanent summer camps located in picturesque areas and targeted at children aged seven to 15. They received around 300,000 children each summer (Pushkina & Burakov, 2007). Their work was built on the principles of accessibility (in the majority of cases free or for a very nominal fee), high coverage of children based on volunteer involvement in interest groups, and development of their creativity and abilities through socially relevant activities. As a rule, all Soviet educational institutions were based on the theoretical works of well-known Soviet educators and psychologists, who recommended the use of group care as a vehicle for ‘character education’ (Glanzer, 2005). Similar universal provision was established in health care. Vaccinations and dental check-ups carried out in schools and nurseries were part of the integrated school-health policies. The state also regulated, provided, and closely monitored the delivery of nutritiously balanced meals at schools and childcare institutions.

The state played a key role in structuring and providing opportunities for developing a child’s abilities and talents within the formal and informal sector. But the state did it in a very uniform and universal way, a way which aimed at promoting socially coherent and ideologically uniform young generations of activists and a productive labour force. The state took control over the function of education and upbringing, displacing the family: *‘Parents were considered helpers of the educators rather than equal partners in children’s education’* (Taratukhina, et al., 2006). By valuing children as a ‘public good’ and investing in child welfare, the state expected high social returns in the future. This ideological and social rationale for state support inevitably raised families’ expectations and reliance on the state in many issues of child development, including behaviour, education, socialisation, etc.

During the economic transformation of the 1990s, the Russian economy experienced little growth but extremely high levels of economic uncertainty. Inflation skyrocketed to 875% in consumer prices in 1993 and remained extremely high throughout most of the decade. Real GDP declined by nearly 30% in the last quarter of 1998 (FSSS, 2011), which many economists compared in scale to the Great Depression in the US. The transition to the market economy was associated with major adjustments in public expenditure levels not only in Russia but in all Central and East European Countries and so-called Newly Independent States. The combined effects of recession and the fall in tax revenues due to the collapsed planned economic system led to large negative shocks to public finances (Klugman, et al., 2002). Consumer subsidies were drastically reduced while government expenditure also fell by 3% of GDP between 1992 and 1996. The state's partial withdrawal from child-related services and provisions became apparent as public expenditures on education fell from 1.3% of GDP in 1992 to 0.5% in 1996 (Lopez-Carlos & Alexashenko, 1998). The number of childcare and pre-school institutions (nurseries and kindergartens) dropped from 87,600 in 1991 to 50,000 in 2001 and eventually to 46,000 in 2005 (Ministry of Education and Science, RF, 2009). While the demographic decline from 1988 till 2000 can partially explain this trend, the negative dynamic was still observable in official statistics years later: the number of children enrolled in pre-school institutions declined from 63% in 1991 to 57.2% in 2004. In rural locations, the decline was even bigger: from 56.1% in 1990 to 37.9% in 2001 (FSSS, 2011).

Families were left with the rising cost of child rearing, uncertainty about the direction of the state, and a vague normative framework on child rearing and their parental responsibilities. The emerging political agenda of returning working mothers to the family (Teplova, 2007), manifested itself in new provisions such as the introduction of three-year paid parental leave. Provisions through tax credits and other benefits replaced direct and coordinated state provision (Teplova, 2007; Maleva & Sinyavskaya, 2007). Parents had to accept the changed value of children as a 'private good' and take full responsibility for their human development, including their socialisation, psychological well-being, health, and education.

For some, the best strategy to cope with the economic stress of those years was to postpone childbearing and to limit the number of children in the household. A decline of 36% in the birth rates during the period 1989–1993 supports this theory (Kotz & Weir, 2007). Overall, the increased financial stress affecting families along with a stagnating labour market changed families' motivations, capacity, and opportunities for rearing children and realising their human potential. One can argue that families could not maintain the 'quantity' of children in the family without compromising their 'quality'. Along with demographic choices, this is likely to force a longer-term adjustment between existing resources and demands for child-related time allocations leading to a new equilibrium.

The Russian economy resumed its growth in 2002. The actual growth rate doubled from 2002 to 2005, reaching 6.4% in 2005 and 8.1% in 2007. As the country has experienced continued economic expansion and a better integration in the global market, many better educated Russian parents realised that the race for jobs in a highly competitive labour market starts rather early in life. Faced with a wider choice in pre-school and education provision and better information on future returns to education, they formed their choices and proactive investment strategies to ensure the preparation for the future for their children. Relative economic stability and job security also enabled families to widen their financial planning horizon from a few months to a few years. More and more Russian families today are willing to invest in their children (through both monetary as well as human resources) in order to see their human potential realised. However, a wider choice in pre-school education in a deregulated market and higher motivation on the part of some parents to invest in their children does not imply equal chances for all children. As we have seen in the previous chapter, those with low material resources are also likely to receive low parental human input in the family. Unless compensated by the quality of formal care and sufficient stimulation from an extended family network, the gap between these groups of children is doomed to widen as they progress up the educational ladder.

Our RLMS data indicates that most children in the early years of childhood receive care within the close family circle, with 98% of single children aged 0–2 receiving time inputs from any of the family members (Table 5:3) and 78% of all children of this age also receiving some care input from relatives residing outside the household in the observed period. Table 5.1 shows the share of children by age group receiving care and education through relatives residing outside the household unit,¹⁶ informal care arrangements,¹⁷ and formal institutions¹⁸ such as nurseries and kindergartens. We see from this table that only during the pre-school years do the family ‘step back’ and allow formal institutions to take charge: the enrolment of children aged 3–6 in pre-school kindergartens reaches 86% on average in the observed period and the contribution of relatives declines to 46%. Extended family support bounces back for school-aged children to 71% for 7–10 year olds and to 74% for 11–14 year olds. The share of children receiving informal care (friends and other non-relative arrangements) is very small: only 6–11% of children across age groups use it, but the time input for those who do is on average relatively high.

Table 5.1: Different Types of Care Received by Children Outside the Family

Age Group	Relatives Outside			Informal Care			Formal Care		
	Observed	Days per week	Time per day	Observed	Days per week	Time per day	Observed	Days per week	Time per day
0-2 (Baby)	79%	3.12	6.57	11%	2.98	4.97	37%	4.62	7.96
3-6 (Kindergarten)	46%	2.99	8.20	9%	3.94	7.67	86%	4.78	8.48
7-10 (Primary School)	71%	3.26	8.01	8%	4.27	6.73	41%	4.63	4.65
11+ (Secondary School)	74%	3.66	8.10	6%	4.42	12.88	19%	5.23	7.29

Direct comparisons with other countries are difficult due to methodological differences in age groups. Nevertheless, as an indication of the trend, according to the OECD only

¹⁶ Relatives’ care: average hours of care on a typical day in the last seven days when care was provided to a child by relatives who reside outside of the household (only observed).

¹⁷ Informal care arrangements: average hours on a typical day when the child received childcare provided by non-relatives in the last seven days (excludes zeros). This variable is expected to reflect the use of childminders, nannies, friends, etc. Although it is not a commonly exercised childcare strategy in Russia, small private providers are slowly increasing in popularity and this might be captured by this variable.

¹⁸ Formal child care: average hours on a typical day of child’s attendance of kindergarten, nursery, after-school group or something similar. The inclusion of after-school clubs in the questionnaire allows us to observe formal care across all age groups. For older children, this could be after-school facilities which are usually provided at the school grounds by the school itself or a private provider. The variable reports only observed time (excludes zeros).

20% of children aged 0–1 and 30% of children aged 1–3 in the UK attend nurseries. In contrast, in Norway, where parental fees are capped at 20% of the full cost, about 48% of children aged 1–3 have access to formal care (OECD, 2006). It appears that the enrolment of 37% of Russian children aged 0–2 in formal care is therefore somewhere in between liberal welfare regimes and socio-democratic welfare states. This might be reflective of the retrenchment trends in the public system of pre-school provision, along with the still relatively wide network of public facilities.

The pattern changes dramatically in the next age group of 3–6 year olds. At this stage, the reliance on formal care is much greater, covering 86% of children of the relevant age compared to 37% of children aged 0–2. This is the period when mothers resume their participation in the labour market: the share of working mothers in our sample for this age group is 69% compared to 21% of working mothers with children aged 0–2. Therefore external help is well justified. Notably, our data show that children attend nurseries on a full-time basis. This is primarily explained by the inflexibility of formal childcare provisions in Russia, which for cost-efficiency reasons usually do not offer part-time enrolment.¹⁹

There is no statutory requirement for pre-school education in Russia (school starts at age 6–7). The high participation rate therefore points towards a strong preference within families for a child's socialisation and school preparation to be implemented outside the family. The fact that almost a quarter (23%) of children attending kindergarten at this age have a 'stay at home' mother suggests that this childcare choice is driven, at least in part, by high expectations in regard to formal care providing for educational and social stimulation.

After its peak at pre-school age, formal care continues to be an important complementary form of care. At the age of 11–14 almost one in five children still attend after-school facilities, which are usually located at the same school. It seems most likely that these are children with parents who actively participate in the labour market and who do

¹⁹ Private care facilities are usually more sensitive to family's needs in childcare by offering flexible enrolment, but their share in the total provision remains very small (around 3%).

not have relatives to help on a daily basis. Overall, our data shows that while reliance on help from extended family is prominent in Russian families, the majority of parents still expect the formal system to provide a significant amount of childcare. However, with the high relatively cost of nursery and pre-school facilities along with a deficit of subsidised places (discussed in Chapter 6), children with a high risk of poverty are at a disadvantage (Seliverstova, 2005). Facing enormous uncertainty in the job market and high income volatility, these households are under tremendous pressure to find means to cover children's pre-school, health, and extracurricular expenses, which just a decade ago were nominally free at the point of entry.

Overall, increasing income inequalities translate into a differential ability to provide good care for children, exacerbated by the collapse of universal state provision. The old Soviet system of social welfare generally smoothed income inequalities as well as human investment choices by universalisation of services while limiting the range of choices. The new default contract between the state and the family allows for 'market failures' – i.e. children being left without parental supervision, without social stimulation or sufficient opportunities for learning and development. Parents disadvantaged by factors such as low education, remoteness of location, weaknesses of their local labour market, or occupational segregations of women in low paid jobs are faced with a constrained choice (Klimova, 2012). 'Underinvestment' compared to socially desired levels among the group of economically disadvantaged families became an important social issue in the early 2000s, when the problem of 'children of the streets' and 'social orphans' could no longer be ignored.

Socially Responsible Parenting

Socially responsible parenting has recently become one of the most discussed social issues among family policy experts and international and local NGO communities in Russia. It came into the political and social spotlight with the problem of social orphans. According to the official definition, social orphans are children whose biological parents are alive but who were denied parental rights through legal procedures due to irresponsible behaviour or other serious mistreatment of their children. The number of newly

registered children orphans grew 2.7 times from 1996 to 2006, the total number of these children 1.5 times and their share in the total children's population of Russia 2.5 times (FSC, 2010). However, in 2007–2008 the proportion of all children orphans in Russia was estimated at 2.7% of the total population, while in other industrialised countries these figures are much lower, at around 0.5% (Great Britain) or 0.89% (Germany) (FSC, 2010). In 2009, 86.7 % of all orphans in Russia were social orphans. According to the Moscow Humanitarian University (Kovaleva, 2009), in Moscow alone 26,800 families were registered in centres of social support as those at risk of not fulfilling their parental responsibility.

There are various explanations for parents' failure to fulfil their parental responsibility for child development. For example, children living in single-parent households are likely to have very limited contact with their father. According to a sociological study by the Russian Academy of Science (FSC, 2009), a mere 20.9% of fathers who left the family after divorce or separation said that they see their child more than once a week, more than 44.4% meet with their child not more than two or three times per month and 16.7% completely stop seeing their child. Research also indicated that the older the child, the less likely it is that he or she will see his/her biological father after a family separation.

While the analysis of this chapter is careful not to equate the examined problem with child neglect, it looks at the unexplained phenomenon of parents not spending any time in leisure with and care for their children. We attempt to understand its nature and driving forces using a nationally representative sample. We argue that responsible parenting has to be discussed in the wider context of parental responsibility and involvement in the life of children on a daily basis to reduce the risks of 'underinvestment' in child welfare.

5.2 Analytical Framework and Hypotheses

Our PTE model allows for parental time input to vary along the parent's time allocation scale from a minimum input to a hypothetical 24 hours being devoted to child-related

activities. The furthest left point on the scale is where the quantity of parents' time input is zero. Such situations, as much as they seem improbable, are real reported cases of parental non-involvement within a specified 30-day period in our data. As presented in Chapter 3, the RLMS questionnaire includes a question that asks whether the interviewee has played or cared for the children in the household in the preceding 30 days. Where these questions have been answered with 'No' we consider those to be true zeros, i.e. an observed reported value rather than missing data. A month is a sufficient term to account for some possible fluctuations in care and interactions with children so the results should not be dependent on the timing of the interview. We test the following proposition of the model:

Proposition 3: The lack of parental involvement in care and leisure activity with children (zero time allocations on parental time allocation scale) is the result of a failure in resources.

Our theoretical model suggests the following cases when such non-allocation can happen:

Failure on the side of resources:

Time availability hypothesis: Time is a scarce resource. While some child-related activities can be performed as a secondary activity, the general assumption is that formal employment cannot be combined with child-related leisure or supervision. Thus, parents' participation in the labour market can significantly reduce the time available for children. With additional competing family and personal needs such as extra sleep, parents can, theoretically, have no time left for spending with/caring for their children. Increased material pressures (such as those attributable to the experience of poverty) might either cause such additional demands for time or exacerbate an already present time shortage. In extreme cases, parents can work in a different location and can be largely (temporarily) unavailable to spend time with children. While this appears to be an intuitively sensible explanation for fathers' non-participation in child-related activi-

ties, however, the hypothesis of a structural lack of time is not particularly good at accounting for families where both parents do not provide time.

Direct substitution hypothesis. Family members and extended family often take the responsibility for a child's care and leisure. The support of a family's social network could be called upon when parents are faced with low time availability as well as independently upon mutual agreement. At least theoretically, this could be associated with full parental withdrawal from corresponding activities. However, as some studies have shown, lack of social support and resulting isolation of parents can also trigger parental neglect or withdrawal (Erickson & Egeland, 2001).

Moreover, according to time allocation theory, parents who face a high opportunity cost of childcare (higher educated, higher income parents) would have an incentive to substitute their time by purchasing childcare services on the market. In the most extreme cases, a child can be under the full supervision of formal care, tutors and nannies. Low-income parents with low opportunity costs of time should, according to this theory, choose to take care of their children by themselves or rely on their social network. Nevertheless, such a perspective does not fully account for the interaction of low wages and time availability: low-income parents can work the same hours in the formal market but spend much more time in home production or on informal (income-generating) activities. So, the final effect on parental non-participation among this group is ambiguous.

Failures on the demand side:

Child effect hypothesis. Supporting a child's independence is an important parental goal. It is sensible to expect that parental involvement and interaction with a child is gradually reduced as a child's age increases. On the one hand, there is a direct effect of reduced demand for supervision and leisure interaction as children get older. On the other hand, parents' aspirations and ideas evolve with a child. The social interaction model offered within child neglect studies (Tzeng, et al., 1991) indicates that the characteristics and roles of children can produce stresses for parents. This fits appropriately within our equilibrium framework. They also create situations in which parents have to re-

spond immediately (including abusive behaviour) or that cause parents to ignore their children, creating neglect. For example, an adolescent child could be going through a difficult period which, depending on other circumstances in the family, can lead to parents' withdrawal in response to the child's behaviour.

Structural failure hypothesis. The 'market failure' could be caused by parents simply not realising that their role and potential contribution to child development has to change due to diminished public investments. Social interaction theory (Tzeng, et al., 1991), as mentioned earlier, also underlines the role of the social and cultural characteristics of each community in shaping parental beliefs and certain fundamental parental skills. During the transition to a market economy, many jobs in economically deprived areas of Russia disappeared, no longer supported by central planning. Rural locations often found themselves in an information vacuum (Kalganov, 1999), which was created by a combination of inactivity in the labour market and territorial isolation. The lack of information channels allowed the preservation of traditional forms of upbringing (Polezhaeva, 2004), such as the focus on productive activities and natural roaming of a child outdoors. This can at least partially explain parents' failure to get involved.

Individual failure hypothesis. There is certainly a possibility that some individual personal characteristics of parents can explain the lack of attachment to a child, or some other mental problems that mean the parent is unable to get involved. These are not possible to test based on our data and model. We can, however, test the effects of reported heavy drinking by either parent. Heavy drinking is a serious social problem in Russian society dating back to the post-war Soviet Union (Nemtsov, 2011). Experts in Russia generally agree that heavy drinking or simply alcoholism is associated with some dysfunction in the family. Life in the family is directly affected: the father depends on it psychologically and physically and the mother depends on the father (Gogoleva, 2003). So, even if one of the parents (most likely to be the father) suffers from this problem, this could have in particular acute consequences in terms of a lack of attention from both parents. Despite some possible underreporting in the drinking data (related to stigma), it can still reflect some true variations in the level of alcohol consumption

among parents. This enables us to test the reason perhaps most commonly mentioned as a cause of social orphans in Russia (UNICEF, 2007).

5.3 Data and Measurements

The exploratory and multivariate analysis of this chapter is based on a pooled RLMS sample of children aged 0–14 living in full families (families with both mother and father) over the years 2007 to 2009. We conduct a multivariate analysis on the risks of full or partial (one parent) non-involvement in child-related activities relative to participation by both parents. We examine non-participation in play and care in full families through a multinomial logistic model, in which the risk of being in one category is relative to the reference category. Three regression equations for each type of activity are generated in order to predict the risk of being in one of the three categories relative to the omitted category (both parents participating) due to factors described below while holding everything else constant.

We additionally provide estimates of the Logit model for children living with single mothers in the Appendix to this chapter.²⁰

Dependent Variables in a Multivariate Analysis

The focus of our investigation is on the extreme case where parents report that they did not spend any time with their children. We will call this case parental non-involvement or non-participation. Our analysis is based on the time use section of the RLMS questionnaire in rounds 16 to 18 (2007–2009) in which adults are asked if in the last 30 days they did the following: a) ‘Played, occupied, spent your leisure time with children or grandchildren who live with you’ and b) ‘Looked after children or grandchildren who live with you – bathed them, fed them, took them to lessons’. We use the recorded response (yes/no) from both parents to construct two categorical variables for play and care interaction with four separate categories:

- Children with neither of the parents participating (‘None’)

²⁰ The sample of children living only with a father is too small to analyse on its own.

- Children with the father not participating and the mother participating ('Father not')
- Children with the mother not participating and the father participating ('Mother not')
- Children who have both parents participating ('Both'). This is used as the reference category.

It is important to distinguish between parental non-participation as a strategy/decision and non-participation due to the fact that one of the parents is not present in the household. The lack of a father in the family is one of the major structural reasons for his non-involvement in childcare and play activities with children. The high number of cases of children without a father in our sample also presents some methodological difficulties. For example, it seems important to include the father's characteristics into the full model but this is problematic for those children who are missing a father since this will be recorded as a missing value. To overcome these methodological difficulties, to make the analysis more transparent, and to account for behavioural differences between parents in different family compositions, we conduct our analysis by family type: in full families and separately for children with single mothers since they represent the majority among single parents.

Explanatory Variables

The key descriptive information on dependent variables not presented in the previous chapter is summarised in Table 5.2:

Table 5.2: Control Variables

Variable	Mean	SD	N
Any illness in the last 30 days	0.37	0.48	6262
Mother's bad health	0.03	0.18	5998
Hours of external care per day	7.68	7.15	1422

Mother's bad health is a dummy variable on self-reported state of health: 1 is assigned to those who evaluated their health as 'bad', which is the worst out of four possible answers. Absent parents are considered to be in good health.

We test the time availability hypothesis by using

- Parents' work status;
- Low education as a proxy of labour market productivity; and
- The experience of economic stress (poverty experience).

Using the typology of poverty described in the previous chapter (Walker, R. with Ashworth, K., 1994), we construct three alternative measures of poverty based on a child's poverty status over the years. This is different from Chapter 4 where we used one variable with a number of different categories. The choice of alternative independent variables is justified by the use of multinomial regression, which uses one model as reference (in our case 'Both parents participate'). In this case, interpretation with multiple reference categories become unnecessarily cumbersome. As in the previous chapter, we include data from 2006 and 2010 to account for a more differentiated poverty history in the model. This enables us to record more than two years of occasional poverty or more than three years of persistent poverty. The measures listed below are used in alternative models interchangeably. We report only the model with the best fit.

Transient poverty is a dummy variable with 1 assigned to having a household income below the all-Russia absolute poverty line at any single point in time.

Recurrent poverty is a dummy variable with 1 assigned to having a household income below the all-Russia absolute poverty line more than once but lasting no more than one year.

Persistent poverty is a dummy variable with 1 assigned to having a household income below the all-Russia absolute poverty line lasting two or more consecutive years.

We test the *direct substitution hypothesis* through

- The presence of grandparents and elder siblings in the household;
- The total hours of external care; and

- The cost of childcare in the locality.

The total hours of external care per day (formal, informal and relative care) is a constructed continuous variable which we include in the ‘child characteristics’ section since it is estimated based on the data on the individual child.

The measure of local cost of childcare reports the consumer price of childcare in the locality after applying subsidies, etc. It is included here as a control as the cost involved affects parents’ willingness to buy direct substitution for their own time on the market.

The *child effects hypothesis* is tested through child’s characteristics, such as

- Age;
- Gender;
- Being a single child; and
- Any illness in the last 30 days.

Child’s illness in the last 30 days is a dummy variable, which assigns 1 to a child who has experienced health problems during this period. The question in the questionnaire does not specify the type of health problems, but it is clearly not a chronic health condition since the respondents are asked about those separately.

The *structural failure hypothesis* is tested through

- The type of settlement – a dummy variable with 1 assigned to rural location; and
- Self-reported inability to pay for additional classes.

The latter is a variable which captures material hardship coupled with the priority given to child development in general and outside the home. So, in a way it is a proxy for parents’ priority/aspirations under some perceived level of material difficulty.

The *individual failure hypothesis* is tested through self-reported heavy alcohol consumption.²¹

²¹ Please see the description of the variable and how it is constructed in Chapter 4.

Controls

We also control for mother's age at birth, mother's bad health, and living space per head.

5.4 Descriptive Analysis

Family Care

In Chapter 4 we noted that childcare is a 'family business'. Therefore, it is important to account for the participation of all family members. Table 5.3 shows the total time contributed by all adult household members to child-related activities, i.e. both play and care combined.²² We see the gradual increase with age in the number of children who are left without any reported time input in the family.

Table 5.3: Participation and Average Time Per Day by Child's Age and Number of Siblings

Number of children Age Group	Single Child		Two Children		Three or More	
	Observed	Time	Observed	Time	Observed	Time
0-2 (Baby)	98%	10.70	99%	9.71	99%	9.92
3-6 (Kindergarden)	98%	6.72	98%	7.22	97%	6.66
7-10 (Primary School)	94%	4.87	96%	6.18	96%	6.07
11+ (Secondary School)	79%	3.55	91%	5.20	87%	7.00

Practically all children from our sample aged 0–2 receive care in the family. As children progress to the next stage in life (age 3–6), we see that the share of children in this group with no reported participation from any members of the family increased to 3% in big families. With the onset of schooling the reported family involvement drops by 4% for single children and 2% for children with one sibling but only 1% for children in bigger families. Even assuming that 6% of primary school children with no siblings are

²² Family care: total hours of care and leisure provided by all adults residing in the household to all corresponding children in the family on a typical day. This is not a 24-hour recording but rather a cumulative measure of all reported time per individual child so it needs to be treated with care. We tracked the relationships of all family members to a corresponding child using the "family relationships" part of the family questionnaire. Data on individual time use was then merged with the child-level data using individual identifiers and combined in a single variable.

quite mature and independent for their age, no attention or supervision being reported in regard to them for a one-month period in the family is puzzling.

Finally, 21% of 11–14 year olds in our sample have no adult in the family who reports spending any time with them. The share is smaller for children who have younger brothers or sisters. The presence of younger siblings might secure more time availability of parents in bigger families. Yet it is quite notable that one in five children of this age receives zero reported time with any member of the household. Further investigation reveals that 7% of those receive informal care, 14% formal care and 4% care from relatives not residing in the household. This suggests that some of these children are not neglected but that their family does not have the human or time resources to provide them with attention and supervision at home. On the other hand, there is still at least 15% of the overall sample of 11–14 year olds who do not receive *any* reported form of care inside or outside the family.

Children with Non-Involved Parents

Parents or guardians have the primary responsibility to provide care and attention to children. From the total human input received in the family, we move to the decisions and actions of parents. Table 5.4 shows the share of and number of children with reported parental non-participation for the full sample of children (year 2007). It indicates that there are more children whose parents do not engage in care than play: a quarter of all children in the full sample for that year (25.5%) did not receive any care input from either parent. In contrast, only around one in six children (14.3%) entirely miss out on interaction with parents through leisure activities. Even more strikingly, the data shows that almost 12% of children have neither of the residing parents engaged either in lei-

Table 5.4. Frequencies of Parental Non-Participation in Play and Care Activities

Participation	Leisure with children		Care for children		Neither activity	
	Number	%	Number	%	Number	%
None	296	14.3	528	25.5	245	11.8
Father not participating	461	22.2	830	40	331	0.16
Mother not participating	122	5.9	64	3.1	37	0.018
Both	1193	57.6	650	31.4		

sure or care. It is also apparent from the table that more children miss out on time with a father than with the mother. For example, 40% of children have fathers who do not participate in care while the mother does (including those who live in a single-mother household). However, only 3.1% of children have mothers who does not provide care when the father does. There are clear preferences among fathers for interaction through leisure: twice as many children have fathers withdrawn from care than in leisure.

We further investigate the structure of these sub-groups in terms of child's age and the presence of the parent in the household. This is done to rule out the structural reasons for non-participation – i.e. the absence of a parent in the household.

A relatively high number of children in our sample – 4% of 7–10 year olds and 5.2% of 11–14 year olds – have neither a mother nor a father present in the household (based on the sample for 2007). For comparison, the highest rate among OECD countries belongs to the US, with 3.5% of children aged 0–18 having no residing parents in the household. In the UK, it is only 1.4% (OECD, 2011a). The number of children living with their fa-

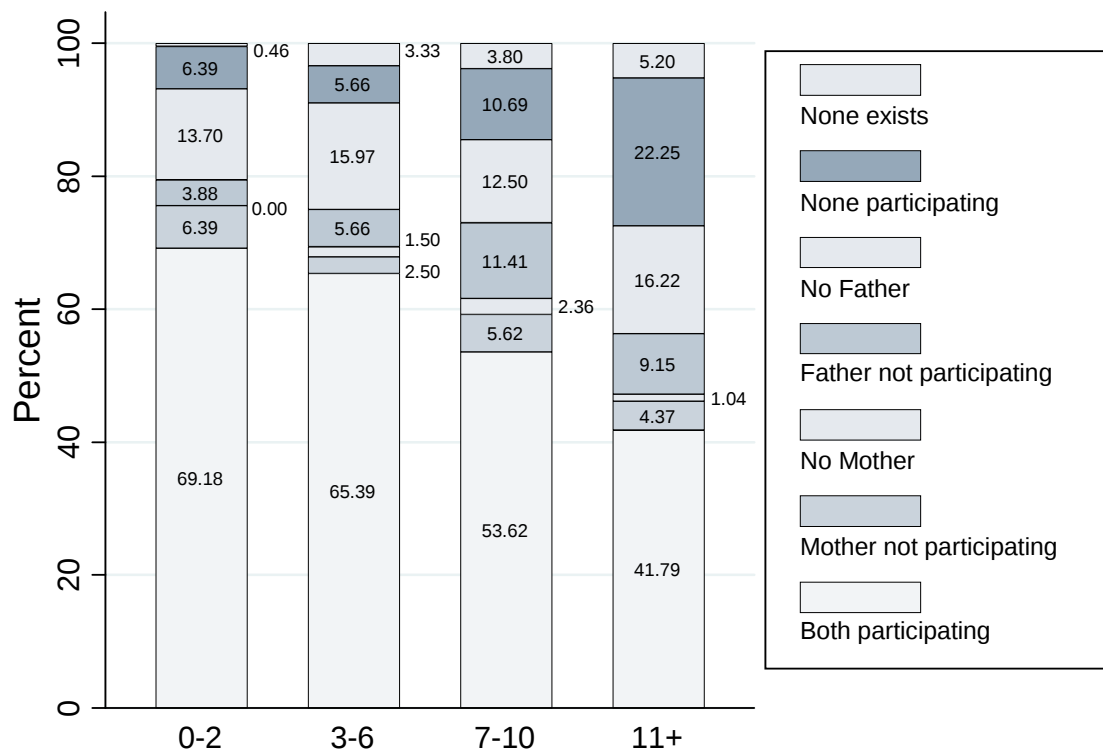


Figure 5.2: Parental Participation in Leisure with Children based on Child's Age and the Presence of Parents in the Household (2007)

ther but without a mother present is negligible: 0% for children aged 0-2 and 2.4% for 7–10 year olds. The share of children without a father in the household, in contrast, is five times higher and relatively stable across age groups, ranging from 12% for children aged 7–10 to 15% for toddlers/pre-school children and 11–14 year olds. Overall, one in six children in the surveyed households grows up without a father.

Figure 5.2 depicts the participation of parents in leisure activities depending on their presence in the household.

As could be expected, parental involvement in joint leisure almost steadily declines with the increasing age of the child. The onset of schooling is a possible reason for a noticeable drop in parents' participation at age 7–10. As we get to 11–14 years, we see that three times more children in this group have parents who are not involved than we saw with toddlers/pre-school children and babies (22.3% compared to 5.6% and 6.39 respectively). The growing independence of children in this group and their possible free

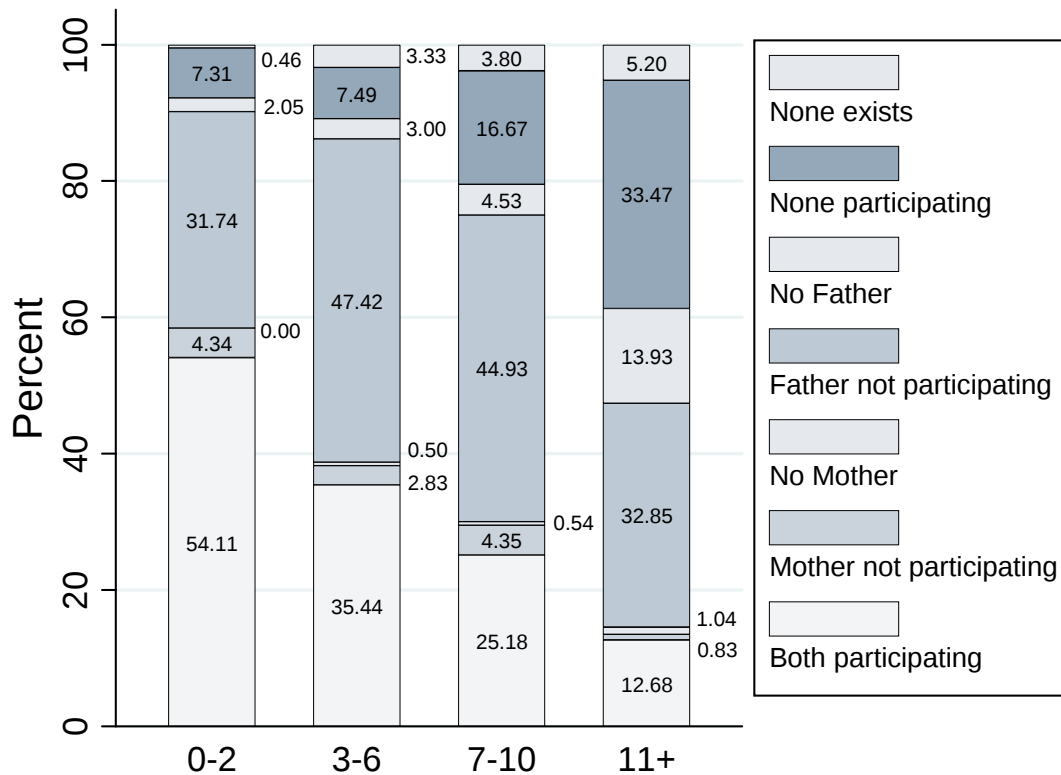


Figure 5.3: Parental Participation in Care based on Child's Age and the Presence of Parents in the Household (2007)

choice of leisure activities can to some degree account for these numbers. However, the fact that there remain over 41% of children in the same age group who have both parents involved indicates that age alone does not explain all the reasons for parental non-involvement.

The trend of declining parental participation with age in care (Figure 5.3) is similar to the one in play activities.

The most dramatic withdrawal by both parents happens at age 11–14. The share of children in the latter group without participating parents reaches 33%, while a roughly equal share of children (33%) have only the mother participating and just 13% have reported participation by both parents. What draws the attention here is that the rate of children missing the father's contribution in care is relatively consistent across age groups. Around half of pre-school children (47%) and primary school children (45%) do not receive any care time contribution from their father. A similar share of children in the early-adolescent 11-14 age group (46.5%) misses out on the father's participation in care if we include the share of children without a father in the household.

Overall, we see that the largest group of children without parental involvement in either care or leisure is children of pre-adolescent age. Once again, we stress that the variation between and within groups raise a lot of questions concerning why some children have involved parents while others of the same age have parents who choose to withdraw.

5.5 Empirical Results

We test the five hypotheses discussed in the theory section of this chapter, each representing a failure on either the *resource* or *demand* side. Table 5.5 presents the likelihood of parental non-participation in play and care for children living in full co-habiting families.

Table 5.5: Multinomial Regression of Children Living in Full or Cohabiting Families

Variables	Play			Care		
	None	Not Father	Not Mother	None	Not Father	Not Mother
Child Characteristics						
Age, Ref: 3-6 (toddlers)						
0-2 (babies)	0.920 (0.141)	0.688 (0.168)	1.772* (0.450)	0.764 (0.114)	0.532*** (0.0637)	1.829* (0.437)
7-9 (primary school)	1.001 (0.143)	2.088*** (0.395)	1.648* (0.398)	1.774*** (0.237)	1.601*** (0.181)	1.530 (0.394)
10-14 (secondary school)	2.230*** (0.332)	2.222*** (0.520)	2.179** (0.593)	4.614*** (0.741)	2.285*** (0.345)	1.513 (0.458)
Gender	1.088 (0.104)	1.600*** (0.221)	0.887 (0.144)	1.224* (0.116)	1.123 (0.0994)	0.847 (0.165)
Single Child	1.474*** (0.165)	1.255 (0.229)	1.256 (0.274)	1.819*** (0.211)	1.271* (0.149)	0.910 (0.217)
Any illness in the last 30 days	0.937 (0.0957)	1.091 (0.142)	1.041 (0.187)	0.838 (0.0811)	-0.00008 (0.0814)	0.958 (0.225)
Parent's characteristics						
Mother's age at birth	1.045*** (0.0112)	0.988 (0.0215)	1.001 (0.0209)	1.029* (0.0127)	0.995 (0.0123)	1.014 (0.0233)
Mother with low education	1.222 (0.172)	1.262 (0.260)	1.332 (0.325)	0.928 (0.136)	0.821 (0.126)	1.110 (0.371)
Mother's work status	1.294 (0.173)	1.087 (0.193)	1.379 (0.286)	1.826*** (0.232)	1.169 (0.129)	2.635*** (0.750)
Mother's bad health	1.468 (0.347)	0.611 (0.221)	1.439 (0.677)	1.445 (0.367)	1.386 (0.414)	0.743 (0.538)
Mother's heavy drinking	0.808 (0.135)	1.198 (0.255)	1.669 (0.450)	1.074 (0.172)	1.304 (0.188)	0.409* (0.183)
Father with low education	1.157 (0.171)	1.151 (0.243)	0.924 (0.242)	0.913 (0.143)	1.102 (0.155)	0.737 (0.274)
Father's work status	0.905 (0.174)	0.808 (0.194)	0.983 (0.281)	1.026 (0.192)	1.138 (0.202)	1.345 (0.613)
Father's heavy drinking	1.215 (0.153)	1.666** (0.274)	0.815 (0.181)	1.360** (0.160)	1.251* (0.134)	0.930 (0.264)
Persistent poverty	1.162 (0.299)	0.689 (0.250)	0.748 (0.324)	1.085 (0.287)		3.124* (1.452)
Can't pay for classes	1.677*** (0.242)	2.182*** (0.423)	1.611 (0.400)	1.624** (0.261)	1.356* (0.202)	1.320 (0.555)
Household characteristics						
Grandparent in the household	0.920 (0.133)	1.097 (0.229)	1.037 (0.245)	0.941 (0.138)	1.213 (0.163)	1.037 (0.326)
Older sibling in the household	1.085 (0.207)	2.472** (0.694)	2.516** (0.712)	1.361 (0.274)	1.389 (0.284)	1.037 (0.475)
Hours of external care per day	1.010 (0.0157)	1.007 (0.0241)	0.962 (0.0269)	0.991 (0.0146)	1.015 (0.0128)	1.017 (0.0261)
Local cost of child care per child	1.006*** (0.00151)	1.002 (0.00261)	1.000 (0.00329)	1.005** (0.00161)	1.004* (0.00158)	1.005 (0.00380)
Living conditions						
Living space m ² per head	0.953*** (0.0103)	1.008 (0.00825)	1.017 (0.0109)	0.985 (0.00792)	1.002 (0.00734)	1.020 (0.0143)
Rural	2.100*** (0.279)	1.424 (0.275)	1.050 (0.252)	2.194*** (0.305)	1.299 (0.189)	1.012 (0.315)
Constant						
	0.0328*** (0.0136)	0.0354*** (0.0230)	0.0189*** (0.0139)	0.0537*** (0.0222)	0.339** (0.140)	0.00965*** (0.00881)
Model Characteristics						
Observations	4,707	4,707	4,707	4,707	4,707	4,707
Pseudo R ²	0.059	0.059	0.059	0.0649	0.0649	0.0649

Robust standard errors in parentheses; *** p<0.001, ** p<0.01, * p<0.05

We focus our discussion mainly on the results of the first category: ‘Neither of the parents participates’ – as we consider those to be the most acute cases. The observed effects for this particular category are very consistent across play and care activities. This supports our notion that such parental behaviour is a more general approach or a choice in overall parental practices. We therefore combine the presentation of the results on play and care under the corresponding dependent variable categories.

Time Availability Hypothesis

Neither of the parents participate: We find limited confirmation for the time availability hypothesis for cases of joint non-participation of parents in care and play. The only observed direct effect is that of a mother’s employment status, which has high predictive power in explaining joint non-participation as well as her own involvement in care. It increases the odds of joint non-participation by a factor of 1.8 relative to the participation of both parents. Given the father’s low levels of involvement in care, a mother’s employment increases the risk of children being left without either of their parents participating when the father is already withdrawn. Neither a mother’s nor a father’s low education was found to be associated with parental non-participation. This indicates that decisions on parental withdrawal are different in nature from the time input decision we saw in Chapter 4, where low levels of parental education had a strong association with parents’ contribution to leisure activities with children.

Mothers’ non-participation (conditioned on father’s participation): The magnitude of the effect of a mother’s work status on a mother’s non-participation in childcare is smaller than the effect of persistent poverty (an increase in odds by factor 2.6 compared to 3.1 for persistent poverty). So, while a mother’s labour market participation is clearly an important factor influencing her childcare decisions, it does not seem to prevail over the effects of material hardship or the influence of territorial setting discussed below.

We find that being in persistent poverty is statistically significant in explaining the risks of a mother’s non-participation in care activities (given a situation wherein the father participates): the odds increase threefold relative to both parents participating – the

highest coefficient in this particular model. The magnitude of the association along with the fact that not many other factors were found to be significant in explaining a mother's withdrawal from care indicate that mothers in persistent poverty are likely to face competing priorities and needs. They seem to choose to meet those priorities by reallocating their time away from children when the spouse does provide some care. The effect supports the finding of Chapter 4 on the effects of persistent poverty on the extent of a mother's time input in care.

Direct Substitution Hypothesis

Neither of the parents participate: We find no confirmation of the hypothesis that the help of family members or external care received by a child substitute for parents' involvement. Neither the presence of grandparents nor the total hours of external care received by a child show any statistically significant effect on joint non-participation of parents. At the same time, we see that the cost of childcare in the locality increases the odds of a child being in this category compared to 'both participate'. The direction of this effect is counterintuitive as the higher the cost the higher the odds of parents' joint non-participation in both play and care. The observed relationship disproves a substitution effect under which we would expect parents to pick up the responsibility when childcare facilities become too expensive. We can suggest a few possible explanations for the observed behaviour. Firstly, since this variable is constructed at the locality level what we observe could be an effect correlated to unobserved characteristics of the locality or region beyond those controlled for in the territorial factor. Secondly, as the price of childcare is not a true market price but captures the direct municipal subsidies of care provisions as well as the restricted supply of places,²³ the true behaviour of parents is likely be distorted.

Mothers' and Fathers' non-participation (given the spouse participate): We find that the presence of older siblings in the household increases the risks of individual fathers' and mothers' non-engagement in play only. The magnitude of the effect is strikingly high: it increases the odds of fathers' and mothers' withdrawal by a factor of 2.4 and 2.

²³ We discuss this issue further in Chapter 6.

5 respectively, making it the biggest influence in those models. This supports the findings of Chapter 4 but shows that older siblings act as a direct and readily available substitution for the parental figure in activities which they themselves are likely to enjoy and in which they are willing to participate.

Child Effects Hypothesis

Neither of the parents participates: As anticipated, the natural progression of children with age shapes parental decisions, particularly in regard to the ‘difficult’ age of 11–14 when supervision from and leisure interaction with parents will cease for some children. The magnitude of the effect in care is twice as big as in play activities. Holding these factors constant we observe that being a girl increases the odds of joint parents’ non-participation in supervision and care activities as well as the father’s withdrawal from leisure/play. This is an intuitive result, which points to some gender preferences among parents and also to specific traditions of bringing up girls as helpers to the mother in relation to household tasks. Our findings generally indicate that the risks for children of both parents’ withdrawal are highest when they do not have siblings and when they reach secondary school age. The risk of a father’s withdrawal from care as well as leisure can start much earlier, even from age seven.

Structural Failure Hypothesis

Neither of the parents participates: Structural factors of disadvantage such as rural location are found to be a very important predictor of increased risk of joint non-participation on the part of parents in leisure as well as in care. For children living in a rural area the odds of having both parents not involved in their leisure activities increase twofold (by factor 2.1) and similarly in care (factor 2.2). A rural location is a complex measure as it includes many structural but also social and cultural differences. Our model controls for parents’ work status, which captures the variations in rural–urban labour markets, poverty, and parents’ education – a common measure of preferences and labour market productivity. Therefore, we argue that the remaining effects associated with the variable in our model are likely to reflect common community characteris-

tics related to territorial isolation and possible traditional cultural and social perceptions resulting from limited external communication and information channels.

Perceived hardship, expressed as the inability to pay for children's extracurricular classes (music, sport, etc.), is found to be one of the most consistent indicators of an increased risk of parents' non-involvement. It is highly statistically significant in explaining joint non-participation of parents in both activities. Holding all other factors constant, it increases the odds of joint non-participation in play by 67% and in care by 62% relative to the category where both parents participate.

Mothers' and father's non-participation (given the spouse participates). The reported inability to pay for extra classes is also found to be strongly associated with a father's non-engagement, and at an even bigger magnitude: the odds of the latter increase by a factor of 2.2. As we discussed in Chapter 4 when we introduced the variable, it can represent both an actual lack of money as well as a lack of priority given to the classes by the parents when compared to other material needs. Our assumption is that the observed direction of the variable in the model indicates the actual priorities given to child's non-academic development.

Individual failure hypothesis: Mothers' and fathers' heavy drinking is found to explain joint and individual parents' behaviour. Specifically, a father's heavy drinking increases the odds of not just the father's withdrawal in play (by 66%) and care (by 25%) but also in the joint non-participation in care (by 36%) relative to both parents' participation. The effect is likely to be connected to other factors (unemployment, material difficulties, etc.), as well as to mental health problems²⁴. The effect of heavy drinking on parental withdrawal from care is in contrast to our findings on the extent of parental time input seen in Chapter 4. There we did not see much influence from drinking on how much time parents spend with their children. This confirms again that with parental non-involvement we face a different set of decisions.

²⁴ Tested in the exploratory analysis.

5.6 Discussion

Two of the five tested hypotheses find strong support by our analysis across both types of activities. Specifically, we will discuss ‘structural failure’ and the influence of child effects, both of which belong to the *demand* group of factors within our theoretical model. The individual failure hypothesis and time availability hypothesis (through the mother’s work status) finds support only in regard to joint withdrawal from care. Out of those, we discuss only the issue of heavy drinking due to its importance in the Russian context.

Structural Failure

We argue that territorial and community isolation, entailing limited access to labour markets and a modern information network, help to preserve certain norms and beliefs regarding parental roles among rural families. The need for a self-sufficient livelihood can motivate parents to focus on children’s involvement in productive household activities with the high value placed on child’s early independence. One qualitative study commissioned by UNESCO as a background report for a Education For All cross-country monitoring survey (Taratukhina, et al., 2006) provides enlightening evidence on the parental practices in some rural areas of Russia today. This research concluded that:

- Rural parents...give priority to the development of the cognitive sphere and intellectual abilities and do not consider as aims of upbringing the development of personal qualities and the children’s successful social adjustment;
- Rural parents don’t think about the upbringing of very young children, considering that at that age only infant health is necessary;
- Upbringing by rural families is in many ways determined by the openness of the rural social environment, which makes for the strong influence of the opinion of relatives and close friends on the upbringing process;
- Rural parents’ concept of pre-school children <is> as diminished copies of adults; the monotony and shallowness of child activity in the family, the lack of contact between adults and children; the inability to describe things to children objectively and to analyse their own methods of upbringing; efforts to evaluate not the behaviour

and activity of the children but their personality, etc.; in the countryside, the family is the only instrument for bringing up pre-school children;

- Parents' chief methods of influencing rural children are strictness and excessive demands and prohibitions.²⁵

This qualitative evidence supports the interpretation of our empirical findings as a specific construct of a parental role among rural parents, holding such factors as poverty and parents' education constant. Living in rural locations will most likely mean a higher risk of children having limited social and leisure interactions with parents at earlier stages of their life. For example, only 3% of urban children aged 0–2 have reported non-participation from parents, while this number is over 12% in rural areas. This happens irrespective of a low level of parental education, poverty experience or parents' employment.

The consistency of factors affecting the odds of parental joint withdrawal across two different types of activities gives ground to suggest a conscious choice or strategy. The observed behaviour would be in line with the 'Natural growth' approach to parenting, which Lareau (2003) found to be prevalent with working-class families in the US. This approach would prefer giving direction but resisting from direct interaction with children to stimulate independence and self-reliance.

The most important aspects of rural location – once we control for the effects of individual factors on the resource side – are structural, thus supporting our structural failure hypothesis.

Additional classes are undoubtedly an opportunity for children to explore new activities, new skills, to socialise more and generally develop their non-academic potential. Our data suggests that the affordability of such classes is likely to be a proxy for some real material difficulties. The correlation of this variable with responses on affordability of other household needs suggests this to be generally the case: 97% of those who say that cannot afford classes for children also cannot afford to improve their living conditions,

²⁵ The citation is reproduced from an original translation into English and was not edited by the author.

98.2% and 98.6% also say that they cannot afford save for big purchases such as a car or send their family on vacation abroad and 71% cannot save for a child's university education. At the same time, it is not unreasonable to suggest that a motivated parent who gives a high priority to their child's development would likely try to compensate for the lack of external opportunities by providing more rather than less parental input at home. This is not the case for the children in our sample. Therefore, we argue that the effect is true for parents experiencing some perceived material stress but only among those who have low aspirations in regard to their child's human development. This could be due to low awareness as a result of a lack of information or other unobserved characteristics. Testing separately for possible interactions of this variable showed no moderating effects of parental education or the number of children in the family. We control for poverty experience in the model and see that it does not have any significant effect on parental withdrawal on its own. Since the low income aspect of rural location is accounted for, we conclude that the effect works through parents' interpretation and prioritisation, thus falling under the structural failure hypothesis and on the *demand* side of the PTE model.

Child Effects

The assumption that children of different ages need different amounts of attention is undisputed. Yet our analysis shows that as children grow older, they are also more likely to be left without any supervision and support. The difficult question still stands whether this is appropriate. For example, 11–14 year olds enter a rebellious, difficult stage of their lives where they can lose their connection with their parents at the time of their highest vulnerability to external negative influences. Empirical evidence points towards some important influence that parents' engagement with adolescent children has on various aspects of their life, from academic achievement to risk behaviour. A systematic review of longitudinal studies found that parental involvement, parental support, and general communication are among the factors which predicted reduced levels of drinking by adolescents and delayed alcohol initiation (Ryan, et al., 2010). Parental monitoring and father-youth connectedness were found to be associated with reductions in problem behaviour among adolescent children over time, irrespective of the child's

gender or the residential status of fathers (Fosco, et al., 2012). Indirect measures of parent-child time together – such as the frequency of family meals – were shown to have an inverse association with risk behaviour of youth such as tobacco or alcohol consumption, low grade point average and depressive symptoms (Eisenberg, et al., 2004). Thus collected evidence suggests that positive parental engagement with adolescent children, whatever form of caring it takes, is crucial. An unrealised need for such engagement which, as we argue, is reflected in our findings, can have immediate and long term effects on various aspects of adolescents' well-being in Russia.

The fact that the younger group of children aged 7–9 is also at risk of joint parental withdrawal from supervision or care is also worrisome, especially as the Russian legislator does not provide clear guidance on the minimum age from which a child can be left without supervision by an adult (IISP & UNICEF, 2011). The positive effects of parental involvement during the early school years are supported by empirical evidence from a longitudinal study (Barnard, 2004), which confirms associations between parental involvement during elementary (primary) school and children's later achievements in high school. In addition some parental time input, including helping their children with homework during these early years, was found to prevent ongoing behavioural problems (Domina, 2005). Besides, it is much more difficult to argue that primary school children are independent enough to take care of themselves on a daily basis. Parental attention at this developmental stage is undeniably important and reported withdrawal from key activities by both parents raises questions that warrant further investigation in future research.

Individual Failure

The negative consequences resulting from alcoholism and affecting the family and children have been widely discussed among scholars and media for more than a decade. In the Russian context, it can be associated with personal problems, exposure to social drinking, specific territorial factors (typically drinking is more prevalent in rural locations (Kopilov, 2012) or a marginalised style of living (Nemtsov, 2011). Generally speaking, however, it is a symptom of disadvantage in the family (FSC, 2010). In the

Russian context, heavy drinking among men is often triggered by economic loss but it is reinforced by the social environment (Nemtsov, 2011). Our finding generally supports fragmented expert evidence in Russia on the issue of social, emotional and psychological problems in families with an alcohol-dependent father. It indicates that the risks are not only present in the child not receiving the father's attention but, crucially, both parents withdrawing from the core of parental responsibility – care and supervision. It has to be noted, however, that the risks are lower than those that we considered under the structural hypothesis. As an individual factor it can amplify the concern for rural children, given the prevalence of the problem in those locations.

Time Availability and the Poverty Experience

We hypothesised that poverty can have an effect on parental non-involvement through increased demands on parents' time, including the heavy burden of household work as well as extra efforts in income-generating activities. We do not find any support to this hypothesis on the joint cases of non-involvement. This means that poverty or income disadvantage – neither as shock to resources nor as persistently low material resources – on their own do not pose any risk of children having non-involved parents. In other words, families in poverty are not different in this respect from others. However, we find the risks for children in persistent poverty having mothers who are not involved in supervision and care are conditioned on the father's participation. Along with the findings from Chapter 4, this suggests there is a strong case for concern or some further investigation into mother–child practices in care under persistent poverty.

Conclusions

This chapter has discussed the partnership between the state, family, and the market in realising children's human potential and the drastic transformation this has undergone in Russia since the early 1990s. The 'privatisation' of responsibility for children's human development, socialisation, and other aspects of upbringing to parents and families happened in a relatively short period of time, basically within one generation of parents. From the onset it was driven by fiscal and budgetary concerns rather than a well-

articulated ideology. The drastic contraction in the size of the state in this area without an articulated new direction resulted in families being left to decide on their own according to family means and aspirations how much care and interaction their children need. Some failures of parenting were inevitable, resulting in children being left without supervision and care.

This chapter empirically examined the nature of parental non-involvement in Russia, focusing on its associations with economic stress as measured through poverty experience and structural factors of disadvantage. We tested the theoretical proposition that the extreme cases of parental non-involvement are the result of a failure on the side of *resources*. Primarily, we were interested in the role of transitory and persistent poverty as a measure of material resources to explain such phenomena.

We find no empirical confirmation of the influence of the poverty experience on joint withdrawal from child-related activities or to the propositions of the PTE model. This means that even persistent low income, when considered in isolation from territorial or attitudinal factors, is unlikely to cause parental withdrawal. Instead, the findings imply that it is not the shock to *resources* but rather a failure on the *demand* side that defines the long-term equilibrium. In other words, parents are likely not to consider such low involvement problematic for children, but rather as an appropriate parent-child relationship. It seems to be a family strategy or conviction that leaving the child to his or her own devices is the right approach, which leads to parents refraining from engaging.

The results of our multivariate analysis show that the mixed influence of child effects, type of settlement and low priority being given to a child's non-academic development are primarily responsible for joint parental withdrawal. In terms of the supervision and care of children, this could be exacerbated by alcohol dependency on the part of the father. From an early age, children in rural locations are significantly more likely than their urban peers to have neither parent spending any leisure or care time with them. Furthermore, 11–14 year olds are most likely not to receive any input from both parents but this is also true of some children of primary school age. These findings lend support to the structural failure hypothesis that suggests a lack of involvement in terms of pre-

served traditional norms and perceptions of parenting due to territorial isolation and an information vacuum. This can lead to low awareness of the benefits of parent–child interaction in non-productive activities and to the preservation of a belief in ‘natural growth’, i.e. the idea that children grow up without the need for specific parental input.

We also find that reported inability to pay for additional non-academic classes for children increases the risks of joint parental non-participation in both play and care activities. Although we cannot deny the possibility of a real material squeeze being experienced in those families, accounting for poverty in the model means that the low priority given to developing a child’s non-academic potential relative to more fundamental needs like nutrition, health, or other family provisions is actually the more likely explanation.

The key message of this chapter is that it is not the economic stress – i.e. the pressure on material resources experienced by the family – but rather the low demand for involvement which leaves some children without parental attention, guidance or leisure interaction. This implies, according to our PTE framework, that there is no tension between the *resources* and *demands*. The lack of parental time allocation – as extreme as it may be in this case – is at the chosen equilibrium, if not from the societal or the child’s perspective, but from the viewpoint of the parents.

Chapter 6

The Great Recession: Are Russian Children Benefiting or Losing Out on Parental Time?

In 2009, total industrial production in Russia fell by 9.3% and foreign trade by 35% (FSSS, 2011)²⁶. It marked the peak of the ‘Great Recession’ in Russia. It is probably not the most severe and long-lasting economic crisis Russia has experienced in its history. Indeed, one can argue that Russian families have built a high resistance and adaptability to crisis environments over the last few decades. In relative terms, however, the material challenges that parents deal with today are not less serious. Neither are the challenges faced by children themselves: they experience social, emotional, and educational pressures in their own fast-paced micro world. Are parents there for them at a time when material difficulties and uncertainty about the future dominate parents’ minds and probably rule their actions? Three key questions guide the analysis of this chapter:

- Does drastic change in macro-economic conditions (aggregate shocks) directly influence parental time allocation adjustments?
- Are Russian children more likely to lose out or benefit from increased parental care and attention?

Drawing on our theoretical framework, we test the proposition that there are aggregate-level shocks and changes to child-related welfare provision, which can directly affect the status quo of parental time allocations. If adverse shocks to the economy, measured through increases in the regional unemployment rate or a decline in regional gross output, are found to explain any change in human resources available to children, then this will raise questions on whether regional and local policies reach vulnerable families and sufficiently protect them during the crisis. It also will help us better understand patterns

²⁶ Data is in real terms (constant prices).

of parental responses to macro-economic pressures and the non-material resources available to children during those times.

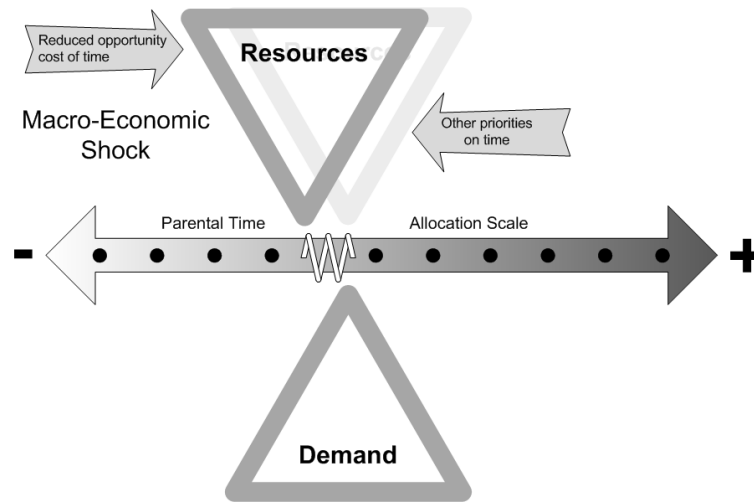


Figure 6.1: The Effect of Macro-Economic Shock in the PTE Model

After the acute financial crisis of 1998, during which Russia defaulted on its debt, seven long years of economic boom and development brought the country the status of a fast-growing emerging economy. By 2008, Russia had doubled its GDP and accumulated extensive gold reserves. Poverty was declining and unemployment was at the lowest level in a decade at 6.1% (FSSS, 2010). The onset of the global financial crisis seemed to touch its economy only indirectly and in early 2008 it continued to look ‘healthy’. Yet in early 2009 the full scale of the economic downturn became apparent: the sharp decline of 7.9% in GDP in that year was one of the biggest in the world. Over the period 2007–2010 the risks of poverty for families with children increased due to there being fewer protection mechanisms and higher labour market risks (Pishnyak, et al., 2011). Some parents lost their jobs, some were forced to cut down their weekly work hours, and others had to work more for the same money. As a recession is a time of uncertainty, many factors combine to influence the parental response. While we assert that in the long run parents’ time allocations will tend to be at equilibrium between the demands for their attention and care and the available resources, adverse changes in the socio-economic environment can in the short run shift priorities away from children to other emerging needs. This chapter is going to test this proposition.

The RLMS is a unique dataset which offers detailed information on individual children and their parents and provides structured panel data from the middle of the recent great recession. Although there have been a number of papers examining the effects of this recession on individual time allocation decisions (Bloemen & Stancenelli, 2008; Burda & Hamermesh, 2009; Gimenez-Nadal & Molina, 2009; Morrill, et al., 2012), we are not aware of studies that have focused on child-related time allocation during this time. Morrill et al. consider it alongside their main interest in spouses' time together in the US context (Morrill, et al., 2012). Ginja (2010) incorporates child-focused time investment into the micro-economic framework of human capital investment under income shocks, but the data used exclude the years of the current recession and the study is based on three US datasets. Our analysis seeks to complement these recent studies on time use by connecting aggregate statistical data on the regional unemployment rate and the RGP per head²⁷ to the individual child-level data in the RLMS. Distinctively, our analysis also accounts for another institutional factor – accessibility of childcare places in the region – measured through the percentage of children of a relevant age attending any kind of publicly subsidised childcare facilities.

This chapter is structured as follows: we start by pointing to the considerable and uneven impact of the recent recession on Russia's economy by highlighting geographical disparities in key social indicators. Then, we outline the theoretical assumptions regarding individual time allocation during aggregate shocks and, after presenting longitudinal data and main measurements, draw attention to some trends in individual time allocations among parents including formal and informal work. This leads us to the presentation and discussion of our empirical results. Finally, we conclude by recapping the key messages of the chapter.

²⁷ RGP is an aggregate indicator of economic activity in the region, which measures production and services in regard to final consumption. It is calculated at current prices (i.e. is nominal).

6.1 Russia's Response to the Global Recession of 2008–2009

The Key Features of the 2009 Recession in Russia

The Russian economy was largely transformed over nearly ten years of continuous growth from 2000 to 2008: the GDP per capita doubled, wages tripled in real terms, and unemployment and poverty fell (FSSS, 2010). It was a very different country from the one which a decade before in 1998 had suffered a dramatic financial crisis. But while Russia was better prepared to face the crisis than many other emerging or developed economies, the underlying structural weaknesses – especially the dependence on a single commodity – made the aggregate shock faced by the country particularly strong. Experts note that a triple shock of declining oil prices, outflow of capital and foreign investment, and a fall in industrial production led to the dramatic fall in the real GDP of 7.9% in 2009 (Begetic, 2010). This, however, had a relatively mild effect on the labour market and poverty primarily due to a timely government response utilising direct transfers to industries and an increase in social support. General unemployment rose less than predicted to 8.8% at the end of 2009. Poverty remained relatively stable or even slightly declined thanks to increased social transfers, going from 15% in 2007 to 13.4 %

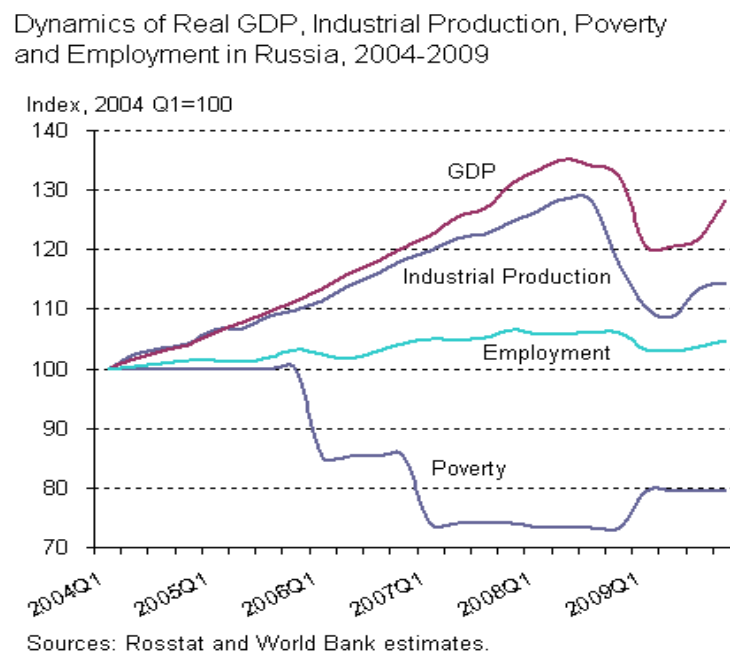


Figure 6.2: Dynamics of Real GDP, Industrial Production, Poverty and Employment in Russia 2004–2009 (Source: Begetic, 2010)

in 2009.

Aggregate statistics can be very misleading, however. Russia is a federal state uniting 83 economically diverse and geographically dispersed regions. Recession had a very different impact in different places and structural regional inequalities were revealed through constrained labour markets and economic stagnation.

Regional Disparities in Output and Unemployment Rates

While average unemployment rates across Russia were 8.1% in 2009, the variations between regions were striking: in some regions unemployment did not exceed 2% and in others it peaked at 25–30%. On the whole, however, by the end of 2009, 21 regions recorded unemployment rates of more than 10%. The light areas on the map in Figure 6.3 represent the regions with the lowest unemployment rates (including Moscow and St. Petersburg), with the darkest being the highest ones (including the North Caucasus republics).

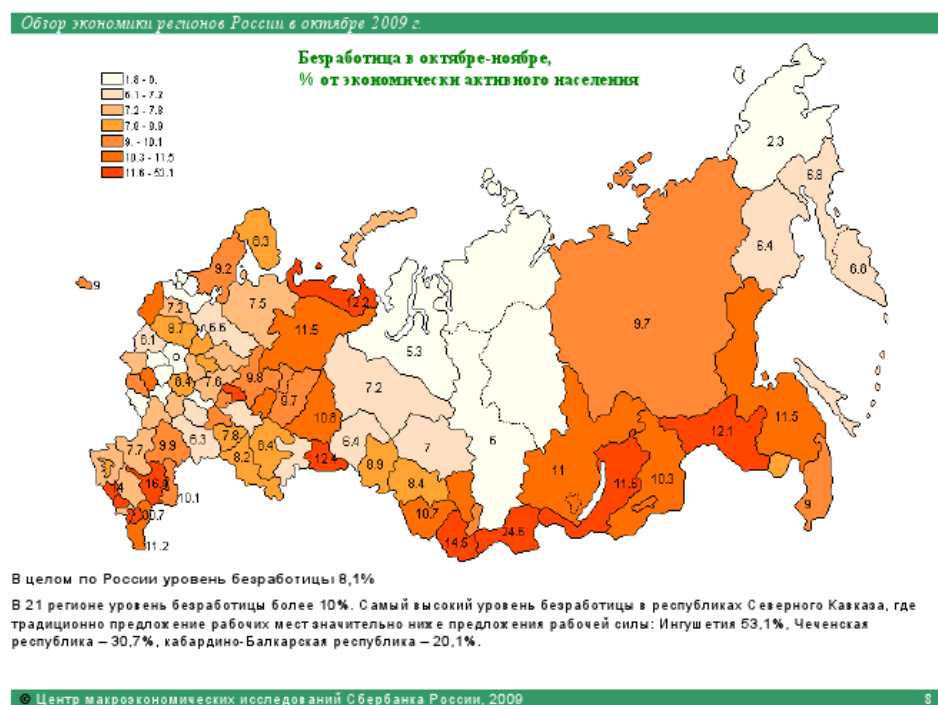


Figure 6.3: Unemployment Rate in October/November 2009 (% economically active population)²⁸

²⁸ Source: Center of Macroeconomic Analysis, Sberbank RF, 2009

Meanwhile, the situation in the RGP rate in 2009 ranged from a fall of 10.8% in the Central Region or 8% in the Ural region to moderate growth of 1.6% in the Far East Regions compared to 2008 (FSSS, 2010). It is worth noting though that, despite the fall, the RGP per head in the Central Region was still 36% higher than the average in Russia and in the Ural region it was 59% higher. In 2009, the index of economic inequality between Russian regions estimated based on the Gini coefficient was almost 0.4 points (Zubarev, 2010) despite continuous federal transfers.

Hidden Unemployment and Earnings

While not as dramatic as the economic crisis of 1998, the recession of 2009 affected the general economic climate in all Russian cities. However, the effects were neither homogeneous nor unidirectional across regions. Among the most affected regions were those which were already economically depressed before the recession and which had a strong tendency for ‘hidden unemployment’ – with 6–8% of the working population being on unpaid administrative leave. Earnings here fell by as much as 17%. Although they faced a slow recovery, even in these most recession-hit regions the average earnings recovered relatively quickly to reach pre-crisis levels in late 2010. Another group of regions depends on mono industries. The recession hit them particularly hard and their drop in production, rise of unemployment and fall in earnings was the highest in the country: by the end of 2008 the regional GDP fell by 25–40% in some areas. Hidden unemployment had grown by 6–9% at the beginning of 2009 as many people worked a reduced working week or were sent on unpaid leave. Other recorded negative employment practices during this recession included reductions in official and informal wages, in employer provided benefits, non-payment of bonuses, delays with payments, etc. (Gorina & Zubarevich, 2011). Megacities such as Moscow and St. Petersburg were also highly affected by the crisis, especially in the areas of banking services, construction and retail. The metropolitan cities, however, recovered much faster than other areas. In 2010, average earnings in Moscow had already grown by 10% compared to the pre-crisis period.

It is important to note that among the regions with the lowest unemployment and lowest fall in real wages were those with the weakest economic development, such as the North

Caucases Republics, the Altai Republic, etc. The reasons for this were their relative isolation from the global markets, and thus low sensitivity to external shocks. Federal transfers also made it possible for such regions to increase average population earnings in 2010. Finally, the regions of the Far East were also relatively unaffected by the crisis due to the specifics of their industries and their better adaptive capacity. Experts note that these regions almost entirely avoided the practices of hidden unemployment. All this points towards very different trajectories in possible household and individual response to this macro-economic shock and cautions against any generalised assumptions.

Effects on Families with Children

A recent analysis based on a representative household survey in Russia (Pishnyak, et al., 2011) found that while some families (for example, those with pre-school and school children) felt the pain of the recession due to much higher consumer prices and stagnating earnings, others (such as those families with the youngest children) improved their material position due to mothers' re-entry into the labour market. The same study showed that families with children relied on their social network to smooth their consumption: the share of families with one child receiving an inter-family transfer increased by 7.4% and with two children by 14.1%. These families also changed their financial strategy of taking loans and savings more often than childless families. Generally, the effectiveness of the government anti-crisis transfers on the welfare of families with children was limited and, as was noted by a recent UNICEF report, its main purpose was to support the failing industries and ineffective domestic production rather than protect individual incomes (IISP & UNICEF, 2011).

6.2 Analytical Framework and Hypotheses

Utilising our general theoretical model of PTE under economic stress we relax the assumption on the stability of the macro socio-economic environment and institutional provision for children. We know that policies and the economy constantly influence parents' behaviour indirectly (for example, through labour markets). While examining

these mediating channels we also want to test if an aggregate shock can directly lead to a loss of equilibrium in terms of parental time allocation.

An external macro-economic shock such as a recession can affect individuals and families through three different channels: falling wages or a falling rate in wage growth, their own unemployment, and loss of value in their assets and earnings due to inflation (Edwards, 2011). The channels can be idiosyncratic or related to aggregate factors: losing a job by an individual or living in areas with high unemployment – ‘unemployment of others’ (Gimenez-Nadal & Molina, 2009). At times of buoyant growth and steady increases in wages, the rise in the shadow price of time provides more incentive to buy commodities in the market than to produce them at home. In the case of childcare, it means there is more of an incentive to pay for a nursery placement, a private nanny, or a math tutor, etc. In contrast, during a decline in economic activity when wages are falling or stagnate, the opportunity cost of the time required for home production is reduced. This makes it more efficient for individuals to produce time-intensive commodities at home. Russia’s subsistence agriculture for own consumption during the transition is a well-recorded example of such behaviour (Gronau, 2006).

Since economic downturns ‘*are times when household production is unusually efficient relative to production of market goods*’ (Hall, 1997), one can expect that the time spent on home production, leisure, and childcare varies as the opportunity cost of time – namely wages – changes. However, the magnitude and direction of change during cyclical economic fluctuations is ambiguous due to the offsetting effects of substitution and income effects.

We will illustrate this with respect to childcare. If during a recession the economic slowdown affects wages for all those employed in the market (employers do not give pay raises, bonuses, work hours are reduced and with them total compensation, inflation erodes the value of savings and earnings, etc.), parents can cut back on market-purchased time for children (child care, extracurricular activities, etc.), thus substituting it with their own time in looking after children. The greater the degree of substitution between time-intensive and goods-intensive commodities, the more likely this is to hap-

pen. For example, some childcare activities have a lower degree of substitution than others: for example, breastfeeding is more difficult to substitute than supervising a child's play. This implies that mothers with babies might have a lower incentive (elasticity) for substitution with market-produced services than mothers with older children, all else being equal.

Macro-economic changes – including pessimistic consumer expectations – can also impose a downward income effect. Parents can feel 'worse off' in the current economic climate and, as a part of their coping strategy, cut back on activities which require complementary goods or those that require a monetary contribution. Leisure with children is a likely candidate, with acts such as going to the cinema or theatre with children, visiting public places with leisure facilities becoming less of an option because they entail giving in to a child's requests to buy merchandise, to have a ride, etc. Some research indicates that low-income parents might be more inclined to stay home and engage in low-cost activities within the family (Evans & Moor, 2012). In other words, parents might reduce the activities in which money is an input (Guryan, et al., 2008). In general, the income effect might be relatively more important in income-constrained families (Ferreira & Shady, 2008).

Substitution and the income effect push in opposite directions and the final effect is ambiguous: child-related activities might increase if the substitution effect dominates or decrease if the income effect dominates. Above all, there are often too many competing demands and family needs over this period of time, which might be of a higher priority than child-focused activities. These include working longer hours, supporting current consumption with extra work on the allotment, or indeed having some extra sleep. Leisure will yield more personal utility and therefore can seriously compete with home production needs. For example, Burda and Hammemesh (2008) and Gimenez-Nadal (2009), using ATUR and Spanish time diary data, find that job loss leads to an increase in leisure activity rather than in home production. Gronau (2006), based on RLMS data, finds a 10% increase in individuals' free time in Russia over the pre- and recessionary period 1994–1998. The ambiguity of the individual response to aggregate shocks is also

reinforced by the heterogeneity of the economic impact of a recession across different localities and regions, as was discussed earlier in this chapter.

It is not unreasonable to expect that aggregate economic stress and/or the falling wages in the family will have an asymmetric effect on mothers' and fathers' time allocation decisions. According to the theory, this is primarily explained by their different attachments to the labour market. However, the time adjustment paths can be non-linear. Women can attach a different value to leisure and childcare duties to those perceived by men. So, a mother's leisure or even childcare time commitment might simply be less elastic than a father's. Morrill et al. (2012) find that changes in the amount of time parents spend with children are very different between mothers and fathers. According to this study, mothers' time remains practically flat over a period of high and low unemployment spells in the corresponding US state, with only a slight dip when the unemployment rate is very high (8–10%). Meanwhile, a father's time on enriching activities with children is increasing as US state unemployment rates increase, albeit as a very small increase of about 5%. Our expectation is that the father's time will not increase dramatically due to the embedded cultural expectation of the father in the breadwinner role in Russia. That said, the mother's care and leisure time might depend on the age of the child and corresponding availability for employment; a recession could stimulate her re-entering the labour market and this can have an overall effect on her time with her children.

A recession is also a time when families' reliance on their network or 'granny's safety net' might increase. Young parents or single mothers in Russia can move in with their parents (Lokshin & Ravallion, 2000) or delay establishing their own households not only to cut the cost of housing but often more importantly to secure reliable childcare arrangements. Parents who can rely on a grandparent's or other family member's help might be more flexible in their work arrangements, being better able to put in extra hours or engage in other income-generating activities. Our empirical analysis presented in chapters 4 and 5 indicates that Russian parents rely extensively on the help of elder siblings when those are present (aged 15 plus). Therefore, we can expect that the avail-

ability of a family safety net plays some role in parents' adjustment of child-related contributions during the recession.

Parents' time allocation during an aggregate shock can be particularly sensitive to the changes in formal childcare provision. We saw in Chapter 5 that Russian families' reliance on formal provision of childcare is still relatively high, especially at pre-school age (i.e. 3–6). In that chapter we also discussed the sharp decline in pre-school provision in Russia over the period of economic transition, partially due to demographic trends. Further reforms of fiscal decentralisation of pre-school and school education to the local governments, which were conducted in the early 2000s, led to greater variations in the amount and quality of care available in different regions. A particular problem at the regional level is the constrained supply which results in significant waits for places, especially for nurseries. According to a study by the Higher School of Economics (Abankina, et al., 2011) 1.5 million children are waiting for a place in Russia today. Increased inequality of access to pre-school places based on the type of settlement and family income has been one of the key negative trends in Russia over the last decade (Taratukhina, et al., 2006).

The availability of pre-school institutions in the region is influenced by many factors. One of them is the transfer of responsibility for their financing to the local budget level. The great variation in the revenue base of local municipal and regional administrations inevitably creates variations in the number of publicly funded places (Taratukhina, et al., 2006). However, based on our data and sample, the correlation between regional pre-school availability and RGP is extremely small, which does not support the hypothesis that economic development of the area is the main driving force of variations. Another factor that influences the supply of pre-school facilities in the region is the demand for places driven by the demographic situation. The current deficit of places in many areas indicates that, on average, demand outstrips supply. Finally, the priority that the local government gives to the policies targeted at families with children and/or to education policies does play a role. It is possible that this variable reflects the overall

‘family friendliness’ of the local policy environment and the level of attention given to educational policy²⁹ in particular.

Although the supply of pre-school places cannot be changed overnight, constraints on public finances during a recession due to increased social transfers³⁰ and altered priorities in public spending can mean that provisions in childcare and pre-school education can change direction. As the decision-making process is devolved to the local levels, changes in access to childcare and pre-school provision can also reflect the level of concern about pre-school and educational policies in the local government.

The availability of childcare places can influence parents’ decisions on their own time allocations of care, as it can restrict especially the mother’s ability to re-enter the labour market. Therefore, within the macro framework of this chapter, we believe it is very important to control for the change in this institutional factor.

The magnitude and expected duration of the crisis are important (Ferreira & Shady, 2008). When the recession is short and is followed by a robust recovery, the aggregate demand in the economy does not fall as much as during a prolonged and greater fall in GDP and an unstable recovery. This means that a household’s anticipations of recovery and reallocation of time under a short-term macro-economic crisis will be very different from a lasting economic stagnation. Most of the limited empirical data on the recent aggregate shocks and time allocation comes from the US, where the great recession had a huge impact on the labour market and where there has been a very slow recovery. Meanwhile, Russia experienced a very different economic pattern: a sharp decline in production but a relatively quick recovery to positive growth, which might lead to households and individuals retaining their positive outlook and as a result not changing their behaviour that dramatically.

²⁹ The Constitution of the Russian Federation and the Law of Education guarantees the general accessibility and free provision of pre-school education. Pre-school provision is regulated by the Education Law and considered an integrated part of the continuous education system.

³⁰ An exception is unemployment benefits, which come from the federal budgets.

Overall, the challenge to analyse counter forces in parental time allocation decisions during a recession is to account for the fact that, as we noted earlier, more than one channel can affect an individual and a family (Edwards, 2011), including the life-cycle dynamics of the particular family (Jacoby & Skoufias, 1997). This idea was summarised in Gronau's lessons gleaned from examining Russia's time allocation decisions at the time of the financial crises in 1994–1996 and 1998 (2006, p. 29): '*A recession is a period of increasing diversity – some people are hardly affected and others have to go through major changes in their lifestyle.*' Gronau stresses the multiple processes which take place in the formal market and at home during the business cycle. The complexity is not just in the different responses by men and women or by the employed and unemployed, but in underlying individual expectations, perceptions or other unobserved factors. The approach we take in testing the heterogeneity of parental response under this complexity is through a disaggregated analysis by different sub-groups of children and control for unobserved and static-in-time characteristics through a fixed effects regression.

6.3 Data and Measurements

Panel Data

This chapter takes advantage of the longitudinal nature of the individual time use data from the RLMS. As discussed in Chapter 3, the most recent RLMS rounds provide a comprehensive dataset for longitudinal analysis. We kept an unbalanced panel to avoid selection bias since the chosen regression is agnostic to attrition. In this chapter, in addition to parents' responses on child-related time allocation we also investigate the trends in their time devoted to house work, commuting, and study. This data provides a useful background for examining our key questions on parental time during a recession.

Our key dependent variables are mothers' and fathers' time on childcare and leisure activities with children on an average day within the last 30 days. Following the hypothesis of heterogeneous response to macro-economic stress, we disaggregate the effects into sub-samples of children by four age groups (0–2, 3–6, 7–10, 11–14), number of

siblings in the family, parents' employment status and education, by family composition (full or single-parent households), by the type of settlement (rural, urban and metropolitan areas), by poverty status and by the presence of grandparents and elder siblings in the household. The sub-samples chosen reflect different levels of demand for care as well as different available resources at the time of an aggregate shock.

Measurements

For our key predictor variable, we chose Russia's *RGP per head* and *regional unemployment rates* as indicators of economic change during the recession and immediately before. RGP is an indicator measuring the gross value added in economic activity at the regional level (FSSS, 2010). It corresponds to GDP but excludes some collective items such as public provision or the military. It is an appropriate instrument to capture the macro changes in the economy independently of individual behaviour. *RGP per head* (annual aggregated measure) is a continuous variable represented in nominal prices in 1,000 Roubles. An alternative measure is the regional *unemployment rate* – a continuous variable representing officially reported unemployment in 38 regions (with the annual figure in percentages). All macro-economic data was taken from the Russian National Statistical Database for the corresponding years and linked to the regions where the children in our sample live. Specifically, the macro statistics were merged with our individual child data file through regional and site identifiers. All macro statistics used in our analysis are averages over a 12-month period of the corresponding year so as to minimise sampling errors resulting from short-term and seasonal fluctuations.

RGP is highly (negatively) correlated with regional unemployment levels. The former is a more inclusive indicator as it captures the official unemployment as well as the hidden one, since it is the driving force for both. In this sense, it might be a better indicator of an overall slide in economic activity in the Russian regions. At the same time, the unemployment rate taken at the aggregate (state or region level) has been used as a measure by other recent studies of macro-level shocks on individual time use (Burda & Hamermesh, 2009; Gimenez-Nadal & Molina, 2009; Aguiar, et al., 2011; Edwards, 2011; Morrill, et al., 2012). We will use regional unemployment and GDP as two alter-

native measures and will test them in separate models. Another regional-level indicator introduced in the model is the *access to pre-school provision in the region*. This continuous variable was also imported from the National Statistical Database. It is the coverage of children with pre-school places, measured as a share of children of corresponding age (1–6) attending any kind of publicly subsidised childcare facilities. The data is based on demographic numbers corrected to the number of children aged 5–6 studying at school. We use statistics disaggregated to the regional level.

We control for a number of time-variant individual and household characteristics that we presented in the previous chapters: age of the child, number of siblings, parents' work status, being in poverty (a generic current poverty status based on the RLMS's constructed variable), total hours of received external childcare and the living space per head. In the full model on mother's time, we also include mother's level of self-efficacy, i.e. her self-perceived respect from others. This is a time-variant indicator which showed significant influence in explaining variations between children in earlier chapters. Finally, in order to control for any unobserved factors related to the events of that year we include year dummies.³¹

6.4 Descriptive Analysis: Trends in Parents' Time Use, 2007–2009

Parents' Labour Market Participation and Child-Focused Time Allocations

The analysis in Chapter 4 confirmed the importance of parents' (particularly the mother's) labour market attachment on child-related time allocations. Here we look at the average trends in the incidence and extent of both parents' labour market participation over the pre-recession and recession years.

Table 6.1 shows mothers' participation ('incidence') in different activities and the average hours spent on this activity over the studied years. Mothers' participation in the labour market on average remained unchanged. However, the average working hours of those mothers who did work decreased from 8.80 to 8.74 hours between 2007 and 2008,

³¹ We do not need to control for regional effects due to the time-invariant nature of our sample.

and then further declined by almost 2% in 2009 to 8.47 hours. This might point towards hidden unemployment or simply reduced working hours being imposed by the employer.

Fathers' average participation in the labour market (Table 6.2) steadily declined over the years from 88% in 2007 to 86% in 2009. The rise in unemployment among fathers is not as dramatic as official figures suggest, but is still in line with the general trend for all men. Fathers' work hours seem to rise before the crises, peaking at 9.78 hours in 2008, but then declining, practically to 2007 level, to 9.4 hours. The observed fluctuations in formal market work are also in line with the trend registered by official national statistics on the mean hours of working men. These increased by about 1% in 2008 and then declined by approximately the same amount in 2009 (FSSS, 2010). The magnitude is also not directly comparable due to the fact that we look only at fathers and not all male individuals. Higher fluctuations in fathers' employment status compared to mothers' can be explained by the occupational differences: mothers more often work in public sector or services that are more protected from recession, while fathers are more engaged in manufacturing and other productions severely hit by a recession³² (OECD, 2011).

While parents' formal work remained stable or declined during this period, parents' contribution to child-related activities on average increased for both parents over 2007 to 2008 but then shows a slight dip in the recession year of 2009. Between 2007 and 2008, a mother's average total child-related time allocation marginally increased from 4.9 to 5 hours (Table 6.1). This can partially be explained by demographic trends: there were 158 additional babies in our sample in 2008, meaning more children were born than reached their fourth birthday. This is reflected in mothers' increased level of incidence (new entries of 4% in play and 5% in care). In the recession year of 2009, the situation changes: despite 121 additional babies being added to the sample, and increased incidences of 2% and 3% respectively, the average input of those mothers who did engage in activities declined by 4.5% in play and 3.9% in care.

³² We will elaborate on the gender characteristics of unemployment during a recession in Russia in Chapter 7.

Table 6.1: Mother's Time Allocation, 2007–2009

Activity	2007			2008			2009		
	Mean of all sample	Participation Rate	Mean of participated	Mean of all sample	Participation Rate	Mean of participated	Mean of all sample	Participation Rate	Mean of participated
Total market work									
Market work	5.36	62.8%	8.80	5.26	63.0%	8.74	5.23	62.7%	8.58
Commuting	0.01	53.4%	0.02	0.01	54.5%	0.01	0.01	55.4%	0.01
Child focused time									
Play/leisure	2.35	83.8%	2.85	2.50	87.5%	2.90	2.47	89.8%	2.77
Child care	1.47	74.0%	2.05	1.60	78.7%	2.07	1.61	82.3%	1.99
Work at home									
Washing dishes	0.41	94.4%	0.43	0.41	94.9%	0.43	0.41	96.2%	0.42
Food purchase	0.69	92.6%	0.74	0.70	93.1%	0.75	0.69	94.6%	0.73
Cooking	1.38	94.7%	1.46	1.35	94.3%	1.43	1.34	95.9%	1.40
Laundry	1.01	91.7%	1.10	0.95	91.6%	1.04	0.93	93.1%	1.00
Cleaning the house	0.84	92.6%	0.91	0.85	93.8%	0.90	0.84	94.9%	0.89
Gardening/Allotment	0.14	10.7%	1.30	0.11	6.6%	1.60	0.22	14.9%	1.47
Support of relatives									
Helped elderly parents	0.08	6.4%	1.33	0.09	5.8%	1.55	0.09	7.2%	1.31
Helped older children	0.14	13.2%	1.09	0.15	14.2%	1.03	0.15	15.1%	1.02
Helped grandparents	0.03	2.1%	1.53	0.02	1.8%	1.40	0.02	1.6%	1.19

The incidence of fathers' participation (Table 6.2) follows the mothers' trajectory with changes on average quite small in absolute terms but comparable to mothers' in relative terms: in 2008, fathers' play time increased by almost 4.9% (from 1.64 to 1.72 hours) and care time by 6.5% (from 1.08 to 1.15 hours). However, in 2009 the trend reversed: play and care time decreased by 3.5% (to 1.66 hours) and 4.3% (to 1.10 hours) respectively.

Table 6.2: Father's Time Allocation on an Average Day, 2007–2009

Activity	2007			2008			2009		
	Mean of all sample	Participation Rate	Mean of participated	Mean of all sample	Participation Rate	Mean of participated	Mean of all sample	Participation Rate	Mean of participate
Total market work									
Market work	7.74	88.5%	9.33	8.08	86.8%	9.78	7.78	86.1%	9.40
Commuting	0.01	77.3%	0.02	0.01	79.6%	0.02	0.01	79.0%	0.02
Child focused time									
Play/leisure	1.30	80.6%	1.64	1.43	83.9%	1.72	1.38	84.0%	1.66
Child care	0.44	42.8%	1.08	0.55	49.3%	1.15	0.53	49.9%	1.10
Work at home									
Washing dishes	0.10	41.4%	0.23	0.09	39.4%	0.23	0.09	39.2%	0.24
Food purchase	0.32	61.1%	0.53	0.33	63.4%	0.52	0.33	62.2%	0.53
Cooking	0.22	30.3%	0.73	0.20	29.5%	0.69	0.21	29.5%	0.72
Laundry	0.06	12.2%	0.51	0.05	10.7%	0.44	0.05	10.9%	0.42
Cleaning the house	0.12	27.1%	0.44	0.13	28.4%	0.45	0.13	27.7%	0.46
Gardening/Allotment	0.21	15.5%	1.37	0.20	13.4%	1.50	0.31	22.2%	1.39
Support of relatives									
Helped elderly parents	0.12	11.6%	1.04	0.16	13.3%	1.22	0.13	11.8%	1.08
Helped older children	0.05	6.1%	0.74	0.06	6.4%	0.88	0.06	6.8%	0.82
Helped grandparents	0.02	2.7%	0.80	0.02	2.4%	0.98	0.01	2.2%	0.63

The largest change in mothers' other time allocation over the period was mothers' hours spent on an allotment. The time spent on an allotment increased by 23% in 2008 only to fall by 8% in 2009. At the same time, we see that the incidence of mothers' participation in this activity increased dramatically from 8% to 18%, which suggests that for those this was a new activity for spent fewer hours on it than those who traditionally engaged in subsistence agriculture, thereby lowering the average.

Other large changes happened in the category 'helping others', which includes elderly parents living separately, older children, and grandparents (albeit with low incidence). Here the rate of change for mothers' and fathers' time ranges from 15% to 22%, with a similar trajectory as in the child-related time allocations. Time devoted to care of other family members might be related to the distance from where the elderly relatives live and to their ages. About 13% of fathers and 6% of mothers from our sample were helping their separately living elderly parents in 2008 and the average incidence of this changed very little over the years.

Play and Care Time by Regional Economic Indicators

The next step is to examine the association between the regional macro-economic climate and parental time allocation decisions. Figure 6.4 and Figure 6.5 present mothers' and fathers' time by regional unemployment rate and RGP per capita. Overall, we see a noticeable disparity between children who live in areas with very low unemployment rates and/or high RGP and the rest of the sample. This variation between the groups seems to widen over the recession period.

Children living in areas with very low unemployment rates are noticeably better off in terms of total parental attention compared to all other groups (Figure 6.4). This is true for attention and care received from either parent. For example, the mean mothers' play time with children in this group is 3.2 hours, while in other groups it ranges from 2.7 to 2.9 hours, a difference of around 0.4 hours (based on the pooled sample). The disparity between the groups of children living in areas with low unemployment to those who

live in less economically prosperous regions was larger in 2009 than in the previous years.

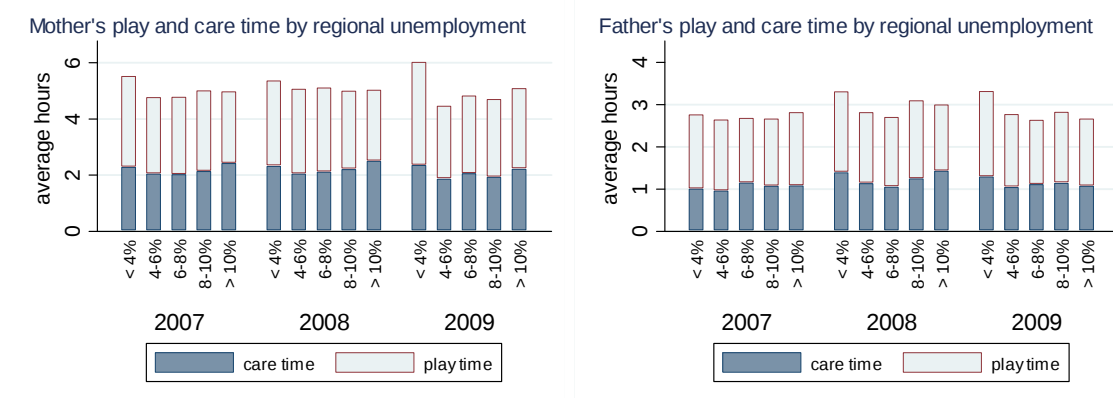


Figure 6.4: Parental Time Received by Children by Aggregate Regional Unemployment Levels

Figure 6.5 represents the distribution by regional economic development – RGP – and shows a similar association but a more linear progression: parental time seems to increase with higher levels of RGP. Children in the highest RGP group receive on average across all years one hour more play time from their mother than children in the lowest RGP group. The trend is similar for care time, but the gap is much smaller (about 0.4 hours). Father's play and care time input has a similar trend in the pooled sample of children but when broken down by year shows a change of direction or strategies in 2008 and 2009, with the trend no longer observed so vividly. Nevertheless, the group of children living in areas with the highest RGP still receive noticeably more time from the father than any other group of children.

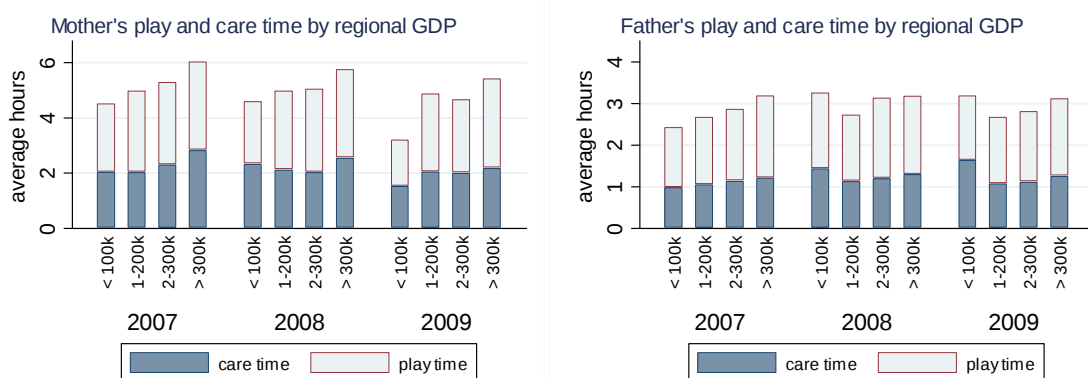


Figure 6.5: Parental Time Received by Children by Aggregate RGP Per Capita

On the one hand, the reasons for such disparities based on the level of macro-economic development can relate to the fact that areas with high economic growth and low unemployment are those that have a higher concentration of well-educated and active workers, implying that children living there are likely to have professionally educated, motivated and engaged parents. Indeed, the metropolitan cities of Moscow and St. Petersburg and their sphere of influence are represented in the groups of the lowest unemployment and highest RGP. On the other hand, better economic indicators in those areas can also mean favourable structural conditions, including better infrastructure for leisure and recreation (parks, sport facilities, etc.), better access to information networks related to child development and parenting, etc. For example, wider access to the internet means an opportunity to receive information and for social networking with other mothers. This might facilitate parental practices making leisure with children more desirable and achievable by parents.

Overall, our preliminary examination of the data indicates that between years 2008 and 2009 parental time contributions in both play and care declined while most of the other home production activities remained relatively stable or – in the case of working on the allotment – increased. We also see that, on average, children living in prosperous areas with high economic output and low unemployment receive markedly higher parental human investments than children from other areas. There is a clear progression in the level of mothers' total time contribution and the level of overall economic development in the region.

6.5 Empirical Results

We present the result of fixed effects regressions based on the full model as well as subsamples of children. The effects on change in mothers' time are presented in Table 6.3. The effects on changes in fathers' time are shown in Table 6.6. We tested the effects of RGP and regional unemployment rates in alternative models. The results on these indicators are not always consistent across parents, types of activities and within some subgroups. This suggests that they are likely to measure different things: RGP reflects a

more general economic climate including inflation while the unemployment rate could reflect how hard the formal labour market is affected in the area.

Leisure Activities

Mothers' Time

We find no clear effects from the recession on mothers' leisure activities in the full sample of children. We do, however, observe a change in mothers' leisure time with children due to aggregate shocks among kindergarten-age children, children with working mothers, and those in poverty, holding other factors constant.

Table 6.3: Effects of Regional Unemployment and RGP per Head on Mothers' Time in Play

PLAY TIME		Mother					
		Observations	Number of children	Unemp. Rate	R ²	RGP	R ²
Full Sample		4,377	2,258	-0.06704 (0.03549)	0.15	0.00073 (0.00258)	0.15
Age Group	Baby	1,036	694	-0.14818 (0.09927)	0.23	0.00152 (0.00357)	0.22
	Kindergarten	1,448	858	-0.22231* (0.07431)	0.12	0.00331* (0.00112)	0.11
	Primary School	1,189	726	0.12280 (0.08209)	0.08	0.00021 (0.00209)	0.07
	Secondary School	834	557	0.05927 (0.13717)	0.12	-0.00440* (0.00168)	0.13
Work Status	Working	2,702	1,540	-0.08880** (0.02476)	0.04	0.00115 (0.00254)	0.04
	Not Working	1,675	1,126	-0.13747 (0.13097)	0.06	0.00159 (0.00165)	0.05
Professional Education	Yes	3,635	1,866	-0.05692 (0.03147)	0.16	0.00213 (0.00237)	0.16
	No	742	466	-0.15394 (0.11545)	0.21	0.00108 (0.00625)	0.20
Siblings	No Siblings	2,249	1,192	-0.13880 (0.08482)	0.16	0.00083 (0.00191)	0.15
	Siblings	2,128	1,133	0.00192 (0.07477)	0.15	0.00119 (0.00473)	0.15
Spouse	In Household	3,596	1,884	-0.03153 (0.04259)	0.17	-0.00124 (0.00300)	0.17
	Not In Household	781	466	-0.12789 (0.10173)	0.08	0.00949* (0.00301)	0.09
Settlement	Rural	961	593	-0.11254 (0.13544)	0.23	0.02383 (0.01189)	0.24
	Urban	2,956	1,594	-0.01715 (0.05962)	0.16	0.01049 (0.00779)	0.16
	Metropolitan	460	240	-0.99969 (0.43343)	0.17	-0.00550 (0.00201)	0.17
Poverty	In Poverty	365	302	-0.52568*** (0.07066)	0.65	0.04008 (0.02657)	0.60
	Not In Poverty	4,012	2,133	-0.00087 (0.03432)	0.14	-0.00070 (0.00246)	0.14
Elder Siblings	In Household	420	243	0.01223 (0.13409)	0.21	0.01096 (0.00782)	0.22
	Not In Household	3,957	2,041	-0.07630 (0.03555)	0.16	0.00104 (0.00236)	0.16
Grandparents	In Household	1,143	636	-0.05891 (0.07909)	0.16	-0.00179 (0.00203)	0.17
	Not In Household	3,234	1,698	-0.04313 (0.05433)	0.16	0.00210 (0.00389)	0.16

Specifically, we find that a 1% increase in regional unemployment decreases mothers' play time in the group of children aged 3–6 by 0.22 hours (13 minutes), controlling for the interaction between change in unemployment rate and the mother's work status. The magnitude of the effect is seemingly small. However, if we relate this to the conditions of 2009 where average regional unemployment based on our sample increased by 2%

and in the most affected areas by 4.5%, we can expect on average a more substantial reduction of 24 minutes per day in that year and in the areas most hit by the recession of 54 minutes. The effect of RGP in this sub-group of children is consistent with the unemployment rate. It is possible that – as children of this age start school – the focus switches to the child's learning rather than play for this age group, and when it coincides with an economic downturn this entails changes in the mother's time allocation priorities.

The second affected group is children with working mothers. At close to 60% of the total, this is a relatively large sub-sample of children. A 1% increase in the regional unemployment rate decreases working mothers' leisure time with children by 0.09 h. (5.4 minutes) or by 11 minutes on average in 2009. Change in regional economic output is not statistically significant for this sub-group. Working mothers are likely to feel the changes directly through their attachment to the labour market, i.e. through changes in their working conditions or redundancies among their colleagues.

The effect of regional macro-economic activity (RGP) has a statistically significant effect on single mothers' leisure time with their children. As macro-economic conditions worsen (i.e. regional output falls), these children will spend less leisure time with their mother: a 10,000 Rouble reduction in RGP predicts a six-minute reduction in play time. In this sense, single mothers' response to macro-economic conditions is pro-cyclical.

The most important finding on mothers' leisure time with children relates to children in households below the absolute poverty line. This sub-group of children is strikingly different to other groups in terms of mothers' responsiveness to the regional unemployment rate. With a high degree of confidence we can say that, for them, a 1% increase in the regional unemployment rate reduces mothers' leisure time with children by 0.52 h. (31 minutes), while in the other groups we see no consistent change, controlling for all other factors. In accordance with our previous estimates, this would translate into a predicted reduction of one hour in 2009 and in the most affected areas to more than two hours.

The link between general labour market conditions and the individual behaviour of mothers in poor households is mediated by their attachment to the labour market (Table 6.4).

Table 6.4: Mothers' Play Time as a Function of Regional Unemployment under Poverty

VARIABLES	coefficient (std error)
Regional Unemployment	-0.52568*** (0.07066)
Interaction between regional unemployment and work status	0.28518** (0.06508)
Babies	0.60441 (0.26466)
Pre-Schoolers	-0.37976 (0.49557)
Secondary Schoolers	-0.18213 (0.92088)
Number of siblings	0.55966 (1.23781)
Hours of external care per day	-0.00208 (0.02610)
Mother's work status	-4.41978* (1.37180)
Self-reported respect received from others	0.22853 (0.12724)
Living space per head	-0.04377 (0.04695)
Rural settlement	0.63450* (0.26693)
Regional pre-school provision	0.07591** (0.01984)
Year dummy 2008	-0.01032 (0.46803)
Year dummy 2009	0.14790 (0.33365)
Number of observations	365
Number of children	302
R-squared	0.65059
Robust standard errors in parentheses	
*** p<0.001, ** p<0.01, * p<0.05	

The interaction term between a mother's work status and regional unemployment is a meaningful predictor here, with regional unemployment retaining its significance and magnitude. This means that work status has a moderating effect and there is a link between the unemployment rate in general and a mother's own employment. Both working and non-working mothers in low-income households are likely to decrease their play time with children but the magnitude is larger for non-working mothers. Working mothers in poor households decrease their time with children by 4.4 h. (4 hours 24 minutes) compared to the non-working ones. Also the interaction between work status and regional unemployment shows that while for unemployed mothers we observe a 0.52 h. (31 minute) decrease in leisure time per 1% change in unemployment, for employed mothers this is only a 15-minute decrease ($-0.52h + 0.28h = -0.24h$). This supports our assumption that the transmission path through which the regional unemployment rate

influences time allocation works through the concern of the mother about her own possible or actual employment. We will expand on this in the next chapter.

From the cross-sectional analysis presented in earlier chapters we know that mothers' self-efficacy as measured through self-perceived respect influences time allocations in regard to children. Therefore, we included this variable as a time-variant control. We find that change in the mother's self-ranking of perceived respect affects her leisure time with her children. This is observed in the full model as well as in most sub-groups, although not in the sub-group of children in poverty. A closer look at the data shows that a mother's perception of her respectability fluctuated over the pre-recession and recession years but there is an emerging trend: on average, fewer mothers marked the four highest ranks of respect and more the lower ones on a nine-point scale during 2008 and 2009 compared to 2007. For mothers in poverty, other indicators of stress might be more telling. This is something we will explore further in our next chapter.

*Father's time***Table 6.5: Effects of Regional Unemployment and RGP Per Head on *Fathers'* Time in Play**

PLAY TIME		Father					
		Observations	Number of children	Unemp. Rate	R ²	GDP	R ²
Full Sample		3,560	1,834	0.00322 (0.04536)	0.03	0.00034 (0.00099)	0.03
Age Group	Baby	910	604	0.05754 (0.06780)	0.04	0.00187 (0.00385)	0.03
	Kindergarden	1,134	683	-0.00397 (0.06156)	0.04	-0.00078 (0.00289)	0.04
	Primary School	909	557	-0.03621 (0.09408)	0.04	-0.00070 (0.00208)	0.04
	Secondary School	607	408	0.07902 (0.10457)	0.13	0.00202 (0.00181)	0.13
Work Status	Working	3,214	1,717	-0.04232* (0.01305)	0.04	0.00038 (0.00098)	0.04
	Not Working	346	278	-0.10989 (0.09487)	0.16	0.00207 (0.00288)	0.15
Professional Education	Yes	2,984	1,572	0.01874 (0.04564)	0.04	0.00062 (0.00119)	0.04
	No	576	361	-0.10971 (0.09714)	0.07	0.00495** (0.00134)	0.09
Siblings	No Siblings	1,674	895	0.07921 (0.05022)	0.04	-0.00467* (0.00140)	0.04
	Siblings	1,886	1,003	-0.04276 (0.06536)	0.05	0.00396* (0.00133)	0.06
Spouse	In Household	3,509	1,809	0.00453 (0.04629)	0.03	0.00052 (0.00112)	0.03
	Not In Household	51	31	3.07541* (1.15545)	0.94	-0.43214* (0.17259)	0.93
Settlement	Rural	783	491	-0.04712 (0.08805)	0.10	-0.00158 (0.01297)	0.10
	Urban	2,429	1,307	0.08225 (0.07057)	0.03	-0.00851 (0.00566)	0.03
	Metropolitan	348	185	-2.52507* (0.14870)	0.19	-0.00684 (0.00399)	0.19
Poverty	In Poverty	281	225	0.14003 (0.20171)	0.38	0.00389 (0.01339)	0.39
	Not In Poverty	3,279	1,751	0.03301 (0.03380)	0.03	-0.00082 (0.00105)	0.03
Elder Siblings	In Household	350	200	0.13598 (0.08613)	0.13	-0.00578 (0.00245)	0.12
	Not In Household	3,210	1,653	-0.02608 (0.05553)	0.04	0.00016 (0.00098)	0.04
Grandparents	In Household	745	423	0.15493 (0.09917)	0.06	-0.00418*** (0.00073)	0.05
	Not In Household	2,815	1,475	-0.02965 (0.04203)	0.04	0.00194 (0.00117)	0.04

Similar to mothers' leisure time, we do not find any direct effects of macro-economic conditions in the whole sample of children. Yet we can say with confidence that changes in the regional economic situation are likely to change leisure interaction with the father among children living in a metropolitan area, whose father is employed or has a low level of education and who have a grandparent residing in the household. The effect of regional unemployment for the sub-sample of children with working fathers is sensitive to the introduction of a poverty dummy variable reducing standard errors. Although the model does not indicate any interaction effect between them, it is sensible to suggest that working low-income fathers are under higher pressure to engage in different extra income-generating activities during a recession, which takes their time away from children.

Table 6.4. shows that a recession (the change in RGP) is likely to have a larger effect on fathers with a lower level of education. At the time of the downturn, they will reduce their leisure interaction with children to a greater degree than fathers with a professional degree. When RGP falls by 10,000 Roubles per head we predict a decline in father's care time of three minutes. However, contextualising it to the true RGP changes in 2009, we can predict much wider variations. In the Central Federal district, the average decline from 2008 to 2009 was 56,000 Roubles, which translates into a prediction of more than 16 lost minutes of father's care. Similarly, in the Ural Federal District the average decline was 22,000 Roubles or about 6.5 minutes. At the same time, the Russian Far East actually saw a RGP increase of 20,000 Roubles, which would mean children living there were likely to benefit from their father's increased attention. Still, the largest effect on fathers' interactions with children is observed from the unemployment rate among children living in metropolitan areas. For children from Moscow and St. Petersburg, a 1% increase in unemployment means 2.5 hours less interaction with their fathers, albeit with the caveat that the sample size is relatively small here, so this result should be treated with caution.

Care Activities

Mothers' Time

Generally speaking, mothers' childcare activities are not very responsive to the macro-economic climate (as can be seen in Table 6.6 below). While a change in a mother's work status is a highly significant predictor of her care time, there is no indication that this is facilitated by regional unemployment or gross output when we control for fixed year effects.³³ However, in the sub-group of children in poor or rural households a mother's care contribution is sensitive to the macro-economic environment.

Unlike what we generally see in leisure activities and fathers' care time, in the sub-group of children in poverty the effect of RGP is negative, which means mothers in-

³³ The interaction term between work status and regional unemployment was not significant here. Alternatively, we modelled mother's work status and work hours as a function of macro-economic variables, which did not produce any statistically significant results.

crease their care time with children by nearly 38 minutes ($-0.063\text{h} / 1000 \text{ RUB} * 10000 \text{ RUB} = -0.63\text{h}$) when RGP declines by 10,000 Roubles per head. This could support the characteristics of care as part of home production in the sense of time allocation theory. Other explanations do not readily present themselves we are left with a puzzle for further investigation.

Table 6.6: Effects of Regional Unemployment and RGP per Head on Mothers' Care Time

CARE TIME		Mother					
Sample		Observations	Number of children	unemp	R ²	RGP	R ²
Full Sample		3,944	2,119	0.05634 (0.05465)	0.13	0.00001 (0.00182)	0.12
Age Group	Baby	1,038	692	0.11046 (0.16645)	0.17	0.00102 (0.00296)	0.17
	Kindergarden	1,377	835	-0.09135 (0.05380)	0.08	0.00126 (0.00253)	0.08
	Primary School	1,047	671	0.16030 (0.08530)	0.12	-0.00101 (0.00228)	0.11
	Secondary School	605	431	0.01840 (0.12374)	0.18	0.00617* (0.00247)	0.17
Work Status	Working	2,292	1,388	-0.02052 (0.05679)	0.08	0.00312 (0.00174)	0.09
	Not Working	1,652	1,109	0.10195 (0.08141)	0.12	-0.00269 (0.00175)	0.12
Professional Education	Yes	3,231	1,730	0.04117 (0.05547)	0.13	0.00107 (0.00156)	0.13
	No	713	456	0.05949 (0.07510)	0.21	-0.00552 (0.00426)	0.21
Siblings	No Siblings	2,013	1,111	0.04145 (0.05870)	0.10	0.00237* (0.00088)	0.10
	Siblings	1,931	1,070	0.04104 (0.09074)	0.15	-0.00085 (0.00386)	0.15
Spouse	In Household	3,269	1,788	0.08210 (0.05659)	0.14	0.00003 (0.00211)	0.14
	Not In Household	675	414	-0.03918 (0.11866)	0.12	-0.00351 (0.00179)	0.11
Settlement	Rural	878	563	0.05246 (0.09951)	0.16	-0.02184** (0.00540)	0.18
	Urban	2,662	1,496	0.07386 (0.08378)	0.14	0.01379 (0.00791)	0.14
	Metropolitan	404	219	-2.15311* (0.10530)	0.14	-0.00628** (0.00005)	0.14
Poverty	In Poverty	335	279	0.46288 (0.27517)	0.44	-0.06311* (0.02601)	0.44
	Not In Poverty	3,609	1,995	0.02229 (0.05483)	0.12	0.00030 (0.00189)	0.12
Elder Siblings	In Household	348	211	-0.08165 (0.24340)	0.27	0.01613* (0.00563)	0.29
	Not In Household	3,596	1,928	0.06474 (0.04499)	0.13	-0.00052 (0.00195)	0.13
Grandparents	In Household	1,077	623	-0.05436 (0.06187)	0.17	-0.00237 (0.00141)	0.17
	Not In Household	2,867	1,567	0.09829 (0.05028)	0.14	0.00197 (0.00177)	0.14

It should be noted that the prediction became statistically significant only after controlling for the type of settlement in this model. This implies that low-income children see further variation based on where they are living, with children in rural areas catching up with their peers from metropolitan areas.

A surprisingly large effect of regional unemployment on mothers' care time is observed among children living in metropolitan areas: a 1% rise in unemployment rate there decreases a mother's care time by around two hours (Table 6.6). Moscow and St. Petersburg are the areas which were highly affected by the crisis. For example, in Moscow RGP fell by 107,000 Roubles while unemployment increased from 0.9% in 2008 to

2.7% in 2009. Unlike all other models, mothers' work status here is not an independent predictor of mothers' care time, although the interaction term between professional education and work status is.

Fathers' Time

The main finding here is that the change in RGP per head has a consistently positive effect on fathers' care time in a full sample of children, which holds very strongly after the addition of other control variables. It loses some significance from below 1% to below 5% only when we introduce an interaction term with fathers' work status (Table 6.7). Although the interaction term is not statistically meaningful, the sensitivity of RGP to it suggests that labour market attachment is probably an important direct channel of transmission for this effect.

Primary school children and children with siblings who have fathers who are employed and educated to a professional level, as well as children in poor households, are statistically different from the reference groups and likely to experience the largest effect. For example, children in low-income families will receive 10 minutes less care time from their father per day for a 10,000 Rouble decline of RGP (0.017h/1,000 Rub).

Table 6.7: Effects of Regional Unemployment and RGP per Head on Fathers' Care Time

CARE TIME		Father					
Sample		Observations	Number of children	unemp	R ²	RGP	R ²
Full Sample		2,075	1,273	-0.09613 (0.04167)	0.09	0.00593* (0.00200)	0.12
Age Group	Baby	699	505	-0.17930*** (0.03194)	0.14	0.00531 (0.00588)	0.17
	Kindergarden	694	489	-0.02236 (0.08218)	0.09	0.00957** (0.00262)	0.20
	Primary School	459	325	-0.19489* (0.08141)	0.16	0.00348 (0.00317)	0.14
	Secondary School	223	161	0.07135 (0.12165)	0.16	-0.00060 (0.00195)	0.16
Work Status	Working	1,864	1,171	-0.00561 (0.02275)	0.10	0.00702** (0.00182)	0.13
	Not Working	211	176	-0.27733 (0.14442)	0.57	0.00446 (0.00249)	0.53
Professional Education	Yes	1,733	1,073	-0.10360* (0.03034)	0.07	0.00764*** (0.00131)	0.11
	No	342	253	-0.21261 (0.30568)	0.45	-0.01142 (0.00567)	0.47
Siblings	No Siblings	975	622	-0.00790 (0.04087)	0.07	0.00490** (0.00116)	0.08
	Siblings	1,100	679	-0.13144 (0.06649)	0.07	0.00902* (0.00309)	0.12
Spouse	In Household	2,038	1,251	-0.09310 (0.04370)	0.09	0.00606* (0.00193)	0.12
	Not In Household	37	25	0.00000 (0.00000)	1.00	0.00545*** (0.00000)	1.00
Settlement	Rural	452	303	-0.09377 (0.08746)	0.19	0.00417 (0.01140)	0.18
	Urban	1,435	915	-0.17469* (0.07116)	0.15	0.00112 (0.00399)	0.13
	Metropolitan	188	128	2.72385 (0.25845)	0.48	0.01612 (0.00292)	0.45
Poverty	In Poverty	171	135	-0.30781 (0.22524)	0.47	0.01745*** (0.00294)	0.52
	Not In Poverty	1,904	1,193	-0.11621 (0.05196)	0.09	0.00459 (0.00376)	0.12
Elder Siblings	In Household	142	97	-0.02369 (0.16582)	0.33	-0.00387** (0.00090)	0.34
	Not In Household	1,933	1,182	-0.08521 (0.04962)	0.11	0.00656* (0.00236)	0.14
Grandparents	In Household	445	290	-0.14824 (0.07504)	0.16	0.00459* (0.00148)	0.15
	Not In Household	1,630	1,012	-0.10520 (0.05694)	0.12	0.00692* (0.00213)	0.15

Table 6.8: Effects of Regional Pre-School Provision on Mothers' and Fathers' Time with Children

PRESCHOOL		PLAY				CARE			
		Mother		Father		Mother		Father	
Sample		preschool	R ²	preschool	R ²	preschool	R ²	preschool	R ²
Full Sample		0.00867* (0.00282)	0.15	0.01521*** (0.00137)	0.03	-0.00701* (0.00224)	0.12	0.00672*** (0.00117)	0.12
Age Group	Baby	0.00076 (0.00509)	0.22	-0.01270** (0.00240)	0.03	-0.02824** (0.00551)	0.17	-0.01073 (0.00470)	0.17
	Kindergarden	0.02231*** (0.00388)	0.11	0.03528*** (0.00331)	0.04	0.00382 (0.00176)	0.08	0.00885** (0.00188)	0.20
	Primary School	-0.00680* (0.00220)	0.07	0.02501*** (0.00166)	0.04	0.01088** (0.00248)	0.11	0.00801*** (0.00138)	0.14
	Secondary School	0.01545 (0.00784)	0.13	-0.00750 (0.00429)	0.13	0.02119** (0.00437)	0.17	-0.03628 (0.02638)	0.16
Work Status	Working	0.01324** (0.00330)	0.04	0.01897*** (0.00194)	0.04	0.01645*** (0.00249)	0.09	0.00622** (0.00121)	0.13
	Not Working	0.02729* (0.01019)	0.05	0.00380 (0.00344)	0.15	-0.03913*** (0.00362)	0.12	0.00430 (0.00222)	0.53
Professional Education	Yes	0.00738* (0.00292)	0.16	0.01849*** (0.00127)	0.04	-0.00314 (0.00224)	0.13	0.01075*** (0.00081)	0.11
	No	0.01273* (0.00466)	0.20	-0.01849*** (0.00219)	0.09	-0.01780*** (0.00255)	0.21	-0.03419*** (0.00371)	0.47
Siblings	No Siblings	0.01258*** (0.00206)	0.15	-0.01221*** (0.00074)	0.04	0.01764*** (0.00265)	0.10	-0.03135*** (0.00302)	0.08
	Siblings	-0.00403 (0.00470)	0.15	0.02514*** (0.00190)	0.06	-0.01370** (0.00338)	0.15	0.00893** (0.00211)	0.12
Spouse	In Household	0.00801* (0.00325)	0.17	0.01079*** (0.00150)	0.03	-0.00545 (0.00252)	0.14	0.00443** (0.00118)	0.12
	Not In Household	0.00234 (0.00651)	0.09	0.03314* (0.01121)	0.93	-0.02213*** (0.00194)	0.11	0.00775*** (0.00000)	1.00
Settlement	Rural	0.01404* (0.00442)	0.24	0.01871*** (0.00321)	0.10	-0.00888** (0.00244)	0.18	0.00800** (0.00152)	0.18
	Urban	-0.11619* (0.04467)	0.16	-0.05958 (0.03370)	0.03	0.07187 (0.06928)	0.14	-0.07787 (0.08377)	0.13
	Metropolitan	0.10239 (0.02212)	0.17	-0.38137 (0.08321)	0.19	-0.02797 (0.02769)	0.14	0.54091 (0.10345)	0.45
Poverty	In Poverty	0.06110 (0.02629)	0.60	-0.29747 (0.38638)	0.39	-0.02707* (0.01026)	0.44	0.00797* (0.00253)	0.52
	Not In Poverty	0.01339** (0.00378)	0.14	0.01633*** (0.00139)	0.03	0.00033 (0.00205)	0.12	0.00390 (0.00237)	0.12
Elder Siblings	In Household	0.01553 (0.00715)	0.22	-0.01343* (0.00434)	0.12	-0.06748 (0.23585)	0.29	0.09584 (0.12195)	0.34
	Not In Household	0.01124* (0.00332)	0.16	0.01685*** (0.00129)	0.04	-0.00799* (0.00229)	0.13	0.00694*** (0.00112)	0.14
Grandparents	In Household	0.00189 (0.00363)	0.17	0.00581 (0.00317)	0.05	0.00319 (0.00177)	0.17	0.00047 (0.00291)	0.15
	Not In Household	0.00963* (0.00325)	0.16	0.01998*** (0.00195)	0.04	-0.01503*** (0.00215)	0.14	0.00847** (0.00160)	0.15

*This is a summary of the effects of the pre-school variable as a control in the models with unemployment rate and RGP as the main predictors.

The Role of Pre-School Provision

We tested the effect of change in access to nursery and pre-school places in models as the constraint in the supply of public childcare provision in the area. Since we also control for the direct substitution of parental time outside the family (hours of external care taken by the individual child), childcare availability is likely to capture parents' flexibility in formal childcare arrangements. Parents' ability to plan depends on sufficient information or awareness about the situation regarding pre-school places. We argue that in the Russian context parents are reasonably well informed as the lack of places leads to an observed waiting list. The longer the waiting list, the worse situation with pre-school places is.³⁴

We find that the availability of pre-school institutions at the local level has a direct influence on mother's and father's decisions in play and care time input holding all other factors constant (Table A6.5). Specifically, we find that an increase in pre-school provision in the area is generally associated with an *increase* in mothers' and fathers' leisure activity with children and an increased contribution to care from the father.

One explanation could be simply the pressure on parents to work with children on some routine targets: parents who prepare their children for pre-school and kindergarten institutions spend more time with them, making a conscious effort to develop their self-reliance and social skills. Childcare institutions themselves also often create additional demands for time to be spent with the children at home as they raise awareness of what kinds of support a child needs and require the parents to contribute to the educational goals they set for the children under their care. We will call this additional demand the 'spill over effect' of external childcare.

An additional explanation could be that the positive effect is a result of an overall positive policy environment when education is a high priority for the local administration. In this case, more information is provided to parents (especially mothers), and more work is conducted in partnership and through consultation with parents.

³⁴ Private provision of places is still very limited but slowly expanding, albeit more in metropolitan areas and big cities (UNESCO).

At the same time, the effect is not unidirectional for all groups of children: babies (0–2) and children without siblings and/or with poorly educated fathers are likely to experience a reduction in father's play time rather than an increase when there is an improvement in access. For example, we find that fathers who are educated to a low level are not just more perceptive to the situation with pre-school provision but also act in the opposite direction to fathers who are educated to a professional level: as pre-school provision improves by 10% children with a father educated to a lower level are likely to receive 23 minutes less of his care time, while children with a higher educated father receive six minutes more. It is possible that fathers with less education perceive the high availability of pre-school provision as an appropriate substitution for their input and mothers will be the main channels of communication with the child's institution, which reduces the positive information 'spill over effects' on fathers.

The change in mothers' care time is much as anticipated: increases in the pre-school provision reduce mother's care input in most of our sub-groups of children as well as for the whole sample. The largest decline in mothers' care time input is likely to happen to babies, children with a non-working mother educated to a low level, to children without a father in the household, and to children in poverty.

Overall, we see that good availability of places does not reduce or crowd out parental leisure or play time with children. We will pick up on this 'spill over effect' when we discuss the policy implications later on. Of particular interest to our model is that the level of parental education plays some mediating role between the situation in the public provision of child and individual parental choices.

6.6 Discussion

Mothers and fathers show a different, gendered response to changes in the macro-economic environment. Mothers experience a larger influence from unemployment rates, while fathers seem to be more influenced by the level of GDP. This difference can be explained if we remember that gender roles in Russia are still quite entrenched and

therefore consider the impact that the macro environment has on individual choice from the perspective of a mother or father.

For mothers, the main question regarding her work environment is whether she works at all or not. For them it is not a given that they will work but rather a choice that is made on the basis of family economics and personal preferences. A change in the unemployment rate will affect the availability of work and therefore becomes part of that decision, as well as other decisions related to her time use.

The situation is different for fathers. Men in Russia are universally expected to be working and being unemployed is an exception – a shock in our modelling – that needs to be overcome. Thus, as long as the father is still in employment, his main focus will be on how the enterprise or company he is working for is doing, i.e. whether it is able to pay his wages, what his career opportunities are, etc. These questions are influenced by the general level of output in the region, hence making this measure more meaningful for the father.

Our analysis has shown that in the majority of situations the higher regional unemployment rate or the lower regional gross output, the lower parents' contribution to activities with children. This would mean that the income effect where competing demands on parents' time lead to trade-offs, prevails over the substitution effect. The general exception to this is in regard to a mother's care. Her individual perception of the situation could depend on many factors including the global nature of the financial crises, the information campaign by the government about rapid anti-crisis measures and other factors. Without controlling for subjective well-being indicators it is difficult to quantify the role of perception as a transmitter of final change but at least we can confirm its role in our model.

A mother's perception of her respectability in aggregate numbers declines over the recession period and this in turns influences her time with her children. The change in her self-efficacy is found to be a significant predictor of her leisure time while also making the prediction of the regional unemployment rate stronger. Therefore, we can also con-

firm that self-efficacy is one of the intermediary channels between a mother's parenting and her labour market situation. As the barriers to labour market entry increase during a recession, women who have children might downgrade their chances of gaining a job they want or of progressing professionally, which in turn takes its toll on their self-belief and self-confidence as a professional, individual, or as a parent.

Mothers' and fathers' time allocation decisions during the recession, and the channels through which macro-level changes influence daily behaviour in our sample, once again reflect the traditional division of responsibilities in the average Russian family, with the mother as a primary child minder and the father as a breadwinner who has to secure a stable family income. This in turn predetermines the elasticity of their time allocation decisions under aggregate shocks, which is especially notable in the care inputs to children. Mothers' care responsibilities seem to be fixed in the short term while fathers' are rolled back with the increased need to sustain material wealth. In poor households, mothers can even increase their care contribution.

Among the biggest 'losers' of leisure time with their mother are children in poverty, who experience the largest reduction in a mother's leisure time contribution due to the worsening socio-economic conditions. This change due to macro-level shocks further worsens an already weak position. The magnitude of this effect varies by the work status of mothers, with the reduction larger for mothers who are not employed. One explanation could be that non-working mothers are hard pressed by other home production activities or they are to a greater extent affected psychologically, which affects their parental practices. This will be explored further in our next chapter and is something that further studies will be necessary for.

The effects found for mothers' play and fathers' care input are understandably small in magnitude. However, as we argued earlier, the real and more accurate prediction depends on the extent of the aggregate shocks in specific Russian regions. Generally speaking, the size of the coefficients for the general sample is comparable to those reported in other studies on aggregate unemployment and time allocation

Generally, our analysis convincingly shows the importance of the accessibility of pre-school provision in the area on parents' time allocation decisions. We find on average a positive effect of pre-school education on parental time allocations. The only exception is mother's care, for which formal care understandably works as a direct substitution. A possible explanation of the observed influence could be a positive spill over effect resulting from parents' increased communication with the pre-school institution, the wider availability of information to parents and the need to support the child in his or her prospective new social and educational environment. Early pre-school provision and early education interventions such as Head Start in the US and Sure Start in the UK have traditionally been seen as a tool to address educational inequalities and provide better chances for children from low-income backgrounds. The Russian context is different as it still has highly subsidised childcare provision. Low-income families have increasing difficulties in accessing these facilities due to the affordability of fixed fees but also due to a lack of places in the vicinity of their homes (Abankina, et al., 2011). Our analysis reinforces this as a policy concern, since we have shown that these children can benefit not only from a stimulating educational environment but also from the extra attention given to them by their parents.

Conclusions

The main goal of this chapter was to investigate whether economic stress, measured through macro-level shocks and changes in policy related to childcare provision, affect the status quo in regard to the attention and care children receive from their parents. It also intended to identify the groups of children who are more likely to win or lose in terms of parental human investment during this time.

Overall, our results indicate that parental time allocation can be sensitive to aggregate shocks in the economy. Although parents' attachment to the labour market – i.e. their concern about gaining or losing a job – is a strong transmitting channel of macro-level shocks, the parental response will also depend on many other factors, including the elasticity of demand for this activity, parents' gender, and – crucially – the level of existing

material resources. The results are in line with our expectation of a heterogeneous response as predicted by our framework and underlined at the beginning of this chapter.

We find that in a recession Russian children are likely to receive reduced care input from the father regardless of his work status. This implies that a recession is a time when all fathers in Russia are likely to shift their priorities and have to reallocate time away from their already small care contribution. Given the father's traditional breadwinner role in Russia, this shift is likely to be related to his income-generating activities.

Importantly, we find that children in poverty are one of the groups most affected by the changes during this time. We know already from our previous chapters that children experiencing poverty are likely to have lower than average parental time inputs. This chapter indicates that an economic downturn is a time when these children also disproportionately lose out on interaction with their parents. This draws attention to the compensatory role of educational institutions, particularly early childhood programmes, within the public pre-school provision in Russia. Their positive and direct influence on parental behaviour and specifically on the time devoted to leisure with children is confirmed by our study.

There are children who lose out in regard to the amount of parents' attention but there are also those who benefit from additional input. Due to the significant differences in people's economic situations during a recession across the Russian regions it would be wrong to generalise our results to all Russian children, even within specific sub-groups. However, the contribution of our analysis is in identifying the direction and magnitude of the effect of key socio-economic indicators. This means it is quite possible to project a likely effect for a particular group of children in a specific region which experienced a stagnation, fall or increase in economic activity or unemployment.

The key message of this chapter is that the cumulative stress of adverse macro-economic conditions and depleted material resources make it difficult for parents to sustain their desired long-term equilibrium of time devoted to children. The detrimental

effect on those children can be smoothed by reducing the barriers of access to quality pre-school provisions.

Chapter 7

Time for Play? Parental Response to Idiosyncratic Shocks

At one point or another, every family can experience idiosyncratic shocks, thus facing a drastic fall in family income. For some it is a life-changing experience, the start of a road to hardship, emotional breakdown and a fall in social standing. For others it is a transitory event that shakes rather than breaks their permanent welfare pattern. The economic literature describes idiosyncratic shocks as household- or individual-level events (unemployment, loss of breadwinner, injury, etc.) that result in high income volatility. In other words, shocks are risks that affect a family's regular pattern of consumption imposed by those events (Townsend, 1994). The outcome for family welfare largely depends on the combination of their existing resources, the available formal and informal insurance and the access to the developed credit markets (Dercon, 2002). The outcome for children will likely depend on a disrupted family process (Yeung & Hofferth, 1998) or, as literature from developing countries has shown (Beegle, et al., 2005; Dehejia & Gatti, 2005), on setting the current household welfare priorities over a child's ongoing human development needs.

How Russian parents are able to mitigate income risk today while maintaining the status quo in regard to their childcare responsibilities and to their child's human development is less clear. There is little empirical evidence on parental time allocation under income shocks to draw upon when making our predictions. The only work, to our knowledge, which attempted to look at the change in parental time allocation under idiosyncratic shocks was by Ginja (2010). However, in this work shocks were examined through local business cycle movements, an instrument of the macro-level changes similar to the one we used in the last chapter, rather than micro-level events. The general vulnerability

of children in Russia to the risks of poverty (IISP & UNICEF, 2011) indicates that around one in five children experience some financial strain in the family at some point in time. However, the extent to which children are protected, compensated or affected by income fluctuations within the family largely remains open for investigation. This empirical analysis is based on two questions:

- How do parents respond to the idiosyncratic shocks in the household, which result in significant contraction of financial resources?
- To what extent do parents' subjective perceptions and coping strategies facilitate this process?

If cash availability or the lack of it affects parental behaviour, and to a greater degree low-income families, this would raise important policy questions surrounding self-insurance mechanisms as well as strengthening formal support for parents and children at times of crisis. Learning whether the change happens and what factors mediate it would help to identify the barriers or facilitators of parents' capacity to mitigate risks alongside their parental responsibility.

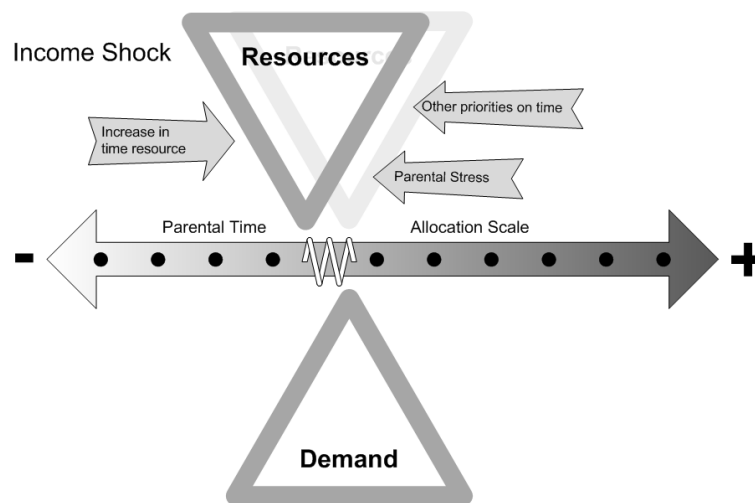


Figure 7.1: Effect of Idiosyncratic Shock in the PTE Model

This chapter is a further step in examining parental response to shocks using the dynamic perspective presented in the previous chapter. Specifically, we: a) empirically test constructed measures of idiosyncratic shocks (namely, income fall, expenditure fall, in-

voluntary unemployment and subjective evaluation of financial situation in the family); and b) account for possible mediating mechanisms between an idiosyncratic shock and parental practices, which are indicators of subjective well-being and coping strategies in the fixed effects models.

The chapter is structured as follows: firstly, we point to the vulnerability of low-income families to idiosyncratic shocks in Russia in the years 2007–2009, highlighting the changes in household consumption behaviour after a decade of economic prosperity. Secondly, we discuss theoretical issues, empirical strategy and measurements. Thirdly, we evaluate income, expenditure, labour market, and subjective data from our sample as possible measures of the immediate financial strain experienced by households in the full sample of children and sub-sample of children from low-income households. Fourthly, we present the empirical results in a block-wise progression and discuss the key findings. Finally, we conclude with a summary and key messages.

7.1 Vulnerability of Russian Children to Idiosyncratic Shocks

Russia during the period of the 1998 financial crisis, following a decade of hardship in transition, was a fertile ground for scholars to examine households' vulnerability to shocks and their consumption-smoothing strategies. Academic interest was supported by the availability of panel data (i.e. the RLMS) allowing individual- and household-level analysis within a dramatic socio-economic context. So, how different was the response of Russian families to idiosyncratic shocks in 2009 compared to a decade ago? To identify the trend we need first to understand what has happened in regard to the labour market at the individual and household level during this time. Unemployment spells, gender differentiations, and the prevailing structure of job losses would indicate the possible socio-economic strata most likely to be affected by idiosyncratic shocks in 2009 and the extent to which families with children were affected.

The 'male character' of the most affected industries during recessions – such as the manufacturing, construction, and steel industries – helps to explain the 10% gender differentiation in individual unemployment rates (55% are men and 45% are women out of

the total number of unemployed). Despite their lower prevalence of unemployment, it took on average almost one month longer for a woman to find a job in December of 2009 than for men (8.5 months compared to 7.6) (FSSS, 2011). Moreover, given the entrenched problem of the occupational segregation of women in low paid jobs for which they are overqualified (Klimova, 2012), the recession was likely to make women redundant before men. The typical areas of their work – services and administration within big industrial enterprises – make it very plausible.

Our own data is generally in line with these trends. Table 7.1 shows that, on average, more mothers lost their jobs and fewer gained employment in 2009 compared to 2008: around 0.2% more lost a job and by 1% fewer gained one. Fathers on average had higher labour market mobility, with a larger share of them losing a job in 2009 (86% compared to 88% in 2008) but also with more finding a new placement (5.5% in 2009 compared to 4.5% in 2008). So, fathers were statistically more likely to lose their job during this time, but mothers' prospects for a job were likely to be affected in the long run. The higher mobility on the part of fathers is probably explained by the structure of the affected industries and their focus on job searching and the labour market.

Table 7.1: Work Status Dynamics among Mothers and Fathers, 2007–2009

Change in work status since the previous year	Mothers		Fathers	
	2008	2009	2008	2009
Lost a job	5.2%	5.4%	6.1%	6.6%
No change	81.9%	82.7%	89.4%	87.9%
Gained employment (as the primary job)	12.9%	11.9%	4.5%	5.5%
Total	100.0%	100.0%	100.0%	100.0%

The rural–urban dynamics of unemployment also reflect the nature of the affected industries. Before the crisis, rural unemployment was 1.8 times higher than in urban areas but from 2008 to 2009 the growth in unemployment was predominantly urban, at 40% compared to just 22% among the rural population (FSSS, 2011). As a result, the disparities between labour market opportunities among rural and urban families were somewhat smoothed during this short period. The affected individuals were predominantly of mature working age: in 2010, the highest level of unemployment (86.9%) was among

40–44 year olds irrespective of gender (FSSS, 2011). This points towards individuals who are likely to be in already formed households with children. Among them, the most affected groups in terms of vulnerability to poverty during the 2008–2009 recession were families with more than three children and families with children aged one and two (Pishnyak & Popova, 2011).

A long period of continuous growth provided individuals and families in Russia with conditions to improve their risk-management capacity so that events such as redundancy, closure of businesses, or unpaid leave could be countered better by smoothing consumption. According to the official statistics (FSSS, 2011), the real average wages and income per head nearly tripled over the six-year period from 1999: the former increased by 291% and the latter by 280%. A dramatic increase in the standard of living helped people to maintain a positive outlook and underpinned general satisfaction with the incomes and situation in the country (O'Brien, et al., 2011; Petukhov, 2007).

Diversification of income also plays an important role in smoothing consumption (Dercon, 2007) and here the position of Russian families on average was also stronger than a decade before. The structure of income had changed by 2006: there was a three-fold increase in the share of income from business enterprises and property assets compared to 1992. Major changes had also happened in the development of credit markets: in 2007, every eighth family was saving money as well as borrowing within formal institutions, one quarter of households had only savings, and one quarter only had credit. 40% of the population claimed to have neither savings nor credit. So, an increase in the standard of living, diversification of income sources and more developed credit markets stimulated on average better conditions for individuals and families to face idiosyncratic risks.

Yet the benefits of these generally favourable conditions were not equally distributed among the population. The lack of flexibility in the credit markets is probably what explains the high differentiation in access to credit. According to Ibragimova (2011), the households in the highest two income quintiles apply for credit more often than other income groups while low-income and rural families are highly likely to be among those

40% of the population without either savings or credit. Thus, it appears that low-income households in Russia are not taking advantage of the better developed credit market. Their inability, along with possible reluctance, to get access to formal credit limits their risk-management resources to some minimal savings and informal transfers.

Our data (Table 7.2) indicates that the low-income first quintile was more than ten times more likely to experience an income shock of any origin than any other group in 2007, and around seven times more likely in 2008. In 2009, with a high incidence of income shocks among the second lowest income quintile as well, the lowest quintile still exceeded the second lowest by over three times, and was 32 times more likely to suffer an income shock than the richest quintile. The relative risks of this group are seen consistently over the years. This suggests that, even during a non-recession period, the vulnerability of children from the first quintile to income fluctuations is higher than any other group.

Table 7.2: Percentage of Children in Different Income Quintiles Living in Households with Experience of Income Shock by Year

Income groups	2007	2008	2009
I quintile (low income)	13.5%	6.7%	22.9%
II quintile	1.5%	0.9%	6.9%
III quintile	0.2%	0.2%	4.0%
IV quintile	1.0%	0.0%	2.0%
V quintile	0.2%	0.0%	0.7%

*Here income shock is measured as a 60% fall in total household income in that year (adjusted for inflation). Estimation is based on the RLMS data.

During the recent crises, the Russian government implemented a number of social anti-crisis programmes particularly targeted at affected industries and individuals. For example, the maximum amount of unemployment benefits was increased by 50%, additional regional programmes of retraining were introduced, temporary public works were set up, assistance with relocation was provided, and support to start-up businesses totalling 25 billion Roubles were widely implemented by regional governments, along with other measures to stabilise the labour market (OECD, 2011a). The scale of social support to affected industries and individuals far exceeded the government safety net provi-

sions seen during the previous crises. A simulation analysis conducted by the Independent Institute of Social Policy based on a family with two working parents and one child aged 0–1.5 showed that, in cases where one of the parents involuntarily lost their job, the real income of the household decreases by 65% but without social transfers would amount to almost 82% (IISP & UNICEF, 2011). So, while anti-crisis social measures helped to smooth consumption among low-income families, it was not able to fully compensate their losses. This is confirmed by the OECD's analysis (2011a) indicating that anti-crisis transfers did not fulfil their social security function, thus leaving many families with children potentially very vulnerable.

The literature indicates that factors such as unemployment and increased material risk are associated with poorer adult psychological health in developed countries (Friedman & Sturdy, 2011). A UK study found that indebtedness is a greater predictor of depression and anxiety than low income per se (Jenkins, et al., 2009). Although the perceived low respect from others might not be directly indicative of stress, it might reflect a mother's low personal efficacy and low belief in her competencies as a parent, as a professional, or individual. This is identified in the literature as one of the many sources of influences on parental decisions on involvement in children's education (Hoover-Dempsey & Sandler, 1997). High prices, anticipation of a worse time to come and low chances of personal success can all have an emotional or psychological effect on mothers who perceive themselves as not being capable of coping with the current situation. This in turn seems to influence mothers' parental involvement.

So, despite the improved standards of living, more developed credit markets and some anti-crisis social transfer programmes implemented by the government, Russian children from low-income families are likely to face idiosyncratic events today just as they were a decade ago.

7.2 Analytical Framework and Empirical Strategy

As before, this analysis is based on data from three rounds (2007, 2008, and 2009) of the RLMS. There were 2,072 children in Round 16 (2007), 2,164 in Round 17 (2008)

and 2,032 in Round 18 (2009), giving total observations of 4,318 children in the pooled full sample. We use an unbalanced panel to avoid selectivity bias by excluding those who dropped out of the survey due to reasons other than age progression, although given that the RLMS does not have a high attrition rate³⁵ these numbers are likely to be small. We use child-, parent- and household-level data, as well as some macro-level data based on national statistics as discussed earlier.

The PTE framework presented in Chapter 3 made a very simple testable proposition that economic stress measured through an individual-level shock to family finances distorts the established parental time allocation equilibrium but the effect is mediated by existing pre-crisis resources, subjective well-being of parents and external demands on time (coping strategies). This is generally the scope of the analysis of this chapter. We elaborate on our hypothesis below.

In line with our theoretical discussion in the previous chapter, the classical time allocation theory predicts that the shock to income caused, for example, by the reduced work hours of one of the parents means a lower opportunity cost of time for this parent and therefore his or her possible reallocation of time to home production rather than to market-purchased goods. When a shock is measured through a contraction in household expenditure, we can still anticipate that the underlying cause was the loss of household income received through wages and complementary transfers. The sharp drop in expenditure also means that the family was not able to fully smooth its consumption, having to cover the loss of income through credit mechanisms, inter-family transfers, savings or any other additional income. Holding the work status constant, we can sensibly assume that time became more available to parents. Our assumption is that parents operate within a constrained set of demands for childcare at certain points of a child's life and they have to meet their own expectations and the child's need for care within this short period of time.

Our first hypothesis is that the parental time allocation response to idiosyncratic shock will depend on the general level of existing, pre-crisis resources. This definition of re-

³⁵ This is discussed in Chapter 4.

sources is close to McCubbin and Patterson's double ABC-X family stress model (1982). Low-income families have what we called earlier in chapters 4 and 5 depleted resources: they live on low wages and possess no productive assets such as an allotment or car, which, for example, would enable them to search for a job in a different locality. As we also referred to earlier in this chapter (Ibragimova, 2011), low-income families in Russia can also have limited access to credit markets and have no savings. Among other well-known problems for low-income families is information asymmetry, i.e. inadequate information on the opportunities and risks, and an inability to enforce contracts (Alderman & Paxson, 1992). Thus, low-income parents in Russia with poor material, human and community resources (such as infrastructure, information network, etc.) are likely to face greater material, psychological and time pressures to sustain the status quo, in excess of other income groups.

Our second hypothesis deals with explaining how greater vulnerability to income shocks among low-income households corresponds to parental time input. The greater role here belongs to the level of subjective well-being and perceptions of events among these parents. While the permanent income hypothesis (Friedman, 1957), which was presented in Chapter 2, highlighted the role of perceptions in general individual and household response to income risks, the family stress model (Hill, 1949; McLoyd, 1990; Weber, 2011) explains why parents – even when they have more time – might not fully devote it to their children. Financial difficulties or financial strain have an adverse effect on parents' emotions, behaviours, and relationships (Friedman & Sturdy, 2011), which in turn affects their parenting practices. Thus, parents might be harsh or inconsistent, express less affection or be relatively uninvolved (Conger, 2005). According to economic stress theory, it is not the absolute levels of income and economic resources but the subjective perception of this deficiency that significantly affects parental response and behavioural adjustments. The increased economic pressure is associated with worsened psychological well-being (i.e. mental health and increased levels of parental conflict). Parental depression and increased intra-marital conflict leads to more punitive and/or less involved parenting, which in turn affects children (Barnett, 2008).

The third hypothesis stems from the proposition that low-income households experience demands for their time not only from increased home production (in an attempt to substitute market-produced goods with home-produced ones) but also from a need to diversify their sources of income (Dercon, 2002), to smooth income shortages, take up additional formal or informal jobs or start new subsistence agriculture projects. According to the recent OECD assessment of the Russian labour market (2011a), to cope with low wages 4% of the population has held multiple jobs, with almost 16% in 2007 (FSSS, 2011) engaged in subsistence farming. Our own data indicates that twice as many children living in poverty have a mother and father raising something on the plot to sell or trade than those who are not poor. The extra time resources required for these activities might directly compete with time devoted to children, moderating parental response to shocks.

Our model of idiosyncratic shocks is an extension of the analysis conducted in the previous chapter on the effects of the macro-economic environment, and we now test various empirically selected measures of idiosyncratic shocks as main predictors. Given that our interest is in the change or adjustment within one family and particular child we proceed with the standard fixed regression model as it allows for unbiased estimates of error terms even in the presence of unobserved heterogeneity. The alternative Difference in Difference estimator (DID) estimator was considered but the continuous nature of our key predictors such as income and expenditure with an arbitrary selected cut-off point presents challenges for the type of comparison DID means to estimate. Tests on real data sets using fixed effects and DID estimations show that they produce the same results (Brüdel, 2005).

We chose the sub-group of children based on the quintile income distribution due to its conventional use in the literature but also due to its wider representation of the working population of parents compared to the group of children in poverty. For example, the lowest quintile of children have 44% working mothers and 73% working fathers compared to 38% and 68% of those in poverty. The selected sub-group captures more chil-

dren who are at risk of unstable family income but perhaps fewer characteristics associated with persistent poverty.

Dependent Variables

As discussed in the previous chapter, the complexity of time allocation strategies in childcare and leisure with children call for disaggregation of parental time by gender and types of activity. As confirmed by the macro-level analysis, such disaggregation is important even when we look at the changes from the child's perspective.

Key predictors: we construct alternative measures of idiosyncratic shocks using individual- and household-level data on income, expenditure, labour market participation and subjective evaluation of financial strain. Based on examination of their dynamics and linkages we chose an expenditure fall of 60% or more in year t1 compared to year t0 as the main predictor. We also test alternative models using the father's involuntary unemployment as the closest instrument to a 'material shock', recognising its narrow definition of idiosyncratic events.

Controls and moderators: we control for individual child characteristics, including age groups, number of siblings and health problems in the last 30 days, as has been presented in earlier chapters.

Individual parents' characteristics include the following subjective well-being indicators:

Subjective indicators of self-efficacy, social exclusion and economic well-being: mother's self-ranked respect, father's self-ranked power³⁶; and

Subjective indicators of the current economic situation: satisfaction with economic situation at present.

Indicators of expectations for the future: concerns about getting necessities for the future and expectation of living better or worse in the next 12 months.³⁷

³⁶ Due to collinearity, this variable was omitted from the final model.

Economists are often sceptical on the use of subjective indicators in modelling things such as welfare outcomes due to concerns over the structure of measurement errors and the way unobserved psychological factors affect individual responses (Ravallion & Lokshin, 2000). Questions are raised in the literature about the reliability of subjective data in some datasets given the high variability in responses, but also about the noise it provides in the modelling. Specifically, its errors are likely to be correlated with other explanatory variables of interest, as argued by Bertrand and Mullainathan (2001). ‘*That does not mean that regressions are useless*’, argues Ravallion, but “*Biases can never be ruled out*’ (2012, p. 16). Panel analysis is thought to be the most appropriate way to include such variables in the model. It allows us to control for latent characteristics as well as to have more robust checks. We are confident in the quality of our subjective data as it was used in the above mentioned scholarly works, but we do recognise the challenges it brings to our analysis.

Due to the high correlations between some of the variables within each selected group, some of them were used in alternative models and selected based on their influence and value for the final model.

Mothers’ and fathers’ *coping strategies* include: Taking on an extra job, growing something on a plot to sell or trade, raising animals for sale, performing services for pay, and looking for a job.

We control for the father’s work status in the mother’s model. This is assumed to be exogenous to expenditure shocks since there are might be various reasons for cutting back on household expenditure. We also control for change in household characteristics such as living space per head, type of settlement including metropolitan areas, and the presence of grandmothers and elder siblings in the households. We also control for the total hours of external care received by a child including formal care and any help from relatives or friends. Among community characteristics, we control for the change in access to pre-school places in the locality and RGP. We also control for a year dummy to account for any unobserved effects in that particular year.

³⁷ Due to collinearity, this variable was omitted from the final model.

Constructing and Evaluating the Measure of Financial Strain

Our first step is to examine income and expenditure dynamics in our sample households over the period 2006–2009. Figure 7.1 presents both indicators adjusted to family composition and inflation. Previous studies on consumption smoothing in Russia before and during the 1998 crisis (Skoufias, 2003; Gerry & Carmen, 2007) generally find that expenditure can follow a smoother line than income but households are not able to fully insure some of their consumption from income shocks. Thus, Skoufias (2003) finds that while mean consumption is generally higher than income by 16–32% from 1994 to 1998, food expenditure is relatively well insured from income shocks, thus indicating that families are able to smooth their food consumption using various means. In other words, consumption does not drop as dramatically as income during a material crisis. In contrast, non-food consumption is not fully smoothed.

More than a decade later and in a more specific sample of households with children we see on average little difference between mean income and expenditure trajectories in the pre-crisis years. In general, we can say that those families lived within their means. Another possible explanation of convergence of income and expenditure could be a flat tax rate of 13% which, when introduced in 2001, was specifically aimed at reducing the shadow economy and unreported incomes and meant that improvements in the income data followed. In 2008, we see a departure from the trend when expenditure and consumption on the part of households grew slightly faster than income. The examined period here represents the peak of economic growth, when real incomes grew continuously for seven consecutive years. Continuous economic prosperity and raising wages could contribute to a ‘feel good’ effect, which in turn would translate into higher spending and consumption in 2008 than previously observed. At the same time, the fear of inflation and devaluation of the Rouble experienced during the crisis of 1998 could also have pushed many families in 2008 to make purchases that were planned for a later date.

According to our sample, in 2009 household consumption (expenditure) contracted more sharply than income, by 41.4% compared to only 27.7% for the latter. This indi-

cates that consumption either voluntarily (saving) or involuntarily (cutting out necessities) was squeezed in many households with children. This is in line with the findings of the study on the consumption and borrowing strategies of Russian households (Ibragimova, 2011), in that at the time of growing wages just before the crisis the observed trend was towards more spending and borrowing. When wages began to slow down, more Russian households expressed a desire to save.

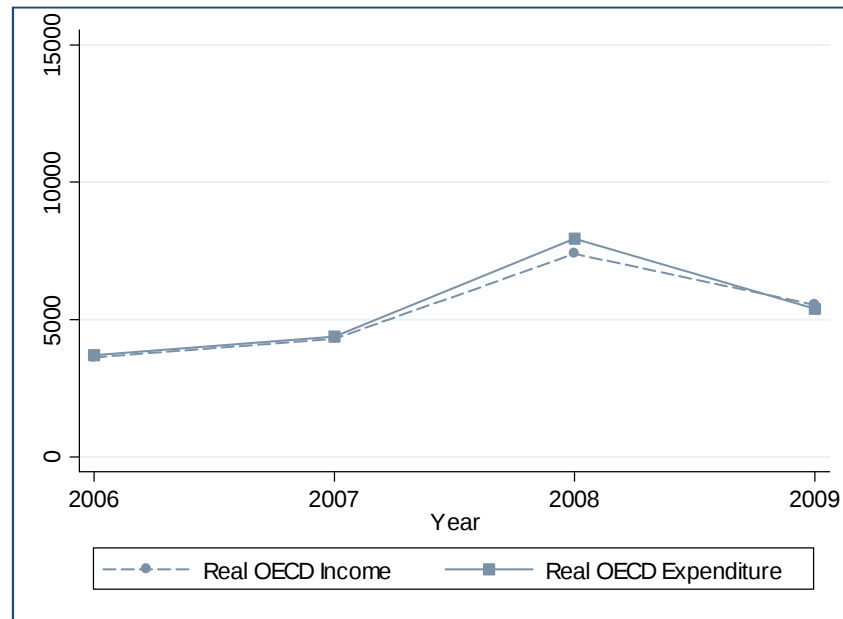


Figure 7.2: Real Income and Expenditure (scaled by OECD equality scale)

Another way to look at the income and consumption dynamics is through the distribution among income groups. Figure 7.2 presents this distribution, focusing on the pre-recession (2007–2008) and the peak of the recession in 2009. We see that income and consumption were very close in the three middle-income quintiles of families with children, while the wealthiest 5th quintile and the poorest quintile had the biggest gap: in the wealthiest group income exceeds expenditure, while in the low-income group consumption noticeably exceeds the reported total household income. This could be due to two reasons: either the low-income group is highly indebted or the reported income does not reflect all the possible sources of support to the family, such as reciprocity gifts and small monetary transfers from parents or other informal activities. Given what we already know from the general trends in credit and borrowing behaviour of low-income

Russian households (Ibragimova, 2011), it is reasonable to suggest that for this particular group the total income data is somewhat underreported.

Another important observation from this graph is that the monetary shock of 2009 was felt the sharpest in the wealthiest group of households while the changes in the poorest income group were much smoother, with income remaining relatively flat over the period and expenditure contracting but to a lesser degree than in the top two groups. So, while income inequalities between the groups were generally sustained over this period, low-income families with children seem to have less fluctuation in income in absolute terms. Increased government transfers and the structural nature of this recession could be some of the reasons for this trend. Despite that, as with all the others they had to reduce their expenditures and for them this would mean cutting back on necessities.

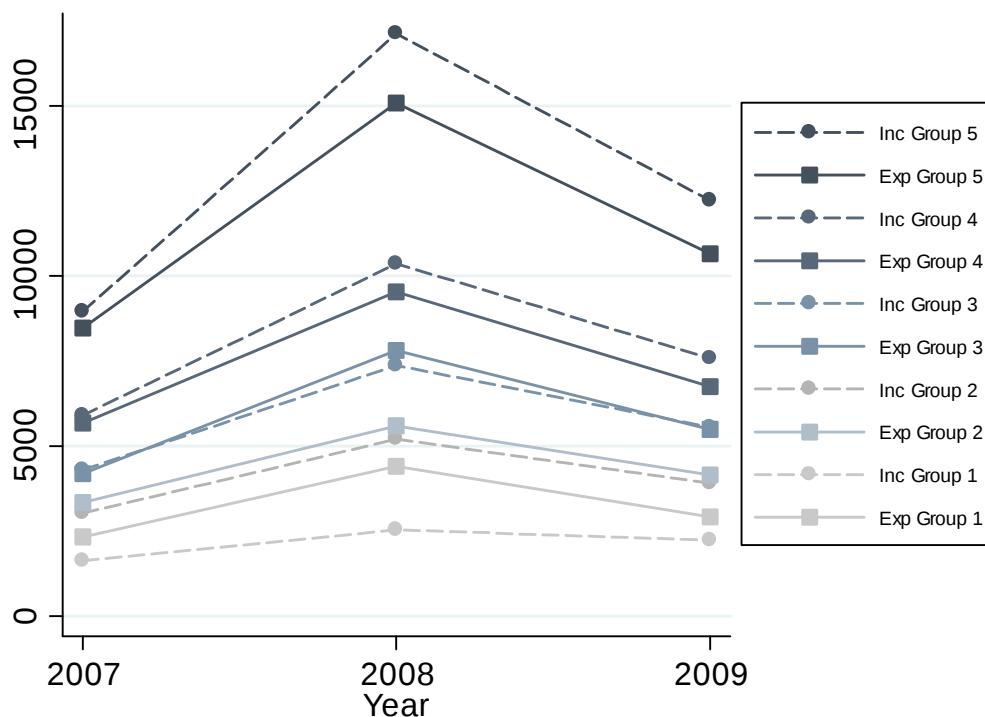


Figure 7.3: Real Median Income and Expenditure by Income Group

Our next step is to examine the distribution of income and expenditure as a change to the previous year in percentage terms. In other words, we investigate how many of our sample households with children experienced negative or positive income and consumption changes over the three-year period, from 2007 to 2008 and from 2008 to

2009. The top two charts in Figure 7.4 show a red line as a zero or ‘no change’ threshold. It is very indicative of 2009 as a ‘shock’ year: in 2008, a majority of households had an increase in income while in 2009 the majority experienced a negative change. A very similar but perhaps more pronounced picture is that presented on expenditure. The fact that the majority of people experienced a negative income and consumption change in 2009 and that we see a relatively even distribution of change makes the task of setting a ‘shock’ threshold very difficult.



Figure 7.4: Distribution of Income and Expenditure Change in 2008 and 2009

Despite excluding extreme outliers in the income and expenditure index, the positive tail of the distributions in 2009 is substantial, which indicates that the median is a better measure here. A sensitivity analysis based on the grouping by 10% change at a time indicates that setting a threshold at a 60% negative change in mean income and expenditure compared to the previous year defines a meaningful cut-off point for forming a group experiencing above-average financial strain in that year.

Another definition of ‘idiosyncratic shock’ could be based on parents’ loss of employment. We believe that in the case of Russia this has to account for hidden unemployment. It is a somewhat different measure from an income or expenditure shock since it narrows the reasons for possible material difficulties. In other words, labour market participation is one – but not necessarily the only – possible channel of idiosyncratic material shocks in the family, suggesting a direct influence on the overall time budget of the affected parent. At the same time, the loss of employment might not impose an income shock if the family has insured itself from it and/or if other family members continue working. In order to understand how reflective involuntary unemployment is of a real negative material change, we test against income dynamics over the examined period.

The variable ‘involuntarily lost job’ is constructed in the following way: first, from the question on when (year and month) the respondent lost their job or stopped working we select only those who did this in the last year; then, we further filter this group by selecting those who did so by affirming one of the following points: ‘you were laid off or the enterprise closed’; ‘your contract came to an end’; ‘you were laid off due to some other reasons’; ‘due to health condition’; and ‘you liquidated or sold your own enterprise or business’. Separately, we constructed a variable on ‘hidden unemployment’, which is the sub-sample of parents who reported an involuntary reduction in salary or work hours in the last 12 months or were sent on involuntary unpaid leave. Thirdly, we constructed another dummy variable which combines the former two: formal and hidden unemployment. We test them below.

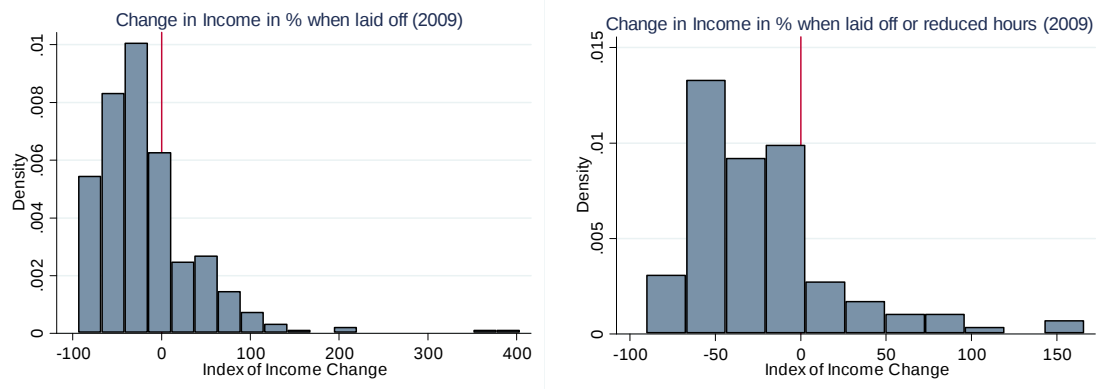


Figure 7.5: Change in Household Income When Father Lost Job, Reduced Hours, or Sent on Unpaid Leave

Figure 7.5 shows the change in household income in a year of reduced labour market participation. For illustrative purposes, we show only the change in household income due to the father's unemployment. The left-hand distribution shows income change when accounting for only formal unemployment. The right-hand distribution shows income change in households in which the father experiences either formal unemployment or any type of hidden unemployment. Interestingly, we see that not all households which had a 'labour market shock' have a negative change in income. Particularly when we look at formal unemployment exclusively (left-hand diagram), we see that there are households with a substantial increase in income under such circumstances. This could happen for a number of reasons including the labour market participation of the second earner in the family, state unemployment benefits, income-generating informal activities or other inter-family transfers. Accounting for hidden unemployment catches a wider range of individual circumstances, thus improving the accuracy of distribution. Yet we still see that positive income change is happening in this wider sub-sample.

Finally, the subjective evaluation of changes in household finances is another alternative measure of idiosyncratic shocks which could be a reflection of true material pressures. We examine the responses to the question of whether the financial situation in the family changed in the last 12 months, with a specific focus on those who said that the financial situation became "worse" or "significantly worse". We test the extent to which subjective responses reflect the observed income change in that family.

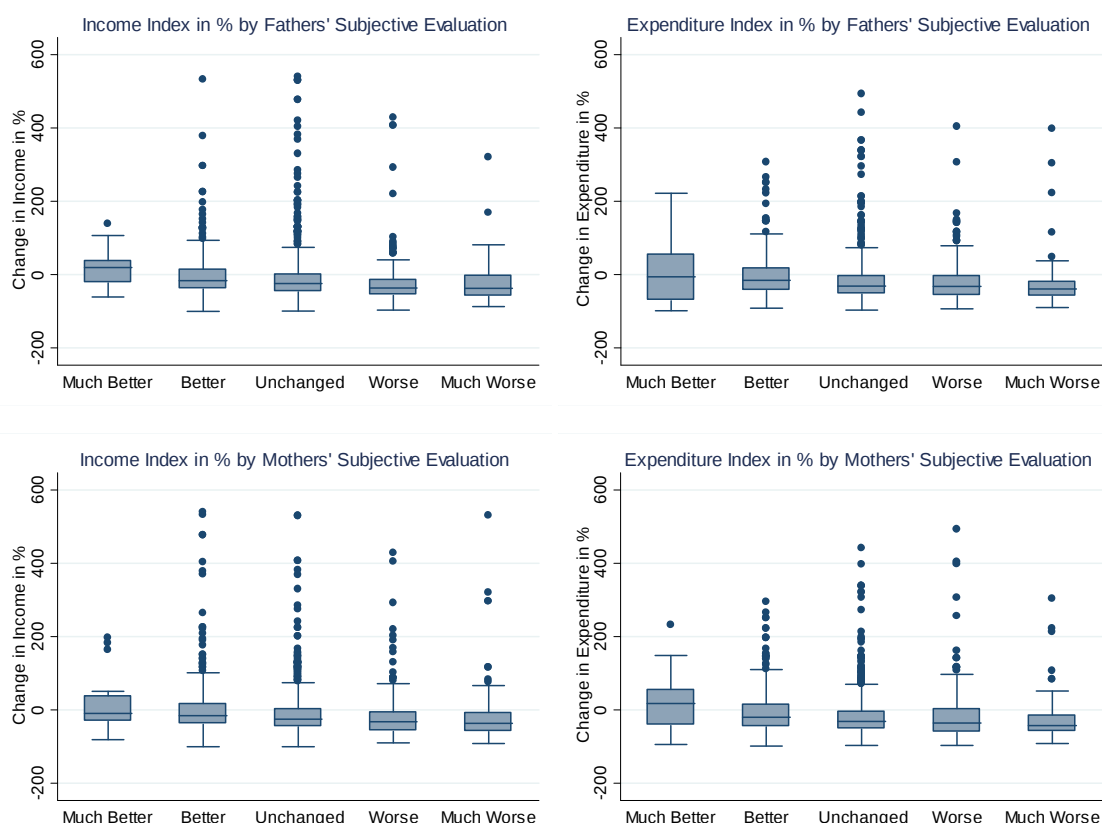


Figure 7.6: Income Change in 2009 by Parents' Subjective Evaluation of Material Situation

Figure 7.6 presents income change by fathers' (top two) and mothers' (bottom two) responses. We see that there is some clear positive association between income levels in the household and how well parents evaluate their finances. Yet, there are a number of outliers in each group. We see that not everyone who experienced a real decline in income or expenditures evaluates their financial situation as worsened or significantly worsened. There is a wide variation within each group, but the majority of those who responded "worse" and "much worse" are clearly below the zero threshold (under negative income) by a good margin.

Table 7.3 shows that half of the households (median) in which the father evaluates the situation as 'much worse' in fact experienced a decline in income of over 37% and expenditure of 39%. Mothers' evaluations generally seem to be more positive, for example half of the households in which mother responded 'much better' had a decline of 9.2% in income.

Table 7.3: Percentage Change in Median Income and Expenditure by Father's Subjective Assessment

Self-Evaluation	Median Income Change (%)	Median Expenditure Change (%)
Much Better	19.4	-3.1
Better	-16.3	-14.9
Unchanged	-24.4	-31.4
Worse	-36.5	-31.9
Much Worse	-37.4	-39.1

Interestingly, fathers' responses are a better indication of the true income situation while mothers' responses much better reflect the true expenditure situation. It is likely that mothers have better control of spending or of the consumption budget and this gives them a 'feel good' effect, while fathers have more control over and awareness of income flow, which directly translates into their evaluation of the material situation.

Table 7.4: Percentage Change in Median Income and Expenditure by Mother's Subjective Assessment

Self-Evaluation	Median Income Change (%)	Median Expenditure Change (%)
Much Better	-9.2	18.3
Better	-14.6	-19.1
Unchanged	-25.0	-30.8
Worse	-32.2	-35.5
Much Worse	-36.3	-42.2

Overall, parents seem to be more optimistic on their material situation, as indicated by comparing their subjective evaluation with the true household income and expenditure data. This can be due to the fact that, in an evaluation of the current financial situation, parents take into account many other factors along with the current income and expenditures, including previous income history or what economists call their 'permanent income'. A big role in this could be played by the availability of risk-protection arrangements, including other sources of wealth such as rental income, assets, and ability to draw from savings or receive help from relatives. Being able to draw on those in a time of need changes a parent's perception of events and their general outlook. At the same time, many previous studies indicate that measuring welfare subjectively is a very complex task. For example, based on RLMS data Ravallion and Lokshin (2002, p. 1471)

find that the match between household income and subjective welfare rankings is very weak and '*self-rated welfare appears to be measuring very different things to even quite broad income based indicators*'. According to their research, doubling income only reduces the subjective poverty ranking by 10%. They conclude that self-perceptions of welfare are influenced by many other factors besides income and are dependent on welfare averaged over longer periods of time. As we see from our own data set, the natural 'smoothing' effect of subjective evaluation of the true material situation can make it a somewhat misleading indicator and the use of it on its own to define financial strain would impose biases or challenges for interpretation. We find it helpful, however, in further descriptive investigation of the targeted group of children and as an additional subjective control in our modelling.

Our next step is to use the subjective evaluation of financial difficulties as an additional filter to other objective measures of economic hardship. The aim is to select the group which has the biggest overlap with the subjective evaluation of 'worse' and 'much worse'. We find that among children who in 2009 lived in households which experienced a decline in income equal to or higher than 50%,³⁸ 139 children also have either mother or father evaluating the financial situation as 'much worse'. Using a similar expenditure measure we find a group of 175 children who have the same overlap of expenditure decline with subjective assessment. Finally, when we cross-tabulate a joint measure of formal and hidden unemployment we get 113 children – the lowest number of the three. This is not surprising as we have already seen that some of the unemployed enjoyed an actual increase in income and/expenditure in that year. Including the subjective category 'worse' is justified by the very similar median results of this group to 'much worse'. In this case, we have 218 children on income and the subjective measure, 255 children on the expenditure measure and 224 on lost employment.

All three objective measures show relatively similar results in absolute numbers but the selected group under each measurement might be somewhat different. Among the three measures there are a few arguments in favour of the expenditure measure. First, it has

³⁸ An arbitrary line based on distribution.

been long argued in the developmental literature that expenditure might be a better indication of well-being as it better reflects all unreported incomes from the shadow economy, which is especially prominent in transitional or emerging economies. While in Russia the extent of this problem today is by no means the same as it used to be in 1998, the underreported income is still an issue. Secondly, in our case, expenditure or household spending is likely to take into account all of the risk-protection arrangements that are in place, including income from informal work, inter-family transfers, availability of savings, access to credit, etc. The family might smooth consumption if it has an ability to draw from those sources and if it considers the shock to be a temporary event. Moreover, expenditure is a broader measure of financial hardship than unemployment since the fall in consumption might include any non-labour market shocks such as divorce or the loss of a breadwinner.

Another issue is that the experience of an idiosyncratic shock in itself as measured through any of the objective indicators discussed above is not an equivalent of material hardship. A family from the top-level or middle-income quintile suffering from a 60% squeeze in income does not necessarily suffer from this loss to the same extent as someone from the low-income quintile. Therefore, we want to investigate the context of general vulnerability and socio-economic characteristics by comparing the group suffering the income shock with those from a full sample and those under persistent material disadvantage.

Descriptive Analysis: Financial Strain and Poverty

How different are those children we identified as living in households with financial strain from children in our full sample and from children in poverty? Tables 7.5 and 7.6 present the mean of the key socio-economic characteristics of these three groups.

The key socio-economic characteristics of the group of children under financial strain are very similar to the full sample of children, in terms of their age groups, number of siblings, parents' education, type of settlement and living conditions, etc. This could indicate that there is little self-selection bias in exposure to idiosyncratic/expenditure

shocks in our sample of children. Perhaps the specific time period of our data falling at the peak of the recession explains the structural reasons for a sudden financial strain on average being likely to prevail over an individual one.

Meanwhile the tables also reveal a striking difference between children in poverty and the two other groups. Particularly, we see that more children in poverty live in rural areas and have lower educated parents than either those experiencing financial strain or our full sample. At the same time, the group with an expenditure shock is much closer to the group in poverty in terms of the percentage of involuntarily unemployed parents than to the average of the whole sample. Clearly then, the labour market experiences of parents in these two groups are similar.

Noticeably, children in households under financial strain more often attend formal childcare institutions and receive care from relatives outside their household than those in the low-income group or in the full sample. This is interesting given this group has fewer working mothers and fathers than the full sample. Another contrast is observed in parents' participation rate in play activities with children between low-income, under shock groups and the full sample: 4% more mothers and 5% more fathers participate in play in the full sample of children compared to the low-income group. For the financial strain group, the corresponding difference is 3% and 3%.

Table 7.5: Summary Statistics (Category and Dummy Variables)

	Full Sam- ple	Financial strain	Low In- come
Age Group			
0-2 (Baby)	22.0	18.4	22.8
3-6 (Kindergarten)	29.3	30.0	27.3
7-10 (Primary School)	26.8	28.5	28.1
11+ (Secondary School)	21.9	23.2	21.8
Health problems in last 30 days	36.8	34.5	32.2
Mothers with professional education	79.8	78.4	64.9
Fathers with professional education	80.6	74.8	71.5
Mother left work involuntarily	4.4	10.0	7.0
Father left work involuntarily	3.9	9.2	9.0
Mother is working	60.0	55.2	45.9
Father is working	86.6	74.3	74.1

Grandparent in the household	29.1	28.8	22.5
Elder sibling in the household	11.3	9.4	11.7
Type of settlement			
Rural	26.9	31.1	45.3
Urban	63.2	62.2	50.9
Metropolis	9.9	6.7	3.8
Mother participated in play	87.8	83.0	82.8
Mother participated in care	79.8	77.9	76.6
Father participated in play	83.6	80.5	78.2
Father participated in care	48.8	49.0	47.0
Formal childcare	60.5	64.2	56.6
Informal Childcare	9.1	11.6	9.8
Care by relatives outside the household	70.2	79.6	73.7

Table 7.6 indicates that low-income children have more siblings and have fewer basic amenities than other groups, which is likely to be related to the type of settlement they live in. As to the hours of parental time input, the group of children under financial strain receive slightly less of their mother's leisure and care time compared to the two other groups. At the same time, however, these children spend slightly more time under formal care arrangements and receive more care from relatives outside their household than is observed in the full sample or in low-income households.

Table 7.6: Summary Statistics (Continuous and Index Variables)

Variable	Full Sample		Expenditure Drop		Low Income	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Number of siblings	0.7	0.8	0.7	0.9	0.9	1.1
Mother's years of schooling	13.4	2.8	13.3	2.7	12.0	2.6
Father's years of schooling	12.6	2.8	12.1	2.7	11.3	2.5
Living space per head	12.5	7.8	11.9	6.7	11.3	6.7
Index of living conditions	3.9	2.1	4.0	2.0	2.9	2.3
Mother's hours of play time	2.9	2.3	2.6	1.9	3.0	2.5
Mother's hours of care time	2.1	1.9	1.9	1.6	2.3	2.0
Father's hours of play time	1.7	1.3	1.7	1.1	1.7	1.3
Father's hours of care time	1.1	0.9	1.3	1.0	1.1	0.8
Hours of formal childcare	8.6	17.3	9.1	17.6	6.9	16.9
Hours of informal childcare	1.0	7.7	0.9	6.1	1.3	9.9
Hours of care by relatives outside the household	5.2	16.2	5.9	22.4	5.1	17.6

Overall, the socio-economic differences are more pronounced between those on a low income and the full sample, but in terms of their strategies of childcare and leisure activities with their children, parents under immediate financial strain display some similarities with the low-income group.

7.3 Empirical Results

We present the results of our multivariate analysis below. Table 7.7 reports the effects of a 60% expenditure drop on mothers' leisure time with children. Table 7.8 reports the effects of a 60% expenditure drop on fathers' leisure time with children. Table 7.9 shows the effects of fathers' involuntary unemployment on fathers' contribution to childcare in the full sample. Table 7.7 and 7.8 present results in a block-wise progression: a) a model for a low-income group of children without control for subjective indicators; b) the same model but inclusive of subjective indicators; c) the same model after the introduction of an interaction term; and d) a complete model for children in the full sample, which we use as a reference. Table 7.9 also presents the results in a block-wise progression but only for the full sample of children.

Change in Mothers' Play Time

Generally, we find support for the family stress theory's hypothesis that material hardship in low-income families works through economic stress experienced by the mother. The predictor of financial strain (expenditure drop) gains statistical significance after we control for subjective indicators, i.e. the mother's economic stress, her high concern over providing necessities in the next 12 months, her self-efficacy and satisfaction with economic conditions. On average, children in low-income families would receive 1.76 hours (1 hour 45 minutes) less leisure interaction with the mother on an average day. However, when we refine the model to examine whether the effect of expenditure varies by mothers' stress level, then we come to a clearer and, indeed, more dramatic picture. The change is actually larger for mothers who are not stressed: they reduce their time with children by nearly 3.5 hours, clearly transferring time to some other priorities. Mothers who are highly concerned about the necessities and stressed reduce their play time with children, but by only 2 hours 26 minutes (-3.4 hours +1 hour). It is possible that mothers who are not stressed get on with their tasks at hand, knowing what they need to do. Meanwhile, stressed mothers exhibit a less decisive response, which can be a part of their confusion about the situation. The effect of the expenditure shock does not vary with father's employment status (which is tested separately).

None of the mother's coping strategies have enough statistical power to predict an effect, except for the mother's engagement in raising animals for trade or sale. The nature of this activity means that it prevails in rural low-income households. This introduces a selection bias into the model and could explain the substantial magnitude of the effect. It is one of the biggest influences in the full low-income model: 4.4 hours (4 hours 24 minutes). The fact that subjective perceptions and self-efficacy improve the statistical prediction of this variable might indicate that mothers are likely to start this coping activity when there is also a change in their subjective perceptions of the material strain and in their perception of how their close community looks upon them.

Mother's self-rated respect is a consistent independent predictor of a mother's contribution to leisure activities with children showing an effect across all models, including the full sample of children. The higher the self-perceived respect from others, the higher the mother's time input in this activity: a one point positive change on a nine-point scale predicts an increase of 0.36 hours (21 minutes) in mother's play time with children in low-income households. Further investigation of the mean values shows that this subjective indicator does not vary very much with the experience of financial strain.

In the full sample of children, the effect of the expenditure drop compared to last year is only statistically significant at a 6% level. However, while we cannot with confidence say that the coefficient is different from zero, we know – based on the 95% confidence interval being -1.46 to 0.04 – that it is definitely a much smaller effect than observed in the sub-sample of low-income children (-3.4 hours). So on average, Russian children are likely to retain the attention and care levels from their parents, at least in the short run. There is a possibility of time lag between idiosyncratic event and time allocations, which is difficult to test within our panel.

The final low-income model explains approximately 45% of the change in the mother's play time, which is significantly more than the model in the full sample of children.

Table 7.7: Effects of Expenditure Drop on Mothers' Play Time

VARIABLES	Low in- come	Low in- come + subjective measures	Low in- come + subjective measures + interaction	Full model
Expenditure Drop => 60%	-1.43536 (0.69997)	-1.76160* (0.58572)	-3.4446** (0.88408)	-0.70912 (0.31720)
Age, Ref: 3-6 (toddlers/pre-school)				
0-2 (babies)	0.38232 (0.35545)	1.01180* (0.38354)	1.16139* (0.36156)	0.45985 (0.21893)
7-9 (primary school)	-1.275*** (0.16021)	-1.230** (0.26563)	-1.2164** (0.29545)	-0.21335 (0.17140)
10-14 (secondary school)	-0.68799 (0.32353)	-0.67308 (0.41137)	-0.63830 (0.47208)	-0.24227 (0.20922)
Number of siblings	1.87649 (0.84097)	1.15064 (0.61186)	0.99603 (0.53329)	1.08255 (0.58271)
Health problems	0.50418 (0.56907)	0.69471 (0.55556)	0.69606 (0.53879)	-0.05022 (0.11347)
Mother's perceived respect		0.37836** (0.10652)	0.36261* (0.10856)	0.1352** (0.03730)
Concern about getting necessities		0.12751 (0.15545)	0.01295 (0.16898)	-0.02467 (0.04447)
Interaction between expenditure drop and concern about getting necessities			1.00893* (0.37800)	0.12786 (0.14286)
Satisfaction with economic conditions		0.19261 (0.20305)	0.18745 (0.19744)	0.05724 (0.03371)
Work an extra job	0.21650 (0.48635)	-0.65588 (0.80242)	-0.83087 (0.77984)	-0.17109 (0.18792)
Raise something on your plot to sell or trade	0.23380 (0.39267)	-0.24096 (0.45910)	-0.37803 (0.46613)	0.10111 (0.28340)
Raise animals for sale	-2.32322 (1.63577)	-3.4588** (0.87859)	-4.4315** (1.00288)	-0.62882 (0.27435)
Perform services for pay	-0.93543 (0.73156)	-0.84963 (1.08658)	-0.95360 (1.10227)	-0.43344 (0.25273)
Looking for job	-0.10743 (0.08150)	0.14396 (0.09817)	0.26127 (0.15267)	-0.01390 (0.08215)
Work status	-1.38263* (0.55580)	-1.54656* (0.57204)	-1.52340* (0.57427)	-1.348*** (0.19434)
Grandparent in the household	-0.05918 (0.77981)	-1.10634 (1.00487)	-1.26590 (0.95600)	0.05088 (0.21101)
Older sibling in the household	-2.10672 (1.34167)	-1.10112 (1.19466)	-1.20902 (1.15943)	-1.14882 (0.82343)

Hours of external care per day	-0.05328 (0.03722)	-0.08105** (0.02265)	-0.07924** (0.01939)	-0.01769 (0.01192)
Living space per head	-0.01658 (0.04943)	-0.01101 (0.05133)	-0.01896 (0.04915)	-0.00058 (0.00556)
Urban settlement (as opposed to rural)	0.98591 (0.61309)	1.35763 (0.67793)	1.31231 (0.77516)	0.48961* (0.19022)
Regional provision of pre-school places	0.01193 (0.02040)	0.02175 (0.01349)	0.02125 (0.01468)	0.00695 (0.00298)
Regional gross product	0.0335** (0.00639)	0.01028 (0.01060)	0.00816 (0.01068)	0.00185 (0.00245)
Year dummy 2007				0.28021 (0.19118)
Year dummy 2008	-1.741** (0.33238)	-1.13947* (0.40009)	-1.14588* (0.40338)	-0.262** (0.06347)
Year dummy 2009	-1.36641 (0.61640)	-0.77923 (0.44780)	-0.71346 (0.41663)	
Observations	775	725	725	4,309
R-squared	0.39134	0.44522	0.45839	0.16128
Number of individuals	600	570	570	2,245
Robust standard errors in parentheses *** p<0.001, ** p<0.01, * p<0.05				

Changes in Mothers' Childcare Input

This model specification does not give us the grounds to claim any direct or indirect effects of idiosyncratic shock on childcare time received either by children from low-income families or in the full sample. This serves to confirm our analysis in Chapter 6, which showed that a mother's care time is very inelastic to economic stresses imposed by macro- or micro-level material shocks. On the one hand, it appears that Russian mothers do not have much room for manoeuvre given fathers' lower contribution to care. On the other hand, it is a strong case demonstrating the rigidity or inflexibility of childcare responsibilities which are not affected by material shocks. We believe that this is not only a demand on the part of the children but is a result of certain self-expectations of care that mothers strive to fulfil.

Changes in Fathers' Leisure Time

Similarly to mothers' leisure time inputs, we find that the effect of idiosyncratic shock measured through a contraction in household expenditure is not observed in the full sample of children. We do find, however, that in low-income households the effect of financial strain is facilitated by the level of economic stress experienced by the father.

The effect is stable and significant before controlling for attitudinal (subjective) variables in the model, predicting a reduction in a father's play time with children of 1.12 hours (67 minutes) per average day. Controlling for subjective indicators³⁹ removes the statistical significance beyond the 10% confidence level. However, the introduction of an interaction term between the expenditure fall and a father's concern about getting necessities in the next 12 months shows that the effect of a shock on father's play time is moderated by his stress about the situation. The interaction term is significant at 1% while the effect of the shock regains its statistical significance at 5%. Fathers who are not stressed about the situation actually spend 1.5 hours more time playing with children than before. On the other hand, fathers who are highly concerned about the necessities spend 21 minutes less than they did before. So, a low-income father cuts down on his leisure time with his children only when he is stressed about material provision, whereas otherwise he will likely be more available to them.

Similar to the mother's model, the launch of livestock activities for sale reduces a low-income father's leisure time with his children, but the effect is marginally significant and much smaller than for mothers. The only coping strategy which is highly significant and consistent across low-income models is a father's search for a job in the last 30 days. This reduces a father's play time with children by 0.8 hours (48 minutes), controlling for subjective indicators, but the effect is independent from the expenditure shock (the tested interaction term was not significant).

³⁹ The father's power ranking was removed from this model due to its co-linearity with the economic stress variable regarding the level of concern about getting necessities for the family in the next 12 months.

Table 7.8: Effects of Expenditure Drop on Fathers' Play Time

VARIABLES	Low in- come	Low in- come + subjective measures	Low in- come + subjective measures + interaction	Full model
Expenditure Drop => 60%	-1.12928* (0.40927)	-0.99739 (0.63535)	1.50721* (0.55809)	-0.02887 (0.17166)
Age, Ref: 3-6 (toddlers/pre-school)				
0-2 (babies)	-0.94248 (0.66550)	-1.02010 (0.64012)	-1.13808 (0.62131)	0.10121 (0.11871)
7-9 (primary school)	-0.55992 (0.36763)	-0.35649 (0.28750)	-0.18305 (0.25229)	-0.21906 (0.10624)
10-14 (secondary school)	0.23132 (0.70885)	0.59258 (0.60954)	0.75953 (0.53103)	-0.36908 (0.21513)
Number of siblings	0.65978 (0.65530)	0.38124 (0.55067)	0.72971 (0.53629)	0.40395 (0.20998)
Health problems	-0.42666 (0.27891)	-0.47147 (0.22435)	-0.38884 (0.23054)	-0.02660 (0.04719)
Concern about getting necessities		0.02519 (0.22276)	0.09726 (0.16764)	-0.06865 (0.07210)
Interaction: expenditure drop and concern about getting necessities			-1.8540** (0.36396)	0.09544 (0.10222)
Satisfaction with economic conditions		0.09511 (0.21731)	0.11433 (0.19008)	0.01849 (0.03738)
Work an extra job	0.41033 (1.11253)	-0.44105 (0.35757)	-0.35596 (0.31466)	-0.11772 (0.14517)
Raise something on your plot to sell or trade	-0.44527 (0.36997)	-0.63214 (0.43735)	-0.40486 (0.39863)	-0.42954 (0.20241)
Raise animals for sale	-1.20828 (0.59488)	-0.72868 (0.37742)	-1.16635* (0.37957)	0.07114 (0.10978)
Perform services for pay	0.38578 (0.35245)	0.36144 (0.34708)	0.43453 (0.37976)	0.05784 (0.13142)
Looking for job	0.82253* *	0.68483* (0.22564)	0.80179** (0.18715)	0.00214 (0.05789)
Work status	-0.33384 (0.40365)	-0.20132 (0.40679)	-0.24262 (0.38881)	-0.34074 (0.16799)
Grandparent in the household	0.85558 (0.84201)	1.11454 (0.74243)	0.78954 (0.47774)	-0.27324 (0.17255)
Older sibling in the household	1.68564 (1.47355)	1.49949 (1.54584)	1.90910 (1.34400)	-0.71262 (0.52436)
Hours of external care per day	-0.07142 (0.03443)	-0.07909 (0.03597)	-0.07191 (0.03553)	-0.02470 (0.01125)

Living space per head	-0.01733 (0.02396)	-0.00963 (0.01680)	-0.01314 (0.01381)	-0.00233 (0.00626)
Urban settlement (as opposed to rural)	1.79866 (0.84738)	1.22915 (1.20122)	1.73098 (0.96283)	-0.35345 (0.36491)
Regional provision of pre-school places	-0.42808 (0.29772)	-0.29020 (0.22989)	-0.20117 (0.20531)	0.01496** *
RGP	-0.01713 (0.01365)	-0.00856 (0.01222)	-0.02911* (0.01151)	0.00046 (0.00150)
Year dummy 2007				-0.00043 (0.11558)
Year dummy 2008	-0.02472 (0.54983)	-0.14762 (0.55139)	0.30213 (0.41983)	-0.08745* (0.03019)
Year dummy 2009	0.52675 (0.45060)	0.19473 (0.38849)	0.59875 (0.30490)	
Observations	541	534	534	3,502
R-squared	0.27371	0.24188	0.29125	0.03789
Number of individuals	415	409	409	1,815
Robust standard errors in parentheses *** p<0.001, ** p<0.01, * p<0.05				

Fathers' Care Time

We find that a labour market-induced shock has a highly significant positive effect on a father's childcare input. When a father loses his job involuntarily, children on average are likely to receive 0.23 hours (14 minutes) more care time with him on an average day than before. This is a relatively small change, which probably shows that fathers are not ready to become full-time carers or substitute mothers in this area, but also demonstrates that they do not mind getting more involved. The effect is evident before and after controlling for subjective indicators, and is independent of the father's perceptions of the situation. None of the indicators of a father's subjective perceptions are significant for the full sample of children. For low-income fathers, we cannot determine the effect in this model specification. The involuntary unemployment was beyond the 5% confidence level.

Table 7.9: Effects of Involuntary Unemployment on Fathers' Care Time

VARIABLES	Full sample	Full sample with coping strategies	Full sample with coping strategies and subjective indicators
Involuntarily left work	0.26065** (0.07436)	0.27426* (0.08237)	0.23839*** (0.03785)
Age, Ref: 3-6 (toddlers/pre-school)			
0-2 (babies)	0.17253 (0.12175)	0.14758 (0.12665)	0.14155 (0.12845)
7-9 (primary school)	-0.13857 (0.08899)	-0.16049 (0.08299)	-0.13535 (0.07348)
10-14 (secondary school)	-0.06068 (0.13695)	-0.05306 (0.13843)	-0.00322 (0.13799)
Number of siblings	0.84153 (0.38969)	0.88100* (0.37235)	0.90154* (0.36713)
Health problems	-0.15847** (0.03808)	-0.13950* (0.04386)	-0.14381* (0.05075)
Work an extra job		0.03870 (0.10412)	0.04972 (0.10310)
Raise something on your plot to sell or trade		-0.10350 (0.08873)	-0.01941 (0.13074)
Raise animals for sale		0.11123 (0.16342)	0.12990 (0.10308)
Perform services for pay		-0.26655* (0.09343)	-0.25969 (0.13052)
Looking for job		-0.18881* (0.06053)	-0.21849** (0.05692)
Satisfaction with economic conditions			-0.06462 (0.04968)
Finances compared to year ago			0.04140 (0.06232)
Father's self-ranked power			-0.04282 (0.02150)
Grandparent in the household	0.05171 (0.24266)	0.07990 (0.23567)	0.08931 (0.24544)
Older sibling in the household	-0.16642 (0.82933)	-0.16936 (0.82553)	-0.17443 (0.82989)
Hours of external care per day	-0.01260 (0.00767)	-0.01435 (0.00702)	-0.01403 (0.00730)
Living space per head	0.00710 (0.00573)	0.00890 (0.00582)	0.00877 (0.00571)

Urban settlement (as opposed to rural)	-0.12082 (0.08105)	-0.09340 (0.09778)	-0.08044 (0.10749)
Regional provision of pre-school places	0.00569** (0.00109)	0.00536*** (0.00085)	0.00479** (0.00103)
Regional RGP	0.00685** (0.00134)	0.00711*** (0.00131)	0.00712** (0.00143)
Year dummy 2007	0.17719 (0.10841)	0.19420 (0.11693)	
Year dummy 2008			-0.19425 (0.11933)
Year dummy 2009	-0.08138 (0.06107)	-0.08460 (0.06462)	-0.29531* (0.08822)
Observations	2,073	2,068	2,022
R-squared	0.11621	0.13075	0.13986
Number of individuals	1,273	1,272	1,249
Robust standard errors in parentheses *** p<0.001, ** p<0.01, * p<0.05			

7.4 Discussion

Our key hypothesis was that: a) low-income families with already depleted material resources and inadequate risk-insurance in place are more vulnerable to shocks; and b) the change in their parental behaviour is likely to be mediated by the subjective perceptions of events as well as pressures on their time from extra income-generating activities.

Generally, our findings give grounds for some optimism. It stems from the fact that we do not find enough evidence to claim that financial strain, measured through expenditure fall, affects parental time allocations in the full sample of children. Moreover, we find a positive effect of father's involuntary unemployment on his childcare time. Apart from this positive change, on average Russian children do retain their status quo of parental attention and care in the family under a drastic contraction of household expenditure. This could be explained by the protective motivations of parents and by expectations of the transitory event being short lived due to reliance on long-term income patterns rather than immediate income availability. We also argue that another reason for

the equilibrium being retained could be the rigidity of the childcare demands in the family in the short run: after all, parental aspirations do not change very quickly and neither do a child's care needs. Time-invariant *demand* factors such as parental education and the immediate needs of a child could determine parental strategy and choices. So, on average, parents reshuffle their resources to meet these long-term demands.

Once again, as with the findings in previous chapters, we see that leisure activity with children is more elastic to material pressures and is likely to be perceived by parents as a 'luxury good' they cannot afford when there are more pressing family concerns. It is an activity which perhaps requires complementary monetary input as well as parents' emotional involvement. Parental care, on the other hand, is a rather stable activity, relatively inelastic to even a drastic contraction in household expenditure. Children in low-income families are taken care of by their mothers to the same extent as generally in the sample. On the one hand, retaining the status quo of mother's care might be a good outcome for children, especially in the early years. On the other hand, it raises questions regarding the mother's flexibility and ability to reengage in the labour market and raise the necessary income to support the family when family finances are especially constrained. The positive change on care was caused by a father's involuntary unemployment in the full sample of children. Time availability above all seems to have an effect on his decision. Given that the change is relatively small, however, it can be considered as temporary help to the mother rather than a dramatic change in the overall parental strategy.

We find, as in other chapters, that a mother's perceived respect from others predicts her time input in leisure regardless of the family income status or expenditure shock. Her higher evaluation of perceived respect translates into more time with her children. Our results show that parental practices in terms of extra activities with children depend on how positive and confident mothers feel about themselves and their own chances of improving the material situation.

Our results show that involvement only in some income-generating activities can directly reduce both parents' leisure time with children and father's care. Specifically,

each parent's leisure input is affected when either of them starts raising animals for sale or trade (predominantly an activity taking place in rural locations). The father's time spent caring for their child is affected when he starts performing services for pay. Another highly important factor is a father's job search. This once again confirms that formal employment and/or stable income is a higher priority for the father (and most likely for the whole family) than his engagement in childcare. But while these income-generating activities reduce the availability of parents to children, they appear to be a way of life – perhaps to be characterised as the parents' struggle for sustainability and risk management – rather than an immediate response to a particular idiosyncratic shock.

Our models controlled for changes in the macro-economic environment. Regional unemployment, which we also used to predict mothers' play and care in Chapter 6, was highly significant in terms of mothers' play in a full model on a full sample of children with a control for expenditure shock.⁴⁰ This was consistent with the results of the previous chapter. However, this factor lost its significance for the low-income group. The low-income sub-sample is a bigger group than the poverty group discussed in Chapter 6. It brings more variability to the model, thus reducing the statistical significance. RGP, on the other hand, which can only be used as an alternative to regional unemployment, was highly significant in the group of low-income children before the introduction of subjective indicators. In the second and third model, we could no longer state the effect with any confidence. This probably implies that mothers' subjective perceptions are not independent from regional economic conditions.

Fully consistent with the analysis of the previous chapter, a change in the RGP retained its significance in explaining a change in the father's care time in the full sample of children, as well as among low-income groups after the introduction of an idiosyncratic shock (involuntary unemployment). For a father, individual- and aggregate-level effects work in opposite directions. The final outcome will depend on the scale of the RGP fall. If a region experienced a very big economic decline, for example Moscow, this would

⁴⁰ Not presented here.

mean a decline in a father's time with his child of 45 minutes. Meanwhile, the increase in his care stemming from involuntary unemployment would only be 14 minutes. In this particular case, therefore, the negative macro-recessionary pressures will outweigh the availability of time for children after unemployment.

Importantly, regional provision of pre-school places retained its highly significant positive influence on both a father's care and play in the full sample of children. This supports the finding of the previous chapter on the importance of childcare policy at the regional level in relation to individual parental behaviour.

Conclusions

This chapter evaluated transitory economic stress measured through a drastic and unexpected contraction of household wealth. Based on the underlying theoretical framework of PTE, this analysis tested the proposition that the existing status quo of parental time input (equilibrium) is lost due to an unexpected financial strain caused by some adverse idiosyncratic event. It also verified the mechanisms through which the change is likely to affect parental time.

We examined the nature and characteristics of income and expenditure dynamics in our sample of children for the period 2006–2009. We find a convergence of income and consumption trends in the pre-crisis period, followed by a sharp average decline in income and an even sharper contraction in expenditure in 2009 during the economic recession discussed in Chapter 6. Disaggregating these trends to income quintiles indicates that income inequalities among children were retained during this period. Distinctively, the lowest income group has a smoother income trajectory but a substantially bigger gap between expenditure and income compared to other quintile groups and average values. Underreporting of income data as well as compensatory social transfers introduced by the government in 2009 could be contributing factors in these observed differences.

Instead of choosing an arbitrary idiosyncratic shock measures, our study empirically examines alternative indicators including income fall, expenditure fall, unemployment, hidden unemployment and subjective evaluation of financial situation compared to a year ago. We highlight the inaccuracy of the involuntary unemployment and, to a much greater extent, subjective indicators in measuring financial strain when they are set against real changes in the household income. Subjective evaluation has a particularly weak link to the actual changes in the family's material situation, showing that parents are more positive or less open about their true financial challenges than expenditure and income data reveals. Methodologically, this means researchers should be cautious when choosing them as measures of income shocks without clear reference to a specific vulnerable group. We conclude that the choice of objective measures depends on a specific definition of idiosyncratic shocks and on the research questions involved. In our case, the most appropriate measure was expenditure change and, tested separately, involuntary unemployment due to its importance for fathers' behaviour.

Essentially, our results are consistent with the analysis of the previous chapter and thus represent a critical empirical verification of the PTE framework, showing that parents' response to an idiosyncratic shock first and foremost depends on the existing level of material resources. We find that children in low-income families are disproportionately affected by idiosyncratic shocks. This is generally consistent with Ginja's (2010) findings and literature discussed in our Chapter 2, confirming that the effect of financial strain is mediated by existing material resources, or indeed by the lack of them. Families with 'depleted resources' have a lower capacity to smooth income risks and have to adjust their time to meet new demands. For low-income children a severe cut in household consumption means less time in the 'non-core' leisure interaction with the mother, and also the father if he is stressed about the situation.

We find that subjective perceptions have moderating effects on parents' behaviour rather than a mediating one as we had hypothesised. Meanwhile, some coping strategies – while directly negatively affecting parents' time with children – do not in any way facilitate their time allocation adjustment to an expenditure shock. The nature of the

parents' response seems to depend on their stress level and on a variety of different efforts that are made in order to put the family back on financial track. Consequently, the policy lessons cannot be unidirectional. Providing mothers with more flexible employment and childcare options might lower the level of human investment in the short term, but could mean a stable and sufficient monetary investment in the long run.

The key message of this chapter is, that rather than immediate cash availability, it is the underlying material circumstances and psychological resources that define the parental ability to cope and adjust in Russia today. There is no homogeneous or uniform change even within the group of low-income children mostly affected by change. Rephrasing Tolstoy, who wrote that 'Happy families are all alike; every unhappy family is unhappy in its own way' (Tolstoy, 1878), we can say that those who feel the effects of a crisis feel them in their own way.

Chapter 8

The Search for a Socially Optimal Equilibrium

Parenting is a 24-hour job. It is a job that involves a wide range of efforts and interactions in response to children themselves, individual aspirations, family circumstances, and conflicting needs. With this research we believe that we have contributed to the understanding of parental human investment in Russian families by measuring and explaining, in aggregate terms, some of these complex interactions based on a nationally representative sample of children. This final chapter gives us an opportunity to assemble the separate pieces of our ‘Russian doll’ of parenting into a coherent reflection on what has been achieved and what opportunities it opens up for the policy debate and for future research.

The key goal of this empirical investigation was to assess whether the amount of attention and care children receive from their parents is affected by persistent and transitory economic stress. In other words, we intended to understand how Russian parents and families mitigate persistent and transitory material shortages alongside their parental responsibilities.

The choice of topic was motivated by social concern in regard to the widening inequality gap affecting children’s learning and social opportunities in Russia today. The rationale of this investigation and its scope were also determined by the increasing policy focus on responsible and positive parenting that is in the best interests of the child. Russia provides an interesting contextual ground to study parental behaviour under economic stress in light of its radical socio-economic transformation to a new liberal agenda, as well as the evolving role of the state in the support of families with children.

We conceptualised parental human investment as a direct interaction with a child or children in the family. It is measured here through the amount of time parents spend in

both care and leisure interactions with their children, also looking at some parents' decision to completely withdraw from these activities. Economic stress was conceptualised as individual- or household-level forces (idiosyncratic shocks, poverty experiences, etc.) as well as macro-level aggregate pressures (regional RGP, unemployment rate, etc.). The study examined the effects of economic stress through a dynamic framework, distinguishing between long-term material pressures and transitory material strain.

By critically assessing the theoretical approaches to our key research puzzle in Chapter 2 we recognised the need to formulate a single encompassing framework, which provides the conceptual and analytical signposts guiding our research. The PTE model is rooted in the micro-economic rational behaviour paradigm, with the utility-maximising assumption at its core. From the individual perspective, parents' equilibrium is the most efficient allocation of time under the constraints of available resources and demand for parents' human input. These can be various possible points of equilibrium on the time allocation scale, ranging from an extreme zero time contribution to a maximum of 24 hours per day (although this is not very feasible, of course). The model allows for shocks to the resources or demands so as to create a tension between them that leads to the loss of equilibrium. The underlying theoretical assumption is that this will be a short-term effect. In the long run, parents will try to find a new equilibrium by either adjusting their demands or re-prioritising their resources. The study only observes the short-term changes in equilibrium as the analysis of the long-term adjustment process would require a longer panel data set.

What distinguishes this theoretical approach from others is that it: a) focuses on child-specific allocations; b) incorporates extensions to the parental investment theory such as social capital and the subjective well-being of parents; c) holistically captures the different layers of influences from the macro-economic environment and cultural context down to family and individual characteristics; and d) views parental time allocations within a dynamic perspective, allowing for adjustments to happen not only over the life course of the family but also through shocks to resources and demands within a shorter

time frame. This framework was vital and certainly proved itself to be a most appropriate analytical guide to this study.

8.1 Assembling the Russian Doll

We present our conclusions based on the key propositions of the PTE framework and the underlying research questions.

Proposition 1: *Both resources and demands contribute to parental time allocation decisions in Russia and explain the disparities between children in the quantity of attention and care they receive from parents.*

This theoretical proposition is at the core of our framework. It departs from the parental time investment approach (Becker, 1981, enlarged 1991) by recognising that parental human investment is driven by parental beliefs, ideas, and aspirations (*demands*) alongside the constraints of time and money (*resources*). Consistent with the PTE framework, we found in Chapter 4 that the disparities between children were explained by the factors representing both *resources* as well as *demands*. However, important clarifications to the model have to be made based on the magnitude of these influences that we uncovered. Demand factors play a fundamental role in determining long-term equilibrium time allocation. This is supported by the findings on the key characteristics of children, particularly their age and the number of siblings, which proved to be influential in all cross-sectional models. The territorial factor, capturing some community-level cultural and social characteristics, was found to be one of the most consistent predictors of lower time inputs across all models. It also contributes to the long-term *demand* side of the model. Although *resources* are crucial, especially the availability of a mother's time, they will only be used in response to an observed demand.

Another important clarification comes from the clear gendered and differentiated outcomes for play and care time allocations. The study shows that in many cases mothers' and fathers' decisions are affected by a different set of factors. For example, mothers' decisions are much more determined by whether she is engaged in the labour market or

not. However, fathers' time for children, in line with the traditional breadwinner role, is more driven by his professional success and preferences determined by his education than by his availability for involvement.

Chapter 4 also highlighted the clear differentiation that parents make between two types of parental activities – play and care. Generally, we find that leisure with children is much more sensitive to transitory economic stress (Chapters 4 and 7), and is to a greater extent driven by parent's low education (Chapter 4). This leads us to conclude that, despite its importance to children's development, it seems to be undervalued by parents as a tool for learning. Perhaps it is treated on a par with parents' own leisure and perceived as a 'luxury good', which can be easily sacrificed when material pressures are high. Our analysis showed that childcare and play have different functions, priorities and social or normative meanings assigned to them. The time devoted by parents to these activities is interdependent but is the result of separate decisions determined by the current resources and personal preferences. So, although in aggregate terms the PTE holds, we conclude that there is likely to not be a single but rather a number of individual equilibriums for each type of activity such as childcare, leisure or educational interactions with children.

A third clarification has to be made in regard to the relative weight of different factors within the groups of *resources* and *demands*. Contrary to the PTE prediction, we did not find a strong influence of social capital resources. Although we do find a very strong substitution effect of older siblings, the motivations for their contributions can vary from negotiation and reciprocal exchange to authoritatively assigned roles. Due to the high level of control exercised by parents over older siblings in the household, their consideration as 'social capital' is open to debate. We consider their contribution as a direct substitution of parental time, especially for fathers, and as such they are clearly a resource for parents. Meanwhile, although the 'granny safety net' was hypothesised to have a much more pronounced influence, this was not supported by our data. Grandparents seem to complement parental care rather than substitute it without, in most cases, modifying parents' own strategies.

The importance of parents' subjective well-being features prominently in our study. Self-efficacy-related features – i.e. a mother's self-perceived respect and a father's self-ranked power – are the most consistent influences among subjective indicators (chapters 4 and 7). While parental stress and perceptions of material pressures were not meaningful in explaining disparities between children in regard to the attention they received from their parents (Chapter 4), they moderated parents' decisions on child-related activities under idiosyncratic shocks (Chapter 7). So, we can confirm that subjective well-being is a *resource* for parental time input decisions. However, we have to clarify that it is perceptions of self-efficacy that contribute to the long-term decisions while also being sensitive to short-term material strain. Meanwhile, parents' psychological vulnerability to stress facilitates their response to transitory economic stress.

Proposition 2: *Low levels of material resources (experience of poverty and other factors of disadvantage) are associated with lower parental input.*

This proposition corresponds to the research question related to the role of poverty experiences in explaining disparities between children in the level of their human resources at home. The key finding is that children in low-income households face a double disadvantage in the form of low material and human investment in the family. Consistent with the theoretical proposition, Chapter 4 finds that children in *persistent poverty* are likely to receive below-average care and supervision time from both parents. Transitory economic stress measured through a single spell of poverty was found to be negatively associated with children's leisure interactions with both parents, and with mothers' care. The effect was bigger for children in poverty with working parents. In Chapter 6, we confirmed that during a recession children in poverty lose out on mothers' play time and fathers' care to a much greater extent than their peers.

In terms of our theoretical model, we found that depleted material resources (persistent poverty) affect even the most inflexible activity – childcare. This implies that persistent material disadvantage is able to suppress demand for parental involvement either through greater allocations of limited time resources to formal or informal work or

through preferences in the extent of parental contribution (i.e. a mother's lower aspirations and expectations).

Our study confirms that finding the most efficient equilibrium in terms of the time devoted to children is not an easy task for working parents. From the child's perspective, the mother's employment and time for children do not have to be mutually exclusive. Mothers do face hard choices between professional life and childcare responsibilities but the dynamics between those choices are much more complex than the simple trade-off of time and money. Thus, Chapter 4 showed that working mothers devote more time to both activities with children over the working week than mothers who do not work. We asserted that this could be explained by a high value assigned to their more limited time with children or the need to address school or pre-school issues during the working week.

Chapter 6 also demonstrated that the adverse effect of a recession can be mitigated by mothers' employment, with those who work reducing their leisure time with children to a lesser extent than non-working ones. This could be due to the heavy burden of housework for non-working mothers but also, as Chapter 7 demonstrated, due to the moderating effects of stress. The simple implication of this is that a mother's employment does not have to be detrimental for children. In the short run, a mother's employment provides income insurance for the family and may support her self-confidence in regard to her own ability to manage child-related responsibilities *and* material well-being. This in turn has a positive effect on her parenting. In the long run, it benefits the child not only through reduced risks of poverty but also through higher aspirations in terms of their human development.

The most challenging task is faced by working parents on low wages. Our study found that the negative effects of poverty are likely to be moderated by parents' employment. It appears that working parents on low wages simply do not have enough material, time and psychological resources to provide more attention to children than they currently do.

Proposition 3: *The lack of parental involvement in care and leisure activity with children (zero time allocations on parental time allocation scale) is the result of a failure in resources.*

The corresponding research question was concerned with the role of poverty experience (lack of resources) as a driving force of such extreme cases of parental non-involvement. The findings demonstrated that the experience of income poverty does not explain differences in the risks of children to have both non-involved parents. This implies that poverty cannot be equated to uninvolved or neglectful parenting. This is relevant for the current national public debate on selecting the criteria for social intervention in disadvantaged families in the light of the National Children's Strategy for 2012–2017 (Kremlin, 2012).

Meanwhile, the study shows that joint parental withdrawal is primarily explained by adolescent age, rural location, and reported inability to pay for children's extracurricular classes. The latter, we argued, reflects the low priority given to the child's non-academic opportunities under some perceived hardship. Rural children have a significantly higher risk of growing up without parental supervision and the experience of joint leisure activities with parents compared to their urban peers. This finding supported the 'structural failure' hypothesis. It suggested that territorial isolation and exclusion from modern information channels, associated with rural locations (Kalganov, 1999), provide few opportunities for parents to reap the benefits of their own education and socialisation or learn more about the benefits for children's cognitive and social stimulation within the family. The need to achieve material sustainability is also likely to justify a child's extensive involvement in productive activities at home. Traditional perceptions and ideas do not seem to have adjusted to the new realities of life (Starodubrovskaya & Mironova, 2010) under the state's withdrawal from many child-related services. Thus, parenting with minimum 'interference' is likely to be the norm in those conditions.

All of the most significant explanatory factors are on the *demand* side of the model. This, as well as their consistency in both types of activities, indicates that 'zero time'

allocation is a reflection of a suppressed demand, and thus is likely to be a long-term equilibrium (optimum involvement) rather than transitory withdrawal due to constrained time or material resources.

The findings provide ground for reformulation of the PTE proposition to the following:

Revised proposition 3. *The lack of parental involvement (zero time allocation) is the result of a normative equilibrium driven by parents' social construction of their role, which involves low demand for interaction through social and leisure activities and an expectation of early maturity on the part of their children.*

Proposition 4: Economic stress at the macro level (aggregate shock) has a direct influence on parental time allocation decisions in the family and leads to a loss of equilibrium.

Our analysis in Chapter 6 demonstrated that the macro-economic environment and institutions such as the labour market can have a direct influence on parental human investment behaviour. The aggregate shock to macro-level resources has a gendered and prevailing negative outcome. The key finding was that fathers' care time contribution, notwithstanding that it is already low, will be further affected by recessionary pressures for all children in our sample, regardless of fathers' current work status. Children in poverty will lose out to a much greater extent on leisure interaction with the mother and on the father's care time input than other groups of children.

The findings are generally consistent with the model, showing that the status quo will be lost when fathers' childcare becomes a lower priority than professional or material stability, or when the specific activity is considered 'optional' or secondary to a child's well-being (i.e. such as occurs with play interactions). We find that a mother's general equilibrium is very rigid in the short run, which might be indicative of barriers to her labour market mobility during a recession and the difficulties in finding a substitution for her care time. The biggest change from the status quo is observed among children in poverty. This implies that low levels of material resources define the trade-offs parents have to make to meet their parental responsibilities to a much greater extent than any

other factors on the *resources* side of our framework. This fits very well within the PTE framework and clarifies the path through which macro-level shocks affect parental practices.

We caution against generalisations since it is undoubtedly the case that the diversity of socio-economic trajectories in different Russian regions over the recessionary period determines their specific outcomes. Due to big variations in the level of aggregate shocks across regions, the magnitude and direction of the change will be very different for children living in regions hit hard by the recession and those which were only mildly affected. Crucially, however, the analysis provides the empirical base to project the possible outcomes for specific areas given a level of change in the RGP or unemployment rate.

Proposition 5: Economic stress measured through an individual-level shock to family finances also distorts the established parental time allocation balance. The effect is mediated by subjective resources and competing demands for time.

Our analysis in Chapter 7 supports the earlier finding that the biggest intermediary between an idiosyncratic shock and parental practices is the low level of existing material resources. Only children in low-income families are likely to lose out on leisure interaction with their mother as a consequence of idiosyncratic shocks. We find that, on average, Russian children do not experience a reduction in the attention and care they receive from their parents. We argue that, along with the protective nature of parents, it is the rigidity of demand for parents' and particularly for mothers' input in the short run that explains this stability.

We tested the mechanism of influences and found that the time allocation equilibrium in low-income households is quite sensitive to parents' perceptions of events and their level of concern over provision in the near future, perhaps indicating their emotional or psychological vulnerability under transitory economic stress. The analysis in Chapter 7 also strongly confirms the findings in Chapter 4 regarding the importance of a mother's self-efficacy in connection to time allocation decisions. Not only does it explain varia-

tions between children, mothers' self-efficacy clearly has a positive causal relationship with a mother's time allocation for a particular child.

The findings thus call for the reformulation of theoretical proposition 5 in the following way:

Revised proposition 5. Parental time allocation equilibrium at the given (fixed) level of demand for childcare activities will be retained in the face of an idiosyncratic shock in the short run, unless there is long-term income deprivation and weakened psychological resources (stress).

The results demonstrate that the reconciliation of childcare responsibilities and income sustainability in low-income families goes hand in hand with emotional and psychological transitions. Therefore, we argue that policy attention has to be placed on helping the family as a whole, to reduce the cost of its adjustment and coping, be that in psychological, material or human terms.

8.2 Implications for the Policy Debate

Children with Severe Material Disadvantage

It is arguable that limited parental time with children can be effectively supplemented by market-purchased goods and services – tutoring, nannies, after-school clubs and other extra activities for the child. However, for children in low-income households these external inputs are largely unaffordable. They are likely instead to rely entirely on communication and interactions with parents and close family members, whose availability was controlled for in this study. This implies that these children face the double disadvantage of a lack of money and limited parental time. This raises issues of the adequacy of social and human stimulation and development within the home environment. Along with the recognised difficulties of access to a quality pre-school and basic education, the gap between children in poverty and others is only likely to widen over time. This finding draws attention to those non-monetary deficiencies that children in poverty

can experience in Russia; these issues call for a more multi-dimensional approach in addressing the issues of equal opportunities for child development.

This study is careful to single out children in poverty as those who have the double disadvantage of a lack of parental attention and monetary input. Firstly, the official absolute measure of poverty leaves a lot of families at the borders of the poverty line, struggling on a daily basis to make ends meet but not falling into the official statistics. Therefore, low-income children – i.e. those living in households of the first income quintile – could be a more appropriate group to target for policy purposes. Secondly, children who are doubly disadvantaged are mostly those with working parents on low wages, who are arguably the most active and more motivated among the low-income group. This study does not advocate less work for mothers and encourage them to stay at home with children. Quite the contrary, we highlighted the possible short- and long-term benefits of mother's employment for these children. From our view, the policy debate has to include the issues of greater flexibility in mothers' employment options (OECD, 2012) as well as targeted income support without penalising their work efforts.

Rural Children

Rural children as a group really stand out as consistently receiving less attention and care from parents, as well as also being at a higher risk of parental withdrawal. One can argue that children left on their own or under the supervision of another adult or their peers could live a happy life unaware of the deficiencies in parental attention. We disagree, since the evidence highlighted in our Chapter 1 reveals that children are sensitive to the lack of attention from parents. Thus, promoting parent–child interactions and involved parenting in rural families today would help to ensure the emotional and social quality of their experiences. Admittedly, rural children can learn through other interactions with adults that are not captured by our study, such as in working together in the field, attending livestock, etc. Without undermining the need for and importance of productive activities on the part of children in rural areas, however, it is still important to emphasise the need for interaction and communication between the child and parents

regardless of its desired outcome. It is communicative exchange that often builds an effective relationship between parents and children (Ginott, 1969), (Newman, 1998).

There is no lack of national programmes on rural development in Russia today (Ministry of Agricultural Development, 2012). There is, however, a distinct lack of a clear priority being given to equality of opportunities for rural children. The findings of this study point to the need for inclusion of families with children into information channels such as internet. It has to be given no lesser priority than other socio-economic measures such as diversification of income sources, reducing barriers for employment, support to community common areas or extending the network of public educational institutions.

Fathers

Throughout our study we saw a relatively marginal contribution from fathers to total child-related time allocations in the family. The findings in Chapter 5 also highlighted the high risk of children not having social interactions with their father. Every one in five children in our sample does not spend any leisure time with their father. Almost every second child misses out on their father's involvement in care when we include those who live in single-mother households. Furthermore, those who are involved contribute half of the time that mothers do and, even then, are likely to be substituted by older siblings (Chapter 5). We also saw that fathers have gender preferences and spend less time playing with girls. They drastically reduce their interactions with adolescent children, who arguably need them even more as a role model and a source of support at a difficult stage of development. As mentioned earlier, traditional perceptions of gender roles as well as the high priority given to professional life can at least partially explain their low demand not only for childcare activities but for leisure time to spend with their children.

The mother's role in child well-being is fundamental, but we believe it is now time to address the issue of fatherhood in the policy agenda. The social, psychological and developmental implications of fathers' underinvestment in children are little researched in

Russia. Qualitative evidence presented in the Introduction (FSC, 2009) suggests that a great majority of the ‘children of the streets’ come from single-mother households. Our study demonstrates that Russian adolescent children of 11 to 14 years become too independent too early and drop out of their father’s circle of attention at just the time when a father is most needed. Our findings thus add to the general concern about the role of fathers. Arguably, promoting the father’s involvement in full families and reconnecting children with fathers after family separation are different policy tasks. What unites them, in our view, is a need to increase fathers’ parenting profile in society by ensuring that policy documents emphasise a father’s influence alongside his responsibilities.

Overall, the results on the risks for children of parental underinvestment in Russia unambiguously show that parents have to recognise that there is a demand for their efforts and the benefits that their interaction and communication bring to a child. This is crucial for long-term equilibrium to be at a socially optimum level. When aspirations and expectations for parent–child interaction and communication are low, resources are unlikely to bring parental involvement to a higher level. The implication for policy development in Russia is clear, highlighting the demand-side policy interventions in line with European efforts on positive parenting alongside income support to the most vulnerable children.

Local Childcare Provision

One of the most important secondary findings of our study was that public pre-school provision has a potential to stimulate active parenting. In Chapter 6, we found that widening access to public pre-school provision in an area has a positive effect, albeit small, on parental input. Institutions appear to educate parents and stimulate more active parenting not only in both parents’ leisure interaction with children but, crucially, in terms of fathers’ care input. One of the explanations offered is the ‘spill over effect’ of the increased information available to parents and the pressures exerted by pre-school facilities on parents to supplement educational efforts through ongoing activities or preparing children for school. Another possible reason, applicable to all age groups, is that more

active educational policies in the locality provide visibility and a favourable information environment in regard to children's issues.

From the point of view of this study, the widening access to childcare provision has the potential to fulfil a double function, compensating for cognitive and social stimulation as well as supporting positive parenting. This is imperative in light of the deficiencies in parental human investments experienced by poor and rural children revealed by the study. Since public provision of pre-school education is a link between the government educational policies and the family at the crucial early stages of a child's life, there are opportunities for the policy to channel information support to wider groups of parents without stigmatising or monitoring their behaviour.

The large variation in parental engagement with their children generally demands a much more targeted approach in support of children and families during times of economic recession. While leisure interaction between parents and children seems to be a 'soft target,' the cumulative effect of existing poverty, macro-level and income shocks could mean that children who already receive little attention can face a real deficit in terms of their time with their parents. Along with targeted psychological support to the most vulnerable parents, effort has to be made to compensate low-income children for the deficit of social interaction.

8.3 Evaluation of the Study: Limitations and Future Opportunities

The study has achieved its core objective but there are a number of analytical areas that could, in our view, be further improved or extended.

- We argued in Chapter 2 that the longitudinal nature of our time use data overcomes the shortcomings of the stylised question format of the household survey. We firmly stand by this principle and believe that panel data analysis was a vital method to answer our research questions. At the same time, we felt that the aggregate nature of the time use categories that were available in the data relating to play and care limited our interpretation. While we fulfilled our task of explaining the general patterns

of parental human investment under economic stress, more refined data, either with more categories of child-related time use or some characteristics of this interaction, would most certainly be beneficial. The most recently published RLMS data (2010) presents a change in the format of the child questionnaire, which now incorporates child-specific time allocations on educational activities. This opens interesting opportunities for further research.

- The analysis of aggregate and idiosyncratic shocks was based on the three recent waves of RLMS data. Those were not typical waves as they included a severe recession. This was doubtless to our advantage and generally was sufficient for our specified research interest in examining the short-term adjustments in parental time allocations. Nevertheless, we feel that a longer panel would be beneficial both to confirm trends and the effects of changes in access to pre-school institutions on parental time. This does not devalue our results but offers opportunities for further empirical investigation subject to data availability. In addition, further exploration of the mechanisms through which pre-school provision positively influences parenting would be interesting.
- Russia is a country of great diversity and rather unique political, economic and social discourse. Therefore, there is always a question regarding the generalisability of our results to other cultural and socio-economic contexts. We strongly caution against wide generalisations of results even within Russia due to its very diverse geographical and economic conditions. This does not, however, undermine its similarities with other countries of the former Soviet Union and even East European nations, which today form a part of the European Union. The common ideological and socio-economic past created many similar trends (such as a falling public share of investment in children) but seem to have gone different ways in supporting children and families: some integrate to the common European values and policy framework, while others attempt to find their own unique ways. Therefore, we see opportunities for future comparative research on parental human investments in these countries based on the premise of divergent ways stemming from a common past.

The findings of this study open up a number of interesting research opportunities or areas of enquiry. One of the secondary findings of this study stands out as particularly new and an important area of future investigation in the context of CIS countries. The consistent and quite meaningful contribution of older siblings to childcare in the families studied here raises a lot of questions relating to intra-household dynamics and their impact on older siblings. For example, the reasons for their extensive involvement could relate to reciprocity or control exercised by parents. While the substitution for parents could help them to become independent and responsible individuals, it could also have a detrimental psychological impact, affecting their socialisation and education. Given that the sample size of families with older siblings is normally small, this is likely to provide an opportunity for a qualitative study.

The research findings make a strong case for further investigation into the lives of low-income rural children in Russia. Learning more about whether low parental time investments translate into differences in child outcomes for these children would be the next logical step of this research, but it is also the most difficult one due to the lack of appropriate child-level data on educational attainment and other cognitive or social outcomes. Integrating child outcome indicators into a national representative survey such as RLMS would greatly expand research opportunities in this regard.

8.4 Towards Socially Optimal Equilibrium

Noticeable progress has been made in recent years on multi-dimensional measures of child well-being in Russia (Richardson, et al., 2008; IISP & UNICEF, 2011). Our hope is that this study has shown that the extent of parental involvement or the lack of it can be used as one of the human and social dimensions of children's experience. It complements and expands our knowledge of income inequalities among children in Russia by highlighting and explaining the disparities of opportunities in the human and social resources they receive at home. Importantly, the study underlines the risks of a double disadvantage of monetary and human investments in low-income children. In addition, the background evidence highlights the psychological, professional and material di-

lemmas that are faced by low-income parents, particularly those who remain within the labour market.

The example of Russia shows that that child well-being cannot be left entirely to market forces. Parental failures in the form of human and social underinvestment are difficult to prevent when families with severe economic pressures and territorial exclusion are left to their own devices, or when adequate income opportunities and normative directions for child well-being are not provided. Today there is sufficient scope for the state to take up some of the responsibility and provide guidance as well as wide-ranging support to families. Our research demonstrated that structural and institutional factors matter for parental practices. Thus, the hope is that the higher priority given to children in recent policy documents will be incorporated into the wider socio-economic strategy.

The Russian welfare state is evolving in search of new approaches and a new paternalistic agenda in addition to its active demographic goals. This study indicates that finding the mutually beneficial terms of the contract between the state and the family should be at the heart of this agenda. The concluding message of this thesis is that policy has to address *resources* as well as *demands*. Reduction in the structural barriers of exclusion, such as territorial inequalities and support for low-income parents' employment opportunities, has to be prioritised in increasing resources for the former. Intelligent paternalism, which we understand as supporting vulnerable families with information and education on children's well-being with a similarly clear priority being given to the welfare of the whole family, might be a policy option for increasing demand. Both strategies, we argue, will help to bring the child, parents and societal priorities into joint human investment equilibrium in the best interests of the child.

Appendices

Appendix 1 to Chapter 3: Sample characteristics

The demographic characteristics of our sample of children are generally comparable with the official statistical figures. Table A3.1 presents the gender distribution of our sample based on the year 2007.

Table A3.1: Number and proportion of boys and girls in the sample based on child's age

Activity	Boys		Girls	
	Number	%	Number	%
Age 0-2 (babies)	211	20.4	227	21.8
Age 3-6 (toddlers/pre-school)	288	27.9	313	30.1
Age 7-10 (primary school)	289	28.0	263	25.3
Age 11-14 (secondary school)	245	23.7	236	22.7
In all age groups (0-14)	1033	100.0	1039	100.0
As a share of the total sample		49.8		50.1

The equal gender distribution of our sample reflects the gender statistics of the child population of Russia, but girls are slightly overrepresented here: 50% compared to 49% of the total children population in Russia according to official statistics in 2008 (FSSS & UNICEF, 2009). Age groups by gender can also be considered representative with only group of 7-10 year olds being slightly overrepresented (by about 3%). The types of settlements considered as urban-rural dichotomy are well represented by our sample: 70% of children live in urban areas and 31% in rural areas relative to 70% and 30% recorded by official statistics (Table A3.2).

As Table A3.3 shows, 62.3% of our children have no siblings below age 15. This is twice as much as children with one sibling - 32% of the total sample, and over 9 times more than children with 2 or more siblings - 6%. Due to the age range of our sample

and the fact that the child and not the household is the unit of analysis it is difficult to evaluate the extent to which our sample is representative here.

Table A3.2: Number and proportion of children in our sample residing in rural and urban settlements

	Rural		Urban	
	Number	%	Number	%
Age 0-2 (babies)	123	19.4	315	21.9
Age 3-6 (toddlers/pre-school)	174	27.4	427	29.7
Age 7-10 (primary school)	183	28.8	369	25.7
Age 11-14 (secondary school)	155	24.4	326	22.7
In all age groups (0-14)	635	100.0	1437	100.0
As a share of the total sample		30.6		69.4

But it generally reflects the current trends in the number of children in families in Russia. In 2008, 65% of all private households with children in Russia had one child, 28% two children and around 6% three or more children up to age 18 (FSSS & UNICEF, 2009). Some over-representation of the second group in our sample might be accounted for by the fact that our sample is limited to children up to 14 years old. Any siblings 15-20 are recorded in the adult data and therefore are not included in our sample. It is worth noting that 10% of single children, 3% of children with one sibling and around 0.7% of children with two or more siblings aged 0-14 also have an elder sibling aged 15 -20 living in the household. The average age difference between siblings is 5.2 years for families with two children and 4 years for families with 3 or more children.

Table A3.3: Number and proportion of children in the family based on child's age

	Single child		One sibling		Two or more siblings	
	Number	%	Number	%	Number	%
Age 0-2 (babies)	287	22.2	128	19.4	23	19.0
Age 3-6 (toddlers/pre-school)	389	30.2	180	27.2	32	26.4
Age 7-10 (primary sch.)	315	24.4	200	30.3	37	30.6
Age 11-14 (secondary sch.)	299	23.2	153	23.1	29	23.9
Total number	1290	100.0	661	100.0	121	100.0
Total share		62.3		31.9		5.8

Appendix 2 to Chapter 3: Selected data from the small-scale survey of families in Russian regions

Background

This independent survey of Russian parents aimed to complement the quantitative analysis based on RLMS data in the following:

- a) Provide contextual verifications on the time use questionnaire used for the main analysis;
- b) Support the quantitative analysis with background information on the types of activities and interactions children engage in with parents at home;
- c) Verify parents' perceptions of material stress and its influence on their time with children;

The survey utilised conventional methods of collecting data, namely one to one interviews and home observations, conducted by interviewers recruited among third year students of the Moscow State University of Culture and Arts. Participants were found through 'snowballing' or chain-referral sampling. With clear criteria for selection, interviewers approached their close circle of friends, relatives or acquaintances to ask for any contact of a household with matching characteristics. A second round of inquiries was initiated through this first circle of friends and relatives. Interviewers were specifically instructed not to conduct interviews in their first and second circle of references. The principal investigator conducted a two day training for all interviewers in a workshop format including pilot interviews. Interviews and family observation were conducted with the written consent of the principal participant (an adult member of the family who is a primary caregiver).

Based on the initial design, 53 semi-structured interviews were conducted. Most of them were with families living in the Central region of the Russian Federation: Moscow and Moscow oblast, Tula oblast, Voronezh oblast, Orel oblast, Vladimir oblast. A few interviews were conducted outside Central Russia: In Kazan (capital) and the

Tonaika village (rural) in the Republic of Tatarstan, and in Cheboksari in the Chuvash Republic.

Some socio-economic characteristics of the interviewed families were collected through a Family Observation Form which combined survey type questions with an observation form completed by the interviewer after spending an additional time in the family.

All anonymous data was received by the principal investigator, coded and entered into an Excel database. Text data and quantitative data was analysed separately according to the purpose. Below is the summary of some survey information, mostly some characteristics of the interviewed families and their activities with children.

Summary

The interviews were conducted mostly with mothers. The average age of mothers (according to the main respondent) was almost equally distributed between 31-35 year olds (36%) and 25-30 year olds (34 %) with very few interviewees in other age categories. The mean mothers' age in our RLMS sample is 31-32 y.o (2007-2009).

Mother's age

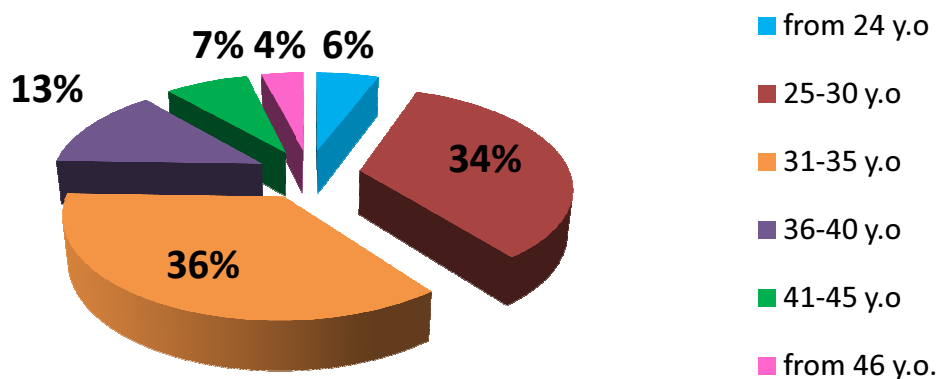


Figure A3.1 Distribution of respondents by mother's age

The majority of interviewees had higher education (59%) which is somewhat overrepresented compared to our RLMS sample (30% had one in year 2009). This might be explained by the characteristics of interviewers who were students themselves and search through their network of people with higher than average level of education. At the

same time, the distribution is comparable with our RLMS sample on professional education 24% compared to 25% in RLMS.

Educational level of interviewees

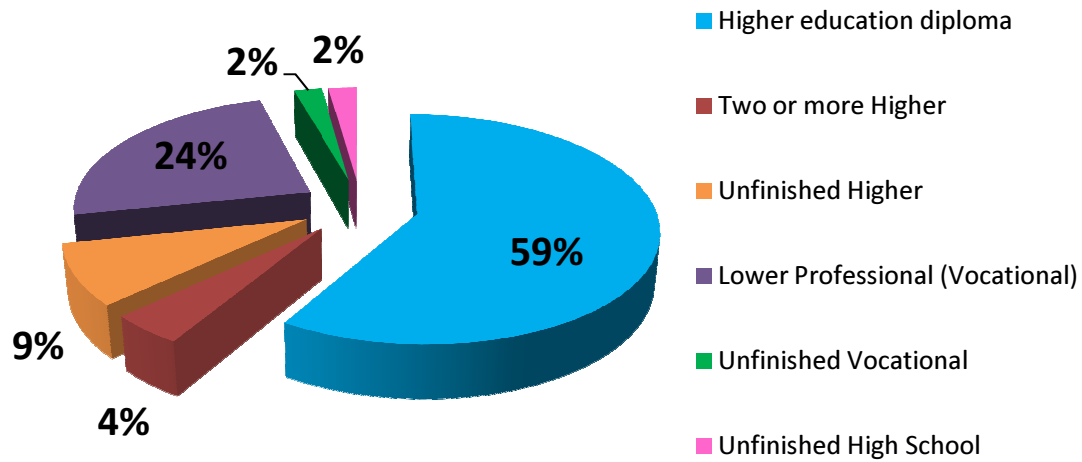


Figure A3.2 Distribution of interviewee's educational level

Parents in this study came from very different occupational fields. In the majority of cases the interviewee was asked to name his or her own occupation or field at the very end of the interview. These are primarily mothers' occupational fields, but sometimes mothers also named father's occupation, so this also was included in this distribution. The 17% who did not answer the question were primarily mothers who were on maternity leave or simply 'stay at home' mothers. Meanwhile occupations mentioned reflect not necessarily the current occupational status but in some cases the most recent area of work.

Parents' occupations

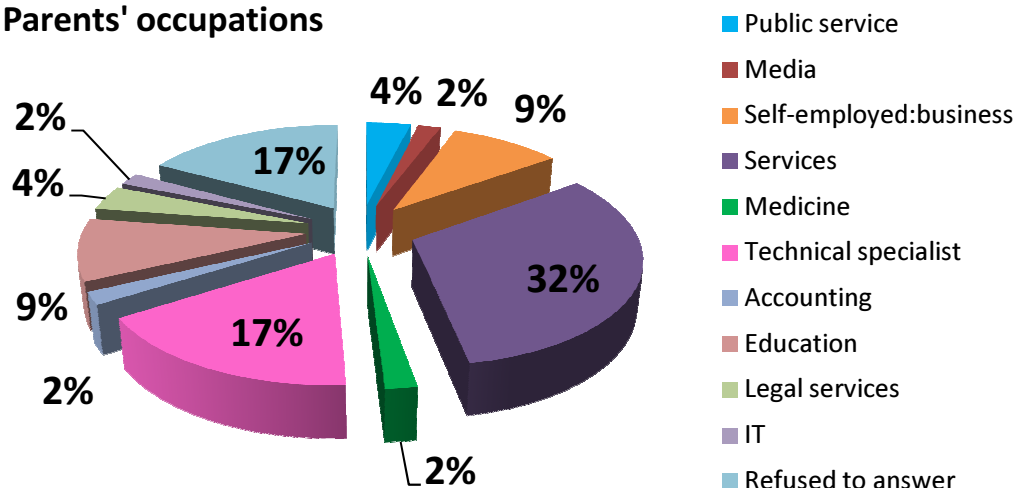


Figure A3.3. Distribution of parents' occupational areas

The interviewers were asked how to characterise their current material situation in the family and asked to reflect on the financial difficulties if there are any. Figure A3.4 shows the distribution of interviewees based on their satisfaction with the current work or occupation. Sometimes the mother as the main interviewee commented on father's work as well, but those responses were not included here.

The level of satisfaction with the Job

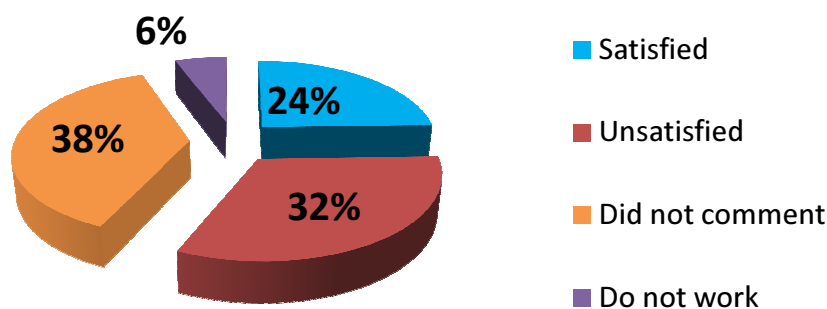


Figure A3.4. The distribution on satisfaction with the current work situation

From the Figure A3.5 we see that the interviewed families were very evenly distributed in terms of family size. There were many families among those interviewed who have grandparents living in the same households. Three families were comprised of just a mother and a child.

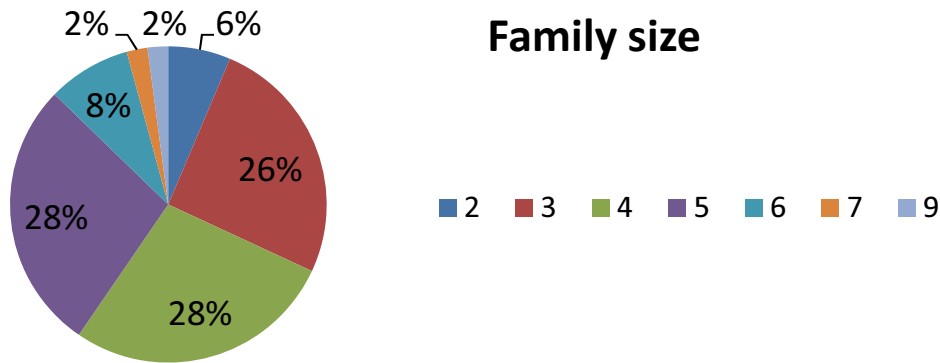


Figure A3.5: The distribution of families by family size.

The distribution of interviewed families on the number of children was very close to our RLMS sample with families: 46% of families among those interviewed had one child, compared to 49% compared to children with no sibling in our RLMS sample (2009), while 38% had two children compared to 39% in RLMS sample of the same year. At the same time, families with three children were overrepresented here at 14% compared to 8% in RLMS.

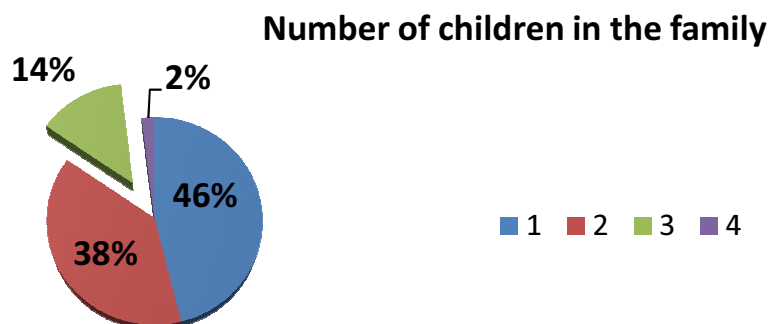


Figure A3.6: Distribution of families by the number of children

The interviewed families came in a variety of family structures with a full family being the most common type (37% of all interviewed). 14% of the whole sample consisted of single mothers and only 2% (1 family) has a single father. Single father households are extremely rare situation in Russia and having such a family in the sample is very lucky.

The family observation form asked about the type of accommodation in which the family lives and the type of ownership/lease. It is important to note that ‘owners’ does not necessarily mean that the family bought the accommodation on the open market today. Most of the apartments were distributed in the Soviet time for ‘free’ according to work record and achievements and then privatised in the early 90s without any contribution. Therefore asset holding of this kind could come as an inheritance without prior investment. At the same time, there were some interviewed families which specifically indicated that they bought their place in the last decade. Figure A3.7 shows that 38 interviewed families owned their accommodation, 8 families lived in rented accommodation and 4 were provided by the state.

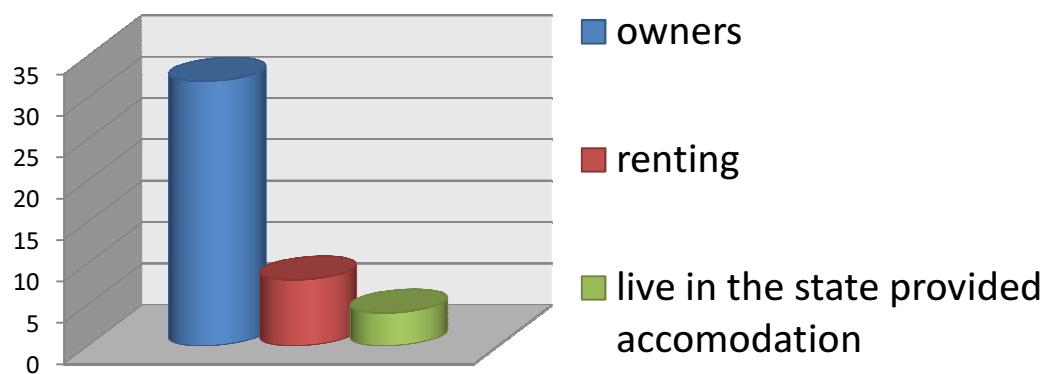


Figure A3.7: Types of ownership of the accommodation.

Most of the families live in relatively cramped conditions, some with children and parents sharing a studio (one room apartment in Russia of 30-40 sq.m). More than 50% of children in the interviewed families do not have a separate bedroom.

As mentioned earlier, many families share accommodation with their elderly parents (32%). For some it is the only option in terms of living accommodation, for others it seemed like a personal choice as a mutually beneficial arrangement enjoyed by both sides. It is very close to our RLMS sample where we observe 29 % of children living in three- generational households (2009).

The first part of the interview consisted of questions in regards to children’s favourite and unfavoured activities at home with the goal to examine the extent to which those

activities involve parents. Figure A3.8 represents all mentioned activities of children of different ages. Interestingly, parents often first mentioned the clubs or other organised activities as if these were of higher importance and value to children. Perhaps this comes from the expectation of children being taught there in a formal way similar to schooling. It has to be noted that schools in Russia close early (around 1:30 pm) and usually have a limited number of after school clubs. Therefore all mentioned that activities are likely to fall outside school hours and are engaged by children in a separate setting in the locality (private, public or NGOs). The most popular activities mentioned were drawing, arts and crafts, which were often done by mothers with children and apparently more with girls than boys.

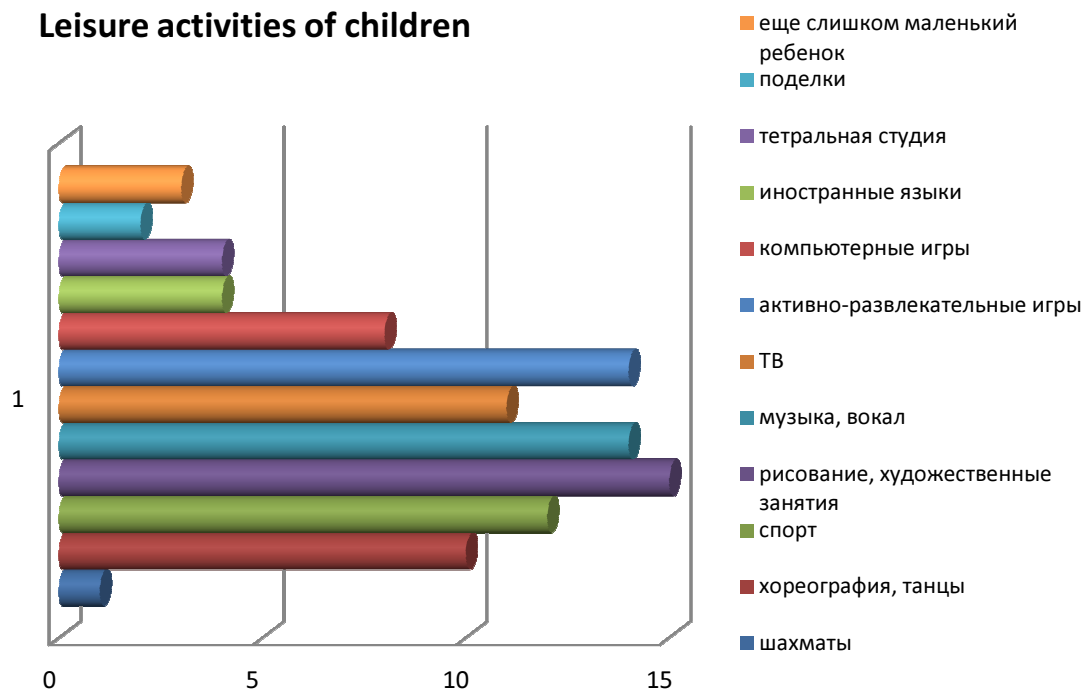


Figure A3.8: Distribution of children's activities outside school hours⁴¹.

More specifically parents were asked what they like to do with children. The types of family activities vary from board games to going cross country skiing in winter (the interviews were conducted at the end of winter) and to watch a TV together. Watching TV

⁴¹ In order from the top: a) still too young, b) crafts, c) drama class, d) foreign languages, e) computers, f) active leisure, g) TV, h) music, singing, i) drawing, art, j) sport, k) dance, ballet club, l) chess.

was mentioned quite often as joint activities: particularly watching cartoons together. Examples of learning activities include:

Leisure activities with children

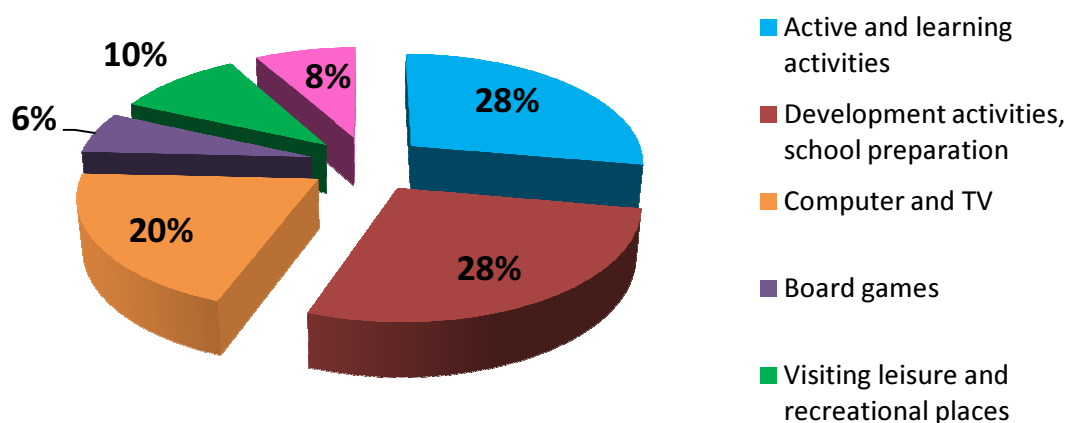


Figure A3.9: Leisure Activities with Children

Below we present some summaries from other selective responses.

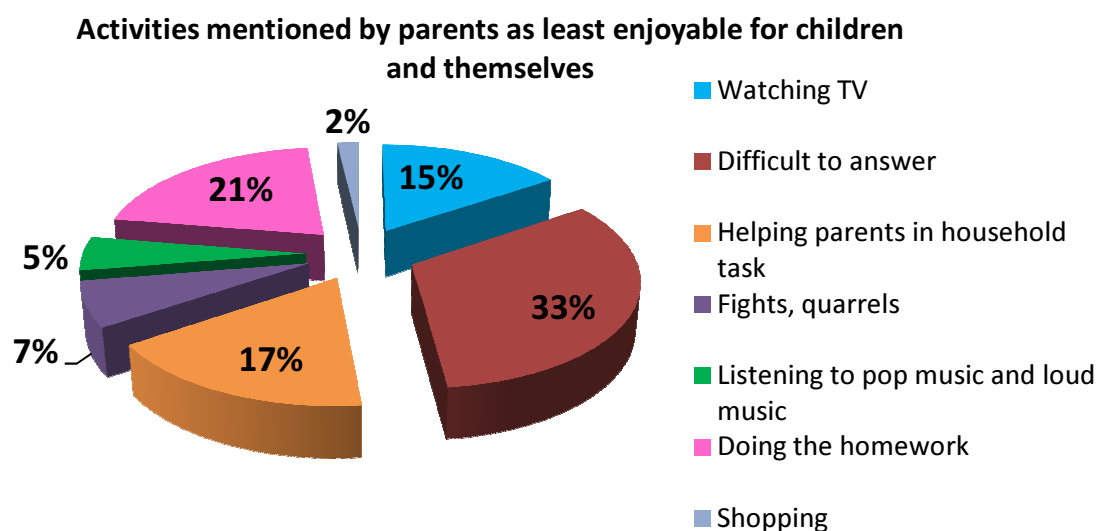


Figure A3.10: Activities Mentioned by Parents as Least Enjoyable to Children and Themselves

Do you think you spend sufficient time with your child?

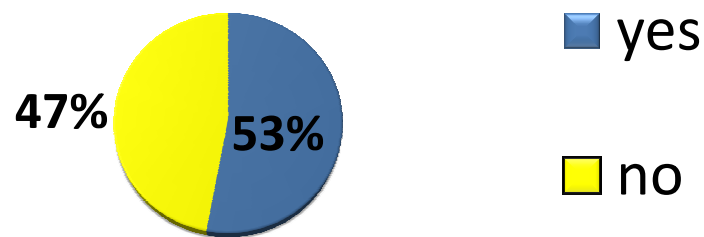


Figure A3.11: Self-evaluation of time devoted to children

The interviewees were asked about their material situation twice during the interview. At the beginning, they were asked what words best describe their material situation. Also, at the end of the end of the interview the interviewers asked information on the average total income of their household. Since the semi-structured interviews were conducted as a conversation rather than a survey, the respondents were not pushed in giving the specific number, so many limited their response to generic answers which indicated their unwillingness to reveal the true income position. The distribution below reflects information combined from the last question on total income and earlier response if no income information was given. Parents who gave the answer 'below average' generally expressed some other concerns about work situation, financial stability etc.

Self-reported income level in the household

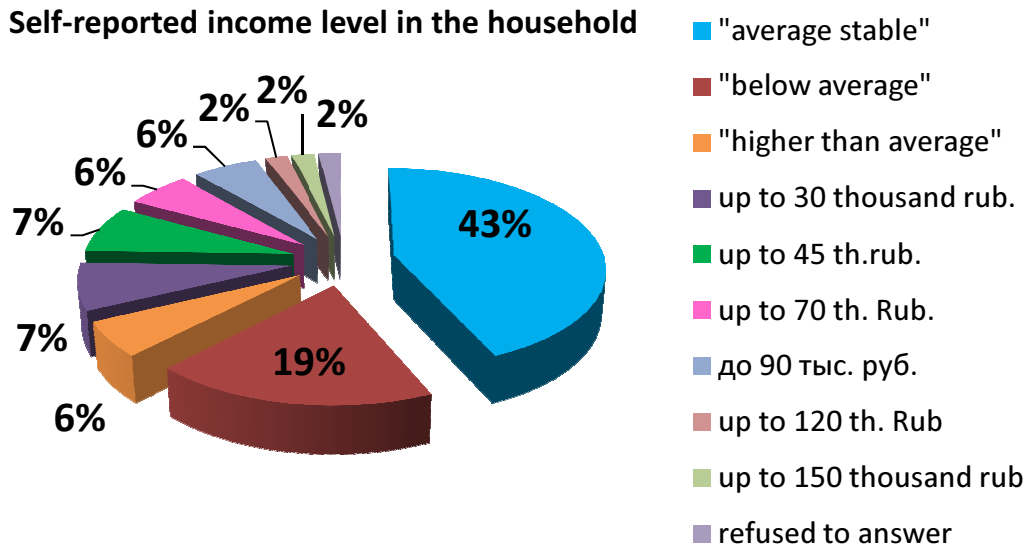


Figure A3.12: Self-reported Income Level in the Household

Perceived material difficulties

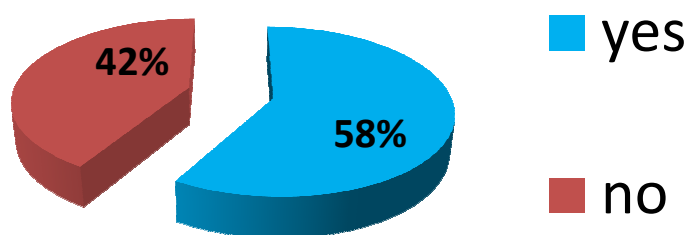


Figure A3.13: Perceived Material Difficulties

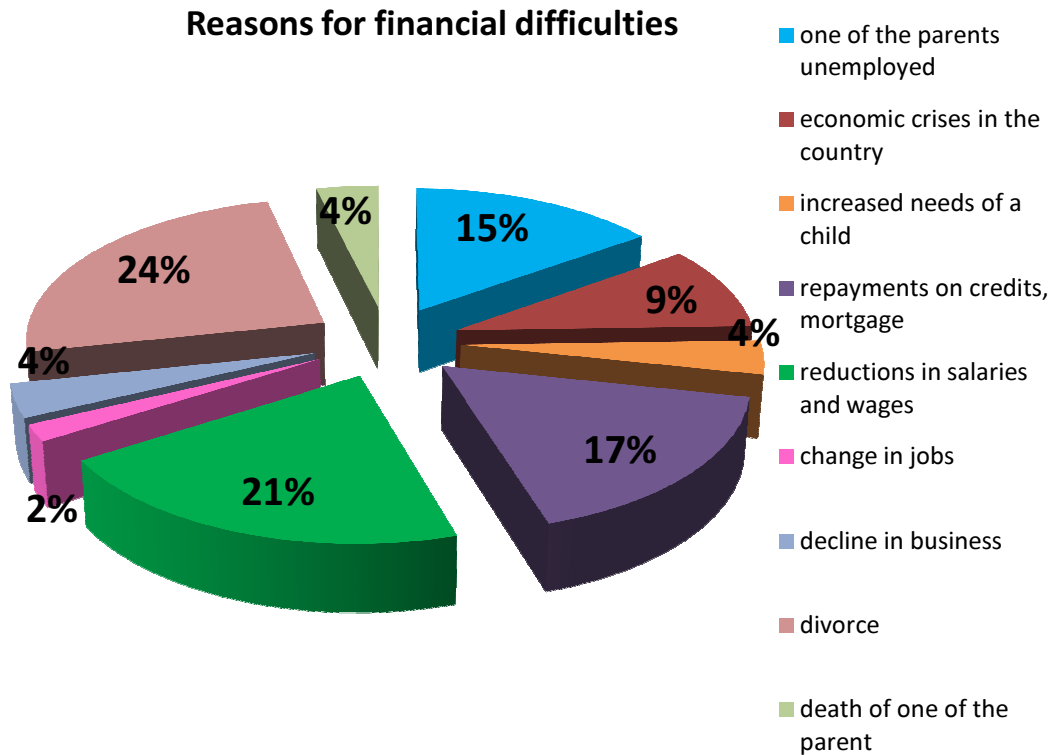


Figure A3.14: Reasons for Financial Difficulties

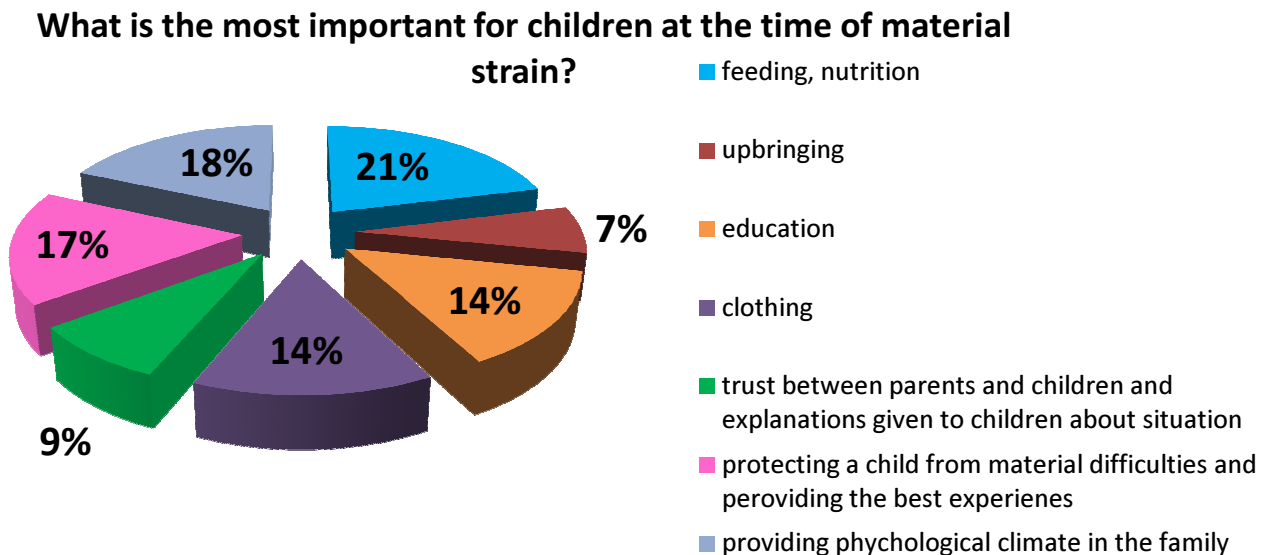


Figure A3.15: What is the Most Important for Children at the Time of Material Strain?

Appendix 1 to Chapter 4: Seemingly Unrelated Regression

Table A4.1: Seemingly Unrelated Regression for Mothers in Full Families

Variables	Weighted Average	Play Workday	Non- Workday	Weighted Average	Care Workday	Non- Workday
Child Characteristics						
Age, Ref: 3-6 (toddlers)						
0-2 (babies)	0.946*** (0.125)	0.0831 (0.0523)	1.193*** (0.146)	0.683*** (0.0979)	-0.00949 (0.0379)	0.830*** (0.121)
7-9 (primary school)	-0.598*** (0.0784)	-0.153*** (0.0428)	-0.996*** (0.103)	-0.337*** (0.0581)	-0.166*** (0.0330)	-0.499*** (0.0774)
10-14 (secondary school)	-0.880*** (0.0928)	-0.360*** (0.0465)	-1.350*** (0.118)	-0.632*** (0.0706)	-0.318*** (0.0360)	-0.887*** (0.0901)
Gender	-0.0644 (0.0727)	-0.0335 (0.0331)	-0.102 (0.0854)	0.00370 (0.0564)	-0.0410 (0.0262)	0.00706 (0.0684)
Number of siblings	0.207** (0.0656)	0.0417 (0.0306)	0.162* (0.0721)	0.244*** (0.0460)	0.0104 (0.0220)	0.256*** (0.0451)
Parent's characteristics						
Age at birth	-0.0361*** (0.00909)	-0.00746 (0.00428)	-0.0436*** (0.0104)	-0.0166* (0.00654)	-0.00548 (0.00293)	-0.0184* (0.00795)
Work status	-1.296*** (0.0986)	1.116*** (0.0464)	-0.670*** (0.112)	-0.888*** (0.0754)	0.712*** (0.0350)	-0.646*** (0.0875)
Wage	-0.0494 (0.0593)	0.0281 (0.0281)	-0.0235 (0.0610)	0.0280 (0.0423)	-0.00643 (0.0221)	0.0412 (0.0500)
Low education	-0.599*** (0.129)	-0.0273 (0.0536)	-0.498*** (0.140)	-0.231* (0.0909)	-0.000575 (0.0364)	-0.113 (0.105)
Heavy drinker	0.145 (0.122)	0.0709 (0.0597)	0.237 (0.148)	-0.0984 (0.0794)	0.0275 (0.0427)	-0.125 (0.0980)
Concern about getting necessities	0.0574 (0.0811)	0.0468 (0.0389)	0.115 (0.0955)	0.0399 (0.0624)	0.0291 (0.0303)	0.107 (0.0757)
Mother's perceived respect / Father's self-ranked power	0.0301 (0.0269)	-0.0190 (0.0127)	0.0331 (0.0303)	-0.0132 (0.0223)	-0.00888 (0.0100)	-0.0265 (0.0258)
Household characteristics						
Poverty, Ref: Never in poverty						
Once	-0.377** (0.130)	0.00441 (0.0631)	-0.270 (0.145)	-0.182* (0.0852)	0.0237 (0.0554)	-0.0664 (0.117)
Recurring	-0.167 (0.263)	-0.0435 (0.0784)	0.0562 (0.311)	-0.282 (0.171)	-0.0440 (0.0800)	-0.243 (0.212)
Persistent	-0.310 (0.210)	-0.0365 (0.0761)	-0.486* (0.236)	-0.363* (0.146)	-0.108* (0.0532)	-0.459** (0.166)
Can't pay for classes	-0.0891 (0.139)	-0.0417 (0.0539)	-0.251 (0.159)	-0.164 (0.0952)	-0.0380 (0.0454)	-0.286** (0.110)
Grandparent in the household	-0.237* (0.115)	-0.0102 (0.0521)	-0.207 (0.133)	-0.155 (0.0895)	-0.0710* (0.0339)	-0.118 (0.105)
Elder sibling in the household	-0.486*** (0.141)	-0.236*** (0.0655)	-0.508** (0.157)	-0.423*** (0.0996)	-0.102* (0.0496)	-0.469*** (0.116)
Relative outside household cared for child	-0.0495 (0.0988)	-0.0147 (0.0446)	0.0374 (0.118)	-0.104 (0.0703)	0.0108 (0.0328)	-0.105 (0.0873)
Local cost of child care per child	0.00259 (0.00170)	-0.000661 (0.000777)	0.00441* (0.00199)	0.00348* (0.00141)	0.000468 (0.000611)	0.00481** (0.00160)
Living conditions						
Living space m ² per head	-0.00117 (0.00607)	0.00116 (0.00288)	-0.00371 (0.00799)	-0.0121* (0.00472)	-0.00447* (0.00221)	-0.0132* (0.00549)
Rural	-0.489*** (0.113)	-0.160** (0.0492)	-0.707*** (0.136)	-0.151 (0.0920)	-0.0998** (0.0381)	-0.237* (0.110)
Constant						
	4.650*** (0.579)	0.339 (0.274)	5.095*** (0.618)	2.491*** (0.425)	0.551* (0.217)	2.731*** (0.494)
Model Characteristics						
Observations	4,454	3,952	3,952	4,454	3,952	3,952

Robust standard errors in parentheses; *** p<0.001, ** p<0.01, * p<0.05

Table A4.2: Seemingly Unrelated Regression for Fathers in Full Families

Variables	Play			Care		
	Weighted Average	Workday	Non- Workday	Weighted Average	Workday	Non- Workday
Child Characteristics						
Age, Ref: 3-6 (toddlers)						
0-2 (babies)	0.292*** (0.0637)	0.239*** (0.0450)	0.397*** (0.0939)	0.247*** (0.0371)	0.248*** (0.0387)	0.326*** (0.0528)
7-9 (primary school)	-0.301*** (0.0559)	-0.134*** (0.0343)	-0.619*** (0.0830)	-0.168*** (0.0319)	-0.180*** (0.0337)	-0.264*** (0.0436)
10-14 (secondary school)	-0.514*** (0.0589)	-0.241*** (0.0377)	-0.896*** (0.0916)	-0.303*** (0.0337)	-0.344*** (0.0340)	-0.455*** (0.0449)
Gender	-0.133** (0.0439)	-0.0827** (0.0297)	-0.226*** (0.0621)	-0.0192 (0.0270)	-0.0195 (0.0268)	-0.0382 (0.0352)
Number of siblings	0.0378 (0.0364)	0.0484 (0.0275)	0.0388 (0.0521)	0.0876** (0.0316)	0.0671** (0.0212)	0.109*** (0.0272)
Parent's characteristics						
Age at birth	-0.00979* (0.00420)	-0.00438 (0.00320)	-0.0206** (0.00638)	-0.00307 (0.00283)	-0.00202 (0.00279)	-0.00521 (0.00347)
Work status	-0.116 (0.0775)	0.586*** (0.0344)	0.175 (0.0903)	-0.0977 (0.0529)	-0.109* (0.0543)	-0.0109 (0.0594)
Wage	0.0844 (0.0436)	0.0121 (0.0279)	0.0559 (0.0648)	0.0480 (0.0257)	0.0674** (0.0242)	0.0895** (0.0303)
Low education	-0.259*** (0.0578)	-0.0635 (0.0435)	-0.273** (0.0902)	0.00163 (0.0489)	-0.0152 (0.0421)	0.0328 (0.0599)
Heavy drinker	0.00922 (0.0549)	-0.0332 (0.0370)	0.0563 (0.0836)	-0.0574 (0.0317)	-0.0609 (0.0318)	-0.0807 (0.0428)
Concern about getting necessities	0.0178 (0.0502)	-0.00813 (0.0362)	-0.0417 (0.0719)	0.0583 (0.0340)	0.0556 (0.0333)	0.0872 (0.0458)
Mother's perceived respect / Father's self-ranked power	-0.0417** (0.0140)	-0.00441 (0.00961)	-0.0136 (0.0232)	-0.0287*** (0.00845)	-0.0319*** (0.00920)	-0.0270* (0.0129)
Household characteristics						
Poverty, Ref: Never in poverty						
Once	0.0299 (0.0817)	-0.0454 (0.0471)	0.0870 (0.122)	-0.00117 (0.0530)	0.0343 (0.0579)	0.0140 (0.0728)
Recurring	0.156 (0.176)	0.0223 (0.141)	0.209 (0.279)	-0.106 (0.0924)	-0.0879 (0.0853)	-0.0712 (0.128)
Persistent	-0.0830 (0.129)	0.109 (0.0922)	-0.0369 (0.200)	-0.117* (0.0503)	-0.0650 (0.0752)	-0.0932 (0.106)
Can't pay for classes	-0.278*** (0.0598)	-0.198*** (0.0390)	-0.462*** (0.0936)	-0.113** (0.0399)	-0.113** (0.0404)	-0.126* (0.0557)
Grandparent in the household	-0.0705 (0.0660)	0.00101 (0.0436)	-0.0701 (0.0930)	-0.0861* (0.0370)	-0.0757* (0.0371)	-0.0798 (0.0505)
Elder sibling in the household	-0.243*** (0.0733)	-0.0968 (0.0544)	-0.314** (0.111)	-0.192*** (0.0404)	-0.170*** (0.0398)	-0.196*** (0.0524)
Relative outside household cared for child	-0.0296 (0.0543)	-0.0611 (0.0364)	-0.138 (0.0819)	0.0349 (0.0351)	0.0280 (0.0351)	0.0172 (0.0491)
Local cost of child care per child	0.00191 (0.00114)	-0.00141* (0.000658)	0.00627*** (0.00182)	0.000349 (0.000614)	0.000657 (0.000631)	0.00104 (0.000856)
Living conditions						
Living space m ² per head	-0.00512 (0.00365)	-0.00172 (0.00233)	-0.0204*** (0.00483)	0.000108 (0.00236)	0.000257 (0.00251)	-0.000553 (0.00313)
Rural	-0.182** (0.0685)	-0.186*** (0.0457)	-0.419*** (0.101)	-0.0642 (0.0438)	-0.0362 (0.0441)	-0.0834 (0.0586)
Constant						
	1.371** (0.431)	0.477 (0.266)	2.520*** (0.653)	0.378 (0.266)	0.206 (0.253)	0.128 (0.313)
Model Characteristics						
Observations	4,454	3,952	3,952	4,454	3,952	3,952

Robust standard errors in parentheses; *** p<0.001, ** p<0.01, * p<0.05

Table A4.3: Seemingly Unrelated Regression for Single Mothers

Variables	Play			Care		
	Weighted Average	Workday	Non- Workday	Weighted Average	Workday	Non- Workday
Child Characteristics						
Age, Ref: 3-6 (toddlers)						
0-2 (babies)	0.892** (0.272)	0.483** (0.184)	1.297** (0.417)	0.701** (0.215)	0.335** (0.130)	0.939** (0.300)
7-9 (primary school)	-0.415* (0.164)	-0.319** (0.109)	-0.879*** (0.235)	-0.117 (0.115)	-0.0274 (0.0831)	-0.208 (0.185)
10-14 (secondary school)	-1.089*** (0.141)	-0.564*** (0.107)	-1.888*** (0.257)	-0.802*** (0.110)	-0.538*** (0.0737)	-1.304*** (0.167)
Gender	-0.112 (0.128)	-0.0295 (0.0906)	-0.154 (0.201)	-0.192* (0.0917)	-0.152* (0.0633)	-0.323* (0.135)
Number of siblings	0.0339 (0.158)	0.177 (0.114)	0.254 (0.269)	0.102 (0.125)	0.229* (0.0973)	0.0926 (0.150)
Parent's characteristics						
Mother's age at birth	-0.0203 (0.0123)	-0.00605 (0.00891)	-0.0443* (0.0200)	-0.0202* (0.00970)	-0.00150 (0.00681)	-0.0353* (0.0137)
Mother's work status	-0.794* (0.388)	1.216*** (0.241)	0.382 (0.442)	-0.866* (0.345)	0.573** (0.203)	-0.197 (0.381)
Mother's wage	0.0117 (0.0913)	-0.0509 (0.0638)	0.0514 (0.145)	-0.000493 (0.0690)	-0.0289 (0.0488)	0.0201 (0.0905)
Mother with low education	0.0499 (0.228)	0.0758 (0.153)	0.197 (0.343)	-0.277* (0.118)	-0.0619 (0.0888)	-0.325 (0.183)
Mother's heavy drinking	0.0436 (0.174)	-0.0230 (0.137)	-0.0849 (0.277)	-0.0252 (0.140)	-0.00405 (0.104)	-0.184 (0.198)
Mother's concern about getting necessities	0.288* (0.135)	0.000244 (0.0894)	0.347 (0.198)	0.0208 (0.0984)	-0.0396 (0.0647)	0.0560 (0.147)
Mother's perceived respect	0.0421 (0.0376)	0.0602* (0.0275)	0.127* (0.0592)	0.0309 (0.0326)	0.00844 (0.0220)	0.0613 (0.0454)
Household characteristics						
Poverty, Ref: Never in poverty						
Once	0.100 (0.196)	-0.307* (0.127)	-0.00314 (0.284)	-0.0264 (0.140)	-0.191* (0.0973)	-0.0496 (0.190)
Recurring	0.459 (0.966)	0.829 (0.464)	0.898 (1.764)	0.576 (0.380)	0.694 (0.475)	0.615 (0.508)
Persistent	-0.262 (0.338)	-0.348 (0.244)	-0.344 (0.605)	-0.138 (0.179)	-0.134 (0.131)	-0.272 (0.259)
Can't pay for classes	-0.0894 (0.167)	-0.00570 (0.121)	-0.0580 (0.285)	-0.128 (0.110)	-0.0410 (0.0884)	-0.220 (0.167)
Grandparent in the household	0.0746 (0.162)	-0.0385 (0.0991)	-0.168 (0.248)	0.165 (0.123)	0.0341 (0.0848)	0.0891 (0.178)
Elder sibling in the household	-0.107 (0.220)	-0.0938 (0.190)	-0.307 (0.400)	-0.0786 (0.191)	-0.193 (0.147)	0.0263 (0.266)
Relative outside household cared for child	0.199 (0.189)	-0.00929 (0.123)	0.278 (0.289)	0.159 (0.139)	0.0578 (0.0914)	0.239 (0.193)
Local cost of child care per child	0.00503* (0.00241)	0.000309 (0.00164)	0.00764 (0.00395)	0.00201 (0.00190)	0.000147 (0.00110)	0.00275 (0.00259)
Living conditions						
Living space m ² per head	0.0175* (0.00703)	0.00476 (0.00469)	0.0169 (0.00991)	0.00243 (0.00539)	0.00435 (0.00474)	0.00106 (0.00683)
Rural	-0.321 (0.172)	-0.0675 (0.133)	-0.472 (0.260)	-0.178 (0.143)	-0.179* (0.0836)	-0.260 (0.196)
Constant						
	2.581** (0.991)	0.332 (0.691)	2.325 (1.494)	2.371** (0.759)	0.540 (0.539)	2.410* (0.998)
Model Characteristics						
Observations	690	690	690	690	690	690

Robust standard errors in parentheses; *** p<0.001, ** p<0.01, * p<0.05

Appendix 2 to Chapter 4: Blockwise regression

Table A4.4: Block-Wise Tobit Regression for Full Families

Variables	Mother		Father	
	Play	Care	Play	Care
Block 1				
Child Characteristics				
Age, Ref: 3-6 (toddlers)				
0-2 (babies)	1.069*** (0.0868)	0.790*** (0.0588)	0.190*** (0.0489)	0.218*** (0.0251)
7-9 (primary school)	-0.562*** (0.0652)	-0.378*** (0.0500)	-0.325*** (0.0503)	-0.209*** (0.0290)
10-14 (secondary school)	-1.015*** (0.0775)	-0.950*** (0.0625)	-0.576*** (0.0547)	-0.441*** (0.0364)
Gender	-0.102 (0.0619)	-0.0634 (0.0463)	-0.0917* (0.0400)	0.000721 (0.0245)
Number of siblings	0.0274 (0.0527)	0.150*** (0.0348)	-0.0446 (0.0272)	0.0439* (0.0197)
Block 2				
Child Characteristics				
Age, Ref: 3-6 (toddlers)				
0-2 (babies)	0.742*** (0.0925)	0.523*** (0.0667)	0.224*** (0.0493)	0.233*** (0.0257)
7-9 (primary school)	-0.573*** (0.0633)	-0.403*** (0.0485)	-0.326*** (0.0504)	-0.213*** (0.0299)
10-14 (secondary school)	-0.991*** (0.0747)	-0.917*** (0.0598)	-0.595*** (0.0564)	-0.453*** (0.0384)
Gender	-0.0641 (0.0613)	-0.0455 (0.0452)	-0.103* (0.0403)	-0.00342 (0.0249)
Number of siblings	-0.00553 (0.0544)	0.109** (0.0343)	-0.00216 (0.0310)	0.0648** (0.0229)
Parent's characteristics				
Age at birth	-0.0268*** (0.00665)	-0.0206*** (0.00487)	-0.00663 (0.00403)	-0.00427 (0.00273)
Work status	-0.919*** (0.0890)	-0.713*** (0.0650)	0.236** (0.0868)	0.0621 (0.0499)
Wage (log)	0.188*** (0.0444)	0.154*** (0.0301)	0.185*** (0.0335)	0.0813*** (0.0203)

Block 3				
Child Characteristics				
Age, Ref: 3-6 (toddlers)				
0-2 (babies)	0.739*** (0.0911)	0.520*** (0.0658)	0.232*** (0.0493)	0.235*** (0.0257)
7-9 (primary school)	-0.579*** (0.0633)	-0.404*** (0.0484)	-0.329*** (0.0501)	-0.209*** (0.0299)
10-14 (secondary school)	-1.012*** (0.0748)	-0.926*** (0.0598)	-0.602*** (0.0562)	-0.451*** (0.0384)
Gender	-0.0635 (0.0600)	-0.0439 (0.0449)	-0.108** (0.0400)	-0.00480 (0.0249)
Number of siblings	0.0593 (0.0546)	0.134*** (0.0356)	0.00171 (0.0314)	0.0641** (0.0229)
Parent's characteristics				
Age at birth	-0.0368*** (0.00682)	-0.0253*** (0.00512)	-0.00908* (0.00406)	-0.00477 (0.00270)
Work status	-0.976*** (0.0865)	-0.734*** (0.0638)	0.178* (0.0835)	0.0592 (0.0506)
Wage (log)	0.138** (0.0436)	0.136*** (0.0306)	0.168*** (0.0335)	0.0811*** (0.0207)
Low education	-0.682*** (0.109)	-0.289*** (0.0724)	-0.312*** (0.0622)	-0.0389 (0.0409)
Heavy drinker	0.0932 (0.0954)	-0.0779 (0.0645)	0.00396 (0.0529)	-0.0722* (0.0298)

Block 4				
Child Characteristics				
Age, Ref: 3-6 (toddlers)				
0-2 (babies)	0.736*** (0.0908)	0.515*** (0.0657)	0.227*** (0.0493)	0.231*** (0.0255)
7-9 (primary school)	-0.581*** (0.0631)	-0.404*** (0.0483)	-0.331*** (0.0501)	-0.208*** (0.0299)
10-14 (secondary school)	-1.012*** (0.0748)	-0.925*** (0.0596)	-0.600*** (0.0560)	-0.449*** (0.0382)
Gender	-0.0618 (0.0598)	-0.0434 (0.0449)	-0.113** (0.0398)	-0.00609 (0.0248)
Number of siblings	0.0636 (0.0552)	0.136*** (0.0358)	0.00354 (0.0307)	0.0628** (0.0218)
Parent's characteristics				
Age at birth	-0.0369*** (0.00686)	-0.0253*** (0.00514)	-0.00932* (0.00401)	-0.00490 (0.00269)
Work status	-0.985*** (0.0866)	-0.735*** (0.0632)	0.178* (0.0831)	0.0648 (0.0506)
Wage (log)	0.127** (0.0441)	0.127*** (0.0311)	0.179*** (0.0350)	0.0953*** (0.0213)
Low education	-0.659*** (0.110)	-0.278*** (0.0727)	-0.312*** (0.0617)	-0.0380 (0.0407)
Heavy drinker	0.0957 (0.0949)	-0.0803 (0.0644)	0.00842 (0.0530)	-0.0707* (0.0298)
Concern about getting necessities	-0.0321 (0.0684)	-0.0775 (0.0500)	-0.0654 (0.0479)	0.0427 (0.0299)
Mother's perceived respect / Father's self-ranked power	0.0501* (0.0220)	0.0154 (0.0171)	-0.0562*** (0.0137)	-0.0301*** (0.00799)

Block 5				
Child Characteristics				
Age, Ref: 3-6 (toddlers)				
0-2 (babies)	0.702*** (0.0909)	0.487*** (0.0657)	0.239*** (0.0497)	0.229*** (0.0256)
7-9 (primary school)	-0.568*** (0.0631)	-0.395*** (0.0479)	-0.337*** (0.0493)	-0.205*** (0.0299)
10-14 (secondary school)	-1.009*** (0.0748)	-0.924*** (0.0592)	-0.604*** (0.0558)	-0.455*** (0.0381)
Gender	-0.0628 (0.0593)	-0.0431 (0.0448)	-0.119** (0.0395)	-0.00791 (0.0246)
Number of siblings	0.0958 (0.0560)	0.165*** (0.0380)	0.0174 (0.0323)	0.0778*** (0.0234)
Parent's characteristics				
Age at birth	-0.0376*** (0.00685)	-0.0262*** (0.00512)	-0.00995* (0.00402)	-0.00536* (0.00270)
Work status	-1.011*** (0.0855)	-0.754*** (0.0626)	0.151 (0.0819)	0.0402 (0.0511)
Wage (log)	0.0898* (0.0449)	0.0955** (0.0313)	0.153*** (0.0360)	0.0704** (0.0219)
Low education	-0.622*** (0.111)	-0.233** (0.0736)	-0.306*** (0.0614)	-0.0269 (0.0407)
Heavy drinker	0.0940 (0.0945)	-0.0807 (0.0638)	0.00875 (0.0522)	-0.0713* (0.0297)
Concern about getting necessities	0.0133 (0.0687)	-0.0382 (0.0500)	-0.0541 (0.0479)	0.0569 (0.0296)
Mother's perceived respect / Father's self-ranked power	0.0470* (0.0218)	0.0106 (0.0170)	-0.0605*** (0.0135)	-0.0320*** (0.00794)
Household characteristics				
Poverty, Ref: Never in poverty				
Once	-0.403*** (0.108)	-0.234** (0.0796)	-0.0185 (0.0787)	-0.0719 (0.0485)
Recurring	-0.177 (0.259)	-0.278 (0.170)	0.176 (0.187)	-0.138 (0.0946)
Persistent	-0.427* (0.189)	-0.387** (0.131)	-0.126 (0.131)	-0.168* (0.0827)
Can't pay for classes	-0.0827 (0.102)	-0.125 (0.0695)	-0.266*** (0.0582)	-0.102** (0.0372)

Block 6				
Child Characteristics				
Age, Ref: 3-6 (toddlers)				
0-2 (babies)	0.708*** (0.0914)	0.483*** (0.0652)	0.239*** (0.0521)	0.223*** (0.0268)
7-9 (primary school)	-0.496*** (0.0714)	-0.346*** (0.0548)	-0.306*** (0.0529)	-0.182*** (0.0317)
10-14 (secondary school)	-0.891*** (0.0826)	-0.834*** (0.0663)	-0.539*** (0.0598)	-0.406*** (0.0401)
Gender	-0.0701 (0.0589)	-0.0485 (0.0445)	-0.130** (0.0396)	-0.0171 (0.0243)
Number of siblings	0.141* (0.0573)	0.200*** (0.0386)	0.0477 (0.0347)	0.0991*** (0.0215)
Parent's characteristics				
Age at birth	-0.0259*** (0.00718)	-0.0163** (0.00537)	-0.00500 (0.00395)	-0.00106 (0.00263)
Work status	-1.014*** (0.0871)	-0.738*** (0.0648)	0.135 (0.0816)	0.0263 (0.0502)
Wage (log)	0.0750 (0.0448)	0.0857** (0.0313)	0.146*** (0.0358)	0.0661** (0.0217)
Low education	-0.595*** (0.112)	-0.220** (0.0732)	-0.297*** (0.0610)	-0.0191 (0.0405)
Heavy drinker	0.0904 (0.0942)	-0.0833 (0.0636)	0.00857 (0.0521)	-0.0723* (0.0294)
Concern about getting necessities	0.00442 (0.0683)	-0.0424 (0.0497)	-0.0616 (0.0479)	0.0516 (0.0291)
Mother's perceived respect / Father's self-ranked power	0.0503* (0.0217)	0.0123 (0.0169)	-0.0579*** (0.0137)	-0.0292*** (0.00788)
Household characteristics				
Poverty, Ref: Never in poverty				
Once	-0.409*** (0.109)	-0.231** (0.0794)	-0.0173 (0.0783)	-0.0726 (0.0479)
Recurring	-0.242 (0.245)	-0.322* (0.158)	0.134 (0.185)	-0.176 (0.0950)
Persistent	-0.457* (0.190)	-0.397** (0.130)	-0.142 (0.133)	-0.192* (0.0805)
Can't pay for classes	-0.0653 (0.103)	-0.109 (0.0695)	-0.258*** (0.0581)	-0.0973** (0.0369)
Father in the household	0.00281 (0.0860)	0.0839 (0.0678)		
Grandparent in the household	-0.182* (0.0885)	-0.0554 (0.0657)	-0.0772 (0.0602)	-0.0681 (0.0349)
Elder sibling in the household	-0.547*** (0.130)	-0.462*** (0.0950)	-0.340*** (0.0783)	-0.314*** (0.0516)
Relative outside household cared for child	0.0119 (0.00816)	0.00589 (0.00610)	0.00364 (0.00589)	0.00129 (0.00343)

Full Model				
Child Characteristics				
Age, Ref: 3-6 (toddlers)				
0-2 (babies)	0.703*** (0.0911)	0.474*** (0.0646)	0.232*** (0.0519)	0.222*** (0.0267)
7-9 (primary school)	-0.493*** (0.0712)	-0.336*** (0.0545)	-0.305*** (0.0526)	-0.181*** (0.0319)
10-14 (secondary school)	-0.907*** (0.0828)	-0.819*** (0.0669)	-0.543*** (0.0602)	-0.407*** (0.0409)
Gender	-0.0755 (0.0586)	-0.0556 (0.0442)	-0.135*** (0.0393)	-0.0192 (0.0243)
Number of siblings	0.179** (0.0563)	0.201*** (0.0385)	0.0582 (0.0348)	0.106*** (0.0221)
Parent's characteristics				
Age at birth	-0.0286*** (0.00713)	-0.0153** (0.00525)	-0.00539 (0.00396)	-0.00120 (0.00267)
Work status	-0.982*** (0.0854)	-0.723*** (0.0633)	0.0864 (0.0819)	0.00820 (0.0497)
Wage (log)	0.00736 (0.0460)	0.0549 (0.0327)	0.0972** (0.0371)	0.0535* (0.0219)
Low education	-0.530*** (0.111)	-0.191** (0.0729)	-0.299*** (0.0606)	-0.0175 (0.0401)
Heavy drinker	0.0640 (0.0937)	-0.0997 (0.0631)	-0.000213 (0.0522)	-0.0757* (0.0296)
Concern about getting necessities	0.0677 (0.0674)	-0.00523 (0.0494)	-0.0363 (0.0477)	0.0571 (0.0295)
Mother's perceived respect / Father's self-ranked power	0.0429* (0.0213)	0.00772 (0.0167)	-0.0539*** (0.0136)	-0.0283*** (0.00786)
Household characteristics				
Poverty, Ref: Never in poverty				
Once	-0.346** (0.108)	-0.207** (0.0788)	-0.00268 (0.0781)	-0.0639 (0.0482)
Recurring	-0.153 (0.241)	-0.274 (0.159)	0.167 (0.186)	-0.162 (0.0970)
Persistent	-0.342 (0.189)	-0.338* (0.131)	-0.102 (0.132)	-0.171* (0.0806)
Can't pay for classes	-0.0485 (0.103)	-0.132 (0.0692)	-0.266*** (0.0579)	-0.0969** (0.0370)
Father in the household	0.00780 (0.0857)	0.0645 (0.0682)		
Grandparent in the household	-0.166 (0.0867)	-0.0653 (0.0646)	-0.0799 (0.0597)	-0.0667 (0.0351)
Elder sibling in the household	-0.539*** (0.128)	-0.461*** (0.0947)	-0.338*** (0.0772)	-0.316*** (0.0513)
Relative outside household cared for child	0.0110 (0.00807)	0.00489 (0.00598)	0.00244 (0.00587)	0.000621 (0.00339)
Living conditions				
Local cost of child care per child	0.00182 (0.00129)	0.00151 (0.00100)	0.000983 (0.000953)	-0.000378 (0.000517)
Living space m ² per head	0.00201 (0.00468)	-0.0115** (0.00378)	-0.00539 (0.00330)	-0.00104 (0.00218)
Rural	-0.505*** (0.0934)	-0.221** (0.0726)	-0.230*** (0.0643)	-0.113** (0.0408)
Model Characteristics				
Observations	5,558	5,558	4,786	4,786

Robust standard errors in parentheses; *** p<0.001, ** p<0.01, * p<0.05

Appendix 1 to Chapter 5: Estimates for Single Mothers

Table A5.1: Logistic Estimate on Non-Participation of Single Mothers

Variables	Play		Care	
Child Characteristics				
Age, Ref: 3-6 (toddlers)				
0-2 (babies)	0.378**	(0.116)	0.472**	(0.124)
7-9 (primary school)	0.162***	(0.0500)	0.139***	(0.0405)
10-14 (secondary school)	0.690	(0.153)	0.715	(0.141)
Gender	0.768	(0.245)	0.717	(0.227)
Single Child	1.287	(0.289)	1.429	(0.299)
Any illness in the last 30 days	0.986	(0.0335)	1.033	(0.0266)
Hours of external care per day	1.011**	(0.00408)	1.004	(0.00343)
Parent's characteristics				
Mother's age at birth	0.968	(0.0220)	0.974	(0.0212)
Mother's low education	1.393	(0.443)	1.392	(0.419)
Mother's work status	1.164	(0.336)	0.781	(0.196)
Mother's bad health	2.559	(1.602)	1.193	(0.556)
Mother's heavy drinking	2.144*	(0.825)	1.202	(0.316)
Household characteristics				
Persistent poverty	0.588	(0.290)	0.997	(0.451)
Can't pay for classes	0.546*	(0.144)	0.471**	(0.112)
Grandparent in the household	0.768	(0.199)	1.180	(0.281)
Elder sibling in the household	0.576	(0.205)	0.686	(0.250)
Local cost of child care	1.011**	(0.00408)	1.004	(0.00343)
Living conditions				
Living space m² per head	1.016	(0.0164)	0.991	(0.0134)
Rural	0.605	(0.160)	0.607*	(0.150)
Constant	32.65***	(23.71)	22.94***	(16.72)
Model Characteristics				
Observations in pooled sample	918		918	
Pseudo R²	0.134		0.195	
Robust standard errors in parentheses				
*** p<0.001, ** p<0.01, * p<0.05				

Non-Participation of Single Mothers

Contrary to the previous analysis of a mother's non-participation in full families, this sub-group of children has no father who could step in and compensate for a mother's non-involvement. However, 56% of children with a single mother share a household with one or two grandparents compared to 21% of full families. More children in this sample (68%) use formal and informal care (11%) compared to those from full families: 56% and 9% respectively. There is no much variation between the children in their type of settlement except that we find more children in single-mother households living in

metropolitan areas (12%) compared to children in full families (8%). Finally, and as one might expect, single mothers are more active in the labour market, with 68% of them working compared to 56% in full families.

A single mother's non-involvement in play and care is higher than those from full families: 15% of children in our sample have a single mother not participating in play and a quarter (25%) have a single mother not participating in care compared to 11% and 19% in the full families. Table A5.1 presents two logit models predicting a mother's non-participation in leisure and care activities with children within the reported 30-day interval.

We find that the most important predictor of a single mother's non-involvement in play is her heavy drinking habit: it increases the odds by a factor of 2, controlling for child characteristics and other factors. Single mothers who reported heavy drinking are less likely to be able to engage in play or any other leisure activity with a child. We did not see this effect for mothers in full families. Quite possibly, cumulative problems of material, psychological and emotional nature are associated with single mothers' drinking levels. Since single parenthood can also be endogenous to drinking this is a very complex set of causal links that need to be more fully explored in further research. What is clear from our finding is that the burden of single parenting might be too much for some mothers, and when they do not have a supporting spouse their parental contribution might be affected.

We also find that the self-evaluated inability to pay for extra classes for children is the only predictor that explains variation in play as well as in care. However, the effect is the opposite of the one we observed in full families. In terms of both play and care single mothers seem to compensate for their lack of resources by more involvement: it reduces the odds of mother's non-participation in care by 44% in leisure activities and 53% in childcare. This means that single mothers who experience some sort of hardship but yet place a high value on their child's development are likely to contribute more of their own time to children. Neither mother's work status nor her low education or poverty status seem to be associated with her parental strategies here.

Appendix 2 to Chapter 5: Blockwise Regression

Table A5.2: Nested (Block-wise) Logistic Regression for Single Mothers Play Time

Variables	Block 1	Block 2	Play Block 3	Block 4	Full Sample
Child Characteristics					
Age, Ref: 3-6 (toddlers)					
0-2 (babies)	0.426** (0.134)	0.396** (0.125)	0.400** (0.124)	0.369** (0.114)	0.378** (0.116)
7-9 (primary school)	0.195*** (0.0611)	0.180*** (0.0580)	0.192*** (0.0598)	0.166*** (0.0511)	0.162*** (0.0500)
10-14 (secondary school)	0.718 (0.154)	0.691 (0.149)	0.716 (0.155)	0.718 (0.158)	0.690 (0.153)
Gender	0.873 (0.271)	0.837 (0.257)	0.777 (0.247)	0.796 (0.256)	0.768 (0.245)
Single Child	1.339 (0.293)	1.340 (0.295)	1.297 (0.288)	1.252 (0.280)	1.287 (0.289)
Any illness in the last 30 days	1.005 (0.0394)	0.993 (0.0371)	0.999 (0.0328)	0.986 (0.0327)	0.986 (0.0335)
Hours of external care per day				1.012** (0.00395)	1.011** (0.00408)
Parent's characteristics					
Mother's age at birth		0.973 (0.0198)	0.969 (0.0196)	0.971 (0.0214)	0.968 (0.0220)
Mother's low education		0.916 (0.295)	1.101 (0.370)	1.262 (0.420)	1.393 (0.443)
Mother's work status		1.417 (0.419)	1.262 (0.366)	1.177 (0.339)	1.164 (0.336)
Mother's bad health		1.949 (1.074)	2.229 (1.316)	2.332 (1.406)	2.559 (1.602)
Mother's heavy drinking		1.999* (0.664)	2.052* (0.729)	2.207* (0.836)	2.144* (0.825)
Household characteristics					
Persistent poverty			0.536 (0.246)	0.492 (0.233)	0.588 (0.290)
Can't pay for classes			0.495** (0.128)	0.523* (0.137)	0.546* (0.144)
Grandparent in the household				0.710 (0.177)	0.768 (0.199)
Elder sibling in the household				0.542 (0.191)	0.576 (0.205)
Local cost of child care				1.012** (0.00395)	1.011** (0.00408)
Living conditions					
Living space m ² per head					1.016 (0.0164)
Rural					0.605 (0.160)
Constant	15.50*** (5.922)	24.40*** (16.04)	36.56*** (24.74)	31.78*** (22.37)	32.65*** (23.71)
Model Characteristics					
Observations in pooled sample	918	918	918	918	918
Pseudo R ²	0.069	0.084	0.103	0.126	0.134
Robust standard errors in parentheses *** p<0.001, ** p<0.01, * p<0.05					

Table A5.3: Nested (Block-wise) Logistic Regression for Single Mothers Care Time

Variables	Block 1	Block 2	Care Block 3	Block 4	Full Sample
Child Characteristics					
Age, Ref: 3-6 (toddlers)					
0-2 (babies)	0.459** (0.115)	0.454** (0.114)	0.446** (0.113)	0.460** (0.120)	0.472** (0.124)
7-9 (primary school)	0.122*** (0.0325)	0.125*** (0.0339)	0.128*** (0.0343)	0.136*** (0.0396)	0.139*** (0.0405)
10-14 (secondary school)	0.730 (0.143)	0.720 (0.141)	0.733 (0.145)	0.733 (0.145)	0.715 (0.141)
Gender	0.694 (0.216)	0.716 (0.221)	0.702 (0.218)	0.678 (0.211)	0.717 (0.227)
Single Child	1.415 (0.279)	1.427 (0.290)	1.414 (0.290)	1.415 (0.296)	1.429 (0.299)
Any illness in the last 30 days	1.035 (0.0255)	1.030 (0.0255)	1.031 (0.0256)	1.032 (0.0267)	1.033 (0.0266)
Hours of external care per day				1.005 (0.00336)	1.004 (0.00343)
Parent's characteristics					
Mother's age at birth		0.969 (0.0188)	0.965 (0.0187)	0.971 (0.0205)	0.974 (0.0212)
Mother's low education		1.114 (0.322)	1.247 (0.371)	1.240 (0.376)	1.392 (0.419)
Mother's work status		0.923 (0.220)	0.829 (0.206)	0.810 (0.202)	0.781 (0.196)
Mother's bad health		1.004 (0.459)	1.078 (0.503)	1.140 (0.521)	1.193 (0.556)
Mother's heavy drinking		1.210 (0.309)	1.193 (0.309)	1.200 (0.309)	1.202 (0.316)
Household characteristics					
Persistent poverty			0.819 (0.373)	0.875 (0.402)	0.997 (0.451)
Can't pay for classes			0.473** (0.112)	0.489** (0.116)	0.471** (0.112)
Grandparent in the household				1.199 (0.278)	1.180 (0.281)
Elder sibling in the household				0.729 (0.261)	0.686 (0.250)
Local cost of child care				1.005 (0.00336)	1.004 (0.00343)
Living conditions					
Living space m ² per head					0.991 (0.0134)
Rural					0.607* (0.150)
Constant	8.945*** (3.209)	19.64*** (12.53)	28.03*** (18.07)	19.04*** (13.29)	22.94*** (16.72)
Model Characteristics					
Observations in pooled sample	918	918	918	918	918
Pseudo R ²	0.165	0.170	0.184	0.189	0.195
Robust standard errors in parentheses *** p<0.001, ** p<0.01, * p<0.05					

Appendix to Chapter 6: Full Models

Table A6.1: Full Model of Mothers' Play Time as a Function of Regional Unemployment

VARIABLES	coefficient (std error)
Regional unemployment	-0.06704 (0.03549)
Interaction between unemployment and work status	-0.04234 (0.02822)
Babies	0.47652 (0.22554)
Pre-schoolers	-0.20394 (0.15125)
Secondary-schoolers	-0.18219 (0.22746)
Work status	-1.09038** (0.28340)
Number of siblings	0.82536 (0.45407)
Below national poverty line	-0.14444 (0.20848)
Living space per head	0.00091 (0.00517)
Rural settlement	0.50430* (0.17246)
Self-reported respect from others	0.10606* (0.03692)
Regional pre-school provision	0.01139** (0.00322)
Average hours of non-household care per day	-0.02147 (0.01164)
Year dummy 2008	-0.18803 (0.14849)
Year dummy 2009	-0.26786 (0.12759)
Observations	4,377
Number of children	2,258
R-squared	0.14998
Robust standard errors in parentheses	
*** p<0.001, ** p<0.01, * p<0.05	

Table A6.2: Full Model of Fathers' Care Time as a Function of RGP

VARIABLES	coefficient (std error)
RGP	0.00593* (0.00200)
Interaction between RGP and work status	0.00146 (0.00093)
Babies	0.17001 (0.12632)
Pre-schoolers	-0.11132 (0.07572)
Secondary-schoolers	-0.02852 (0.12036)
Work status	-0.59219* (0.18239)
Number of siblings	0.83499* (0.34176)
Below national poverty line	-0.19880 (0.19846)
Living space per head	0.00771 (0.00550)
Rural settlement	-0.12897 (0.08814)
Regional pre-school provision	0.00672*** (0.00117)
Average hours of non-household care per day	-0.01054 (0.00829)
Year dummy 2008	0.20732 (0.09612)
Year dummy 2009	-0.06503 (0.05771)
Observations	2,075
Number of children	1,273
R ²	0.11742
Robust standard errors in parentheses	
*** p<0.001, ** p<0.01, * p<0.05	

Table A6.3: Mothers' Play Time as a Function of Regional Unemployment under Poverty

VARIABLES	coefficient (std error)
Regional Unemployment	-0.52568*** (0.07066)
Interaction between regional unemployment and work status	0.28518** (0.06508)
Babies	0.60441 (0.26466)
Pre-Schoolers	-0.37976 (0.49557)
Secondary Schoolers	-0.18213 (0.92088)
Number of siblings	0.55966 (1.23781)
Hours of external care per day	-0.00208 (0.02610)
Mother's work status	-4.41978* (1.37180)
Self-reported respect received from others	0.22853 (0.12724)
Living space per head	-0.04377 (0.04695)
Rural settlement	0.63450* (0.26693)
Regional pre-school provision	0.07591** (0.01984)
Year dummy 2008	-0.01032 (0.46803)
Year dummy 2009	0.14790 (0.33365)
Number of observations	365
Number of children	302
R-squared	0.65059
Robust standard errors in parentheses	
*** p<0.001, ** p<0.01, * p<0.05	

Table A6.4: Fathers' Care Time as a Function of RGP under Poverty

VARIABLES	coef
Regional GDP	0.01696*** (0.00280)
Interactin between GDP and work status	-0.02307** (0.00609)
Babies	-0.08606 (0.19696)
Pre-schoolers	0.01644 (0.17528)
Secondary-schoolers	-0.14793 (0.30873)
Work status	2.51429*** (0.46256)
Living spare per head	0.00723 (0.00651)
Rural settlement	-0.24913 (0.49285)
Regional pre-school provision	0.07369 (0.19669)
Average hours of non-household care per day	-0.14624 (0.15780)
Year dummy 2008	0.00823 (0.00441)
Year dummy 2009	0.00879 (0.01653)
Observations	-0.07735 (0.30543)
R ²	-0.13477 (0.29787)
Number of children	171
Robust standard errors in parentheses	
*** p<0.001, ** p<0.01, * p<0.05	

Table A6.5: The Influence of Local Pre-School Provision on Mothers' and Fathers' Time

PRESCHOOL		PLAY				CARE			
		Mother		Father		Mother		Father	
Sample		preschool	R ²	preschool	R ²	preschool	R ²	preschool	R ²
Full Sample		0.00867* (0.00282)	0.15	0.01521*** (0.00137)	0.03	-0.00701* (0.00224)	0.12	0.00672*** (0.00117)	0.12
Age Group	Baby	0.00076 (0.00509)	0.22	-0.01270** (0.00240)	0.03	-0.02824** (0.00551)	0.17	-0.01073 (0.00470)	0.17
	Kindergarden	0.02231*** (0.00388)	0.11	0.03528*** (0.00331)	0.04	0.00382 (0.00176)	0.08	0.00885** (0.00188)	0.20
	Primary School	-0.00680* (0.00220)	0.07	0.02501*** (0.00166)	0.04	0.01088** (0.00248)	0.11	0.00801*** (0.00138)	0.14
	Secondary School	0.01545 (0.00784)	0.13	-0.00750 (0.00429)	0.13	0.02119** (0.00437)	0.17	-0.03628 (0.02638)	0.16
Work Status	Working	0.01324** (0.00330)	0.04	0.01897*** (0.00194)	0.04	0.01645*** (0.00249)	0.09	0.00622** (0.00121)	0.13
	Not Working	0.02729* (0.01019)	0.05	0.00380 (0.00344)	0.15	-0.03913*** (0.00362)	0.12	0.00430 (0.00222)	0.53
Professional Education	Yes	0.00738* (0.00292)	0.16	0.01849*** (0.00127)	0.04	-0.00314 (0.00224)	0.13	0.01075*** (0.00081)	0.11
	No	0.01273* (0.00466)	0.20	-0.01849*** (0.00219)	0.09	-0.01780*** (0.00255)	0.21	-0.03419*** (0.00371)	0.47
Siblings	No Siblings	0.01258*** (0.00206)	0.15	-0.01221*** (0.00074)	0.04	0.01764*** (0.00265)	0.10	-0.03135*** (0.00302)	0.08
	Siblings	-0.00403 (0.00470)	0.15	0.02514*** (0.00190)	0.06	-0.01370** (0.00338)	0.15	0.00893** (0.00211)	0.12
Spouse	In Household	0.00801* (0.00325)	0.17	0.01079*** (0.00150)	0.03	-0.00545 (0.00252)	0.14	0.00443*** (0.00118)	0.12
	Not In Household	0.00234 (0.00651)	0.09	0.03314* (0.01121)	0.93	-0.02213*** (0.00194)	0.11	0.00775*** (0.00000)	1.00
Settlement	Rural	0.01404* (0.00442)	0.24	0.01871*** (0.00321)	0.10	-0.00888** (0.00244)	0.18	0.00800** (0.00152)	0.18
	Urban	-0.11619* (0.04467)	0.16	-0.05958 (0.03370)	0.03	0.07187 (0.06928)	0.14	-0.07787 (0.08377)	0.13
	Metropolitan	0.10239 (0.02212)	0.17	-0.38137 (0.08321)	0.19	-0.02797 (0.02769)	0.14	0.54091 (0.10345)	0.45
Poverty	In Poverty	0.06110 (0.02629)	0.60	-0.29747 (0.38638)	0.39	-0.02707* (0.01026)	0.44	0.00797* (0.00253)	0.52
	Not In Poverty	0.01339** (0.00378)	0.14	0.01633*** (0.00139)	0.03	0.00033 (0.00205)	0.12	0.00390 (0.00237)	0.12
Elder Siblings	In Household	0.01553 (0.00715)	0.22	-0.01343* (0.00434)	0.12	-0.06748 (0.23585)	0.29	0.09584 (0.12195)	0.34
	Not In Household	0.01124* (0.00332)	0.16	0.01685*** (0.00129)	0.04	-0.00799* (0.00229)	0.13	0.00694*** (0.00112)	0.14
Grandparents	In Household	0.00189 (0.00363)	0.17	0.00581 (0.00317)	0.05	0.00319 (0.00177)	0.17	0.00047 (0.00291)	0.15
	Not In Household	0.00963* (0.00325)	0.16	0.01998*** (0.00195)	0.04	-0.01503*** (0.00215)	0.14	0.00847** (0.00160)	0.15

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