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Market**

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ABSTRACT

Families, Public Policies, and the Labor Market

Over the past two decades, there have been significant changes in family dynamics and labor market interactions, with shifts in fertility, marriage, divorce, cohabitation, family labor supply, gender inequality, and childrearing. This chapter examines the impact of government policies on these trends, highlighting the latest research across different OECD countries. The best evidence comes from administrative data and modern econometric methods. The chapter concludes with a summary of lessons learned and directions for future research.

Keywords: family economics, public policies

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1 Introduction

The past two decades has seen a changing landscape of how families and the labor market interact. There have been sweeping changes in fertility, marriage, cohabitation, divorce, child-rearing, and the allocation of men's and women's time to paid and unpaid work. This chapter explores the role of government policies in influencing these trends as they relate to the labor market.

Since the last Handbook of Labor Economics appeared roughly 15 years ago, there has been a sharp increase in the availability and use of administrative data, particularly in Europe, but also in select countries worldwide. This has coincided with a continuing rise in the number of young, talented labor economists worldwide. At the same time, there has been a continuing evolution and refinement of convincing research designs in applied econometrics. Combined, these recent developments have spurred a new generation of research on how public policies affect families. In this chapter, we review this literature.

To ground the discussion, we begin by laying out a conceptual framework. We outline the incentives and costs which couples and families face when making labor market decisions. This in turn provides a frame of reference for understanding the interaction of public policies and key family outcomes. We then provide a brief overview of the policy landscape across OECD countries.

The ensuing discussion is organized into six topical areas: (i) fertility, (ii) marriage, divorce, and cohabitation, (iii) family labor supply, (iv) gender inequality, (v) child outcomes, and (vi) norms and spillovers. In each section, we first present descriptive statistics on these outcomes across OECD countries, when possible, for 2019. Although data for many countries is available for later periods, we focus on 2019 since it is prior to the covid pandemic, and this chapter is not

about the effect of pandemic-era policies. We also examine trends over the same set of OECD countries over time, focusing on recent patterns for the period from 2001 to 2019 insofar as the data is available.

We classify countries into six distinct groups: Northern Europe (Iceland, Denmark, Sweden, Norway, and Finland), Central Europe (Switzerland, Netherlands, Luxembourg, Ireland, Germany, France, Belgium, and Austria), Southern Europe (Spain, Portugal, Malta, Italy, Greece, and Cyprus), Eastern Europe (Slovenia, Slovak Republic, Romania, Poland, Lithuania, Latvia, Hungary, Estonia, Czechia, Croatia, and Bulgaria), Anglo-Saxon countries (United States, United Kingdom, New Zealand, Canada, and Australia), and a miscellaneous category (Turkey, Mexico, Korea, Japan, Israel, Costa Rica, Colombia, and Chile).

After laying out the recent rates and trends for a topic area, we delve into the existing literature on public policies related to that topic area. Some public policies have the potential to affect more than one topic area, in which case the public policy will be discussed in more than one section. In each section, we synthesize the general findings into a collective discussion, tying them back to the conceptual framework we lay out.

The chapter concludes by offering some thoughts on the general lessons learned, as well as emerging trends and avenues for future research.

2 Conceptual Framework

We begin by outlining the conceptual underpinnings behind family decisions which interact with the labor market, and which could be affected by public policies. Modern families can take many forms: married couples, cohabiting partners, families with and without children, and joint versus solo parenting. For simplicity of notation, in this section, the main actors are taken to be a man

and a woman, although we recognize that other gender mixes and family arrangements are also possible. The framework is intentionally general, with the point of highlighting how government policies could affect families.

A starting point is the unitary model, where partnered couples maximize a a joint utility function. This work was pioneered by Mincer (1962) and formalized by Ashenfelter and Heckman (1974). These papers recognized that analyzing labor force decisions for men and women in a family context depends not only on market wages and each individual's demand for leisure, but also on joint leisure and home production of goods and services for the family. They highlighted that one of the most important elements of home production in a family is investments in the raising of children.

The key elements of the unitary model are:

- Partnered family utility function: $U(h_m, h_f, n_m, n_f, x_m, x_f, x_j, x_m^h, x_f^h, x_j^h, C)$
- Unpartnered utility functions: $U(h_i, n_i, x_i, x_i^h, C)$, $i = m, f$
- Housework production function: $x_i^h(n_m^h, n_f^h)$, $i = m, f, j$
- Child production function: $C(n_m^c, n_f^c, x_c, P)$

where the subscripts m , f , c , and j denote males, females, children, and households, respectively.

The inputs into the functions are hours worked in the labor market (h_i), hours spent in unpaid work (n_i) – divided into child rearing (n_i^c) and housework (n_i^h), purchased goods (x_i) – which can be private (m , f , c) or joint (j), home produced goods (x^h) – which can be private or joint, and an indicator for whether both partners are present in the household (P).

The budget constraints in this model can be written as:

- Partnered financial budget constraint: $p_m x_m + p_f x_f + p_j x_j + p_c x_c < w_m h_m + w_f h_f + G - t(w_m h_m, w_f h_f)$
- Unpartnered financial budget constraints: $p_i x_i + p_c x_c < w_i h_i + G - t(w_i h_i)$, $i = m, f$
- Time budget constraints: $T_i = h_i + n_i + l_i$, $i = m, f$

where p_i are market prices, w_i are market wages, T_i is total time available, l_i is leisure, G is government transfers (which can vary with marriage and children), and $t(\cdot)$ is the tax function (which can vary with marriage and children).

As recognized early on by Becker (1973), a limitation of the unitary model is that partners maximize a joint utility function which does not distinguish by source of income. This household aggregation implies that who works in the labor market versus at home does not influence the types of goods purchased or the amount of investment in children.

Subsequent work developed what is known as the collective model. In this model, the man and the woman are not completely altruistic and do not necessarily have the same decision making weights for consumption choices. Instead, factors such as the amount of income each party earns in the market influence bargaining power within a marriage. These models became the standard starting in the 1990s, with influential work by Chiappori (1992), Lundberg and Pollak (1993), Fortin and Lacroix (1997), and Browning and Chiappori (1998). Empirical work is generally more consistent with the collective model compared to the unitary model. While there have been further refinements to this workhorse model in the past two decades, the core logic remains: bargaining power matters for the labor supply of each partner, individual and joint consumption choices, investments in children, and the value of marriage.

While we will not detail the refinements to the collective model in this chapter, we draw the

reader's attention to one key insight which has been developed in the past two decades. This is the recognition that changing gender norms, which would show up as changes in utility functions, have the potential to affect families. For example, traditional beliefs about men being the primary breadwinner and women staying home to rear children have started to give way to more gender-equal preferences and norms. This alters the benefits and costs of marriage and children, as well as changes the labor market investments of men and women. We refer the interested reader to the chapter in this handbook by Olivetti, Petrongolo, and Pan which goes into more details. An interesting question we will return to in this chapter is whether government policies can affect such norms.

Regardless of a model's specific formulation, family decision-making models highlight the interdependent nature of partners' decisions and have implications for both labor market and family outcomes. To summarize a few of these, marriage and cohabitation surpluses arise due to joint leisure complementarities, joint consumption goods, and specialization in market versus unpaid work. Marriage (and cohabitation) further affect fertility decisions and the child production function. Divorce naturally occurs in these models when the surplus from marriage turns negative. Marital breakup can occur even if the total possible surplus in the partnership is positive, but the couple cannot reach an agreement on the division of time use, consumption portfolio, or child investments. In turn, the decision on whether to have children, and how many, depends on preferences and costs.

The general model also highlights that child rearing requires inputs of both time and money, but that not all child inputs can be purchased in the market. Family labor supply interacts with these decisions, and relative wage rates and comparative advantage can lead to corner solutions where one partner specializes in home production or child rearing. Staying home to raise a child

involves not only an immediate cost, but also a potential loss in human capital if it depreciates due to reduced investments in one's professional career.

We have been intentionally general about the functional forms for utility, the child production function, and the exact nature of household bargaining. Our goal in presenting a simple conceptual framework is instead to highlight the factors which uniquely affect family decisions, so that we can in turn discuss how these choices are impacted by public policies.

To provide just one example, both the unitary and collective models predict some degree of specialization in home versus market work based on comparative advantage. This feature could matter for government policies, such as the tax code. Taxing earnings at the individual versus household level will have different impacts on male and female labor supply for partnered couples, and could influence the decision to marry and have children.

More generally, there are a wide variety of policies available to governments which impact families. These include subsidies for specific inputs or goods (e.g., parental leave, child care subsidies), cash transfers (fertility bonuses, child tax credits), and taxes (individual versus joint taxation, tax treatment of children, lone mother tax credits).¹ We discuss the predictions of the conceptual model as we discuss each of these issues in the sections which follow.

3 Public Policies in OECD Countries

Before we begin our review of how different public policies affect outcomes, we first briefly document the landscape for some of these policies across OECD countries in two graphs.

Figure 1 shows per capita social expenditure on children in early childhood as of 2019 for our OECD countries. Amounts have been converted to US dollars and are purchasing power

¹Laws regarding marriage, divorce, custody, alimony, and abortion are also important considerations, but not covered in this chapter.

parity adjusted to make them comparable. Almost all countries have significant spending on cash benefits/tax breaks and child care. In most countries, the amount spent on childcare is roughly equivalent to cash benefits/tax breaks. The largest expenditures are found in the Nordic and Central European countries, with Luxembourg being a clear outlier. Southern and Eastern European countries, Anglo-Saxon countries, and Japan and Korea spend considerably less, but still substantial amounts. A few countries, such as Chile, Israel, Mexico and Turkey, spend very little.

Figure 2 shows the average duration of paid family leave entitlements as of 2022. Note that the graph does not show variation in replacement rates, which can vary from very low to full replacement of wages across different countries. All countries, with the exception of the US, have some mandated parental leave at the federal level. There is substantial variation across countries, with longer leaves on average in Northern European, Central, and Eastern European countries. Finland, Hungary, and the Slovak Republic stand out as having especially long leave durations, while the Netherlands, Switzerland, Australia, Colombia, Costa Rica, Korea, Mexico, and Turkey have particularly short durations. Another difference across countries is the amount of leave reserved specifically for mothers or fathers versus shareable leave.

4 Fertility

4.1 Rates and trends

Figure 3 displays fertility rates across OECD countries in 2019, revealing that all but one country (Israel) is below the replacement threshold of 2.1 children per woman. Of particular concern are the notably low rates observed in some East Asian and South European countries. Figure 4 documents time trends for six distinct geographic areas: Central, Eastern, Northern and Southern

Europe as well as the UK and the US. In all country groups, there have been significant declines in fertility between 1973 to 2019. At the start of the period, most country groups were near the replacement rate, but by 2019, fertility had fallen to 1.7 children per woman or less. A shrinking population of working-age individuals has implications for a wide array of outcomes, including labor productivity, gross domestic product, tax revenue, and retirement programs.

One plausible factor contributing to declining fertility is the concurrent increase in marriage ages.² There is substantial variation in the age at first marriage across our six OECD country groups, as shown in Figure 5. The highest marriage ages are found in Northern Europe (men: age 35, women: age 33) and the lowest are found in the US (men: age 29, women: age 27). Despite the differences in levels, the trends have been remarkably similar across OECD countries between 2002 and 2019, with the age at first marriage rising by roughly 2 years for both genders.

These universal trends prompt the question: What influence have various public policies had in both contributing to and mitigating the decline in fertility?

4.2 Public policies affecting fertility

Looking back to our conceptual framework, the decision on whether to have children, and how many, depends on both utility and costs. Public policies could impact fertility by changing the incentives to raise a child. Policies could operate both indirectly by changing the benefits and costs of time spent on child rearing versus in the labor market and more directly by affecting the household budget constraint with cash transfers or family-friendly tax policies.

Navigating the empirical literature on the impact of public policies on fertility presents a challenge. While methods for causal identification works well for uncovering short-term and

²Age at first birth has likewise increased in most countries.

immediate responses, fertility decisions are inherently long-term and may not promptly react to policy changes. In addition the majority of studies we have identified look at higher order fertility as identification is based on comparing similar mothers before and after reforms for those that already have made the decision to have a first child (notable exceptions are Adda *et al.* (2017) and Raute (2019)). Bearing these caveats in mind, we now dive into the literature on public policies and their influence on fertility.

First we review studies on the effects of parental leave and child care on fertility. Then we move on to the literature which analyzes various cash and near-cash policies.

In-kind subsidies. A seminal study on parental leave and its impact on fertility is Lalive and Zweimüller (2009). This research focuses on a reform in Austria that extended parental leave from one to two years for children born after a specific date. They find that mothers who gave birth to their first child immediately after the reform went on to have a second child at higher rates compared to mothers who had their first child before the reform. However, it is important to note that this effect primarily pertains to the timing of births and higher order births, and does not conclusively identify the impact on overall completed fertility.

Other papers examining the relationship between parental leave policies and higher-order fertility include Cannonier (2014), which evaluates the Family Care Act in the US; Bassford and Fisher (2020), which investigates the introduction of 18 weeks of leave in Australia and its effects on fertility intentions; and Ang (2015), which explores similar dynamics in Canada. These studies generally corroborate the findings of Lalive and Zweimüller (2009), showing positive effects on fertility intentions or birth timing. On the other hand, Dahl *et al.* (2016) analyses a series of expansions in paid maternity leave in Norway and finds little effect on completed fertility. Kluge

and Schmitz (2018) and Cygan-Rehm (2016) analyze a German reform and find no effect, or even a small negative effect, on subsequent birth timing.

A recent contribution to the literature by Raute (2019) makes a significant advancement. Using German data, the study is able to identify effects for the extensive margin in the medium run. The analysis reveals positive effects on fertility decisions up to five years after the implementation of reforms in earnings-related maternity benefits, in particular for highly educated and higher-earning women. This highlights that parental leave policies can indeed influence fertility decisions over the medium term, offering valuable insights into their broader impact beyond possible effects on higher-order births.

There has also been work on paternity quotas and fertility, focusing on higher-order births. Kotsadam and Finseraas (2011), Cools *et al.* (2015), Dahl *et al.* (2016) and Hart *et al.* (2022) found no effect of paternity leave extensions on fertility in Norway, and Bartel *et al.* (2018) finds no effect for California. Contrary to these null effects, Farré and González (2019) shows that two weeks of paid paternity leave in Spain led to delays in subsequent fertility up to six years after the birth of the first child. The effects are driven by two channels. First, fathers' increased their involvement in childcare, which led to higher labor force attachment among mothers, and hence possibly higher opportunity costs for mothers to have an additional child. Second, men reported lower desired fertility after the reform, possibly due to their increased awareness of the costs of childrearing, or to a shift in preferences from child quantity to quality.

In comparison, the literature on child care access and fertility is scarce. A well-identified paper from Germany using expansions of child care for children below age three finds positive effects of child care on fertility, especially along the intensive margin (Bauernschuster *et al.*, 2016). Mörk *et al.* (2013) studies changes in child care subsidies in Sweden and finds some effect on the

timing of birth but no effect on completed fertility. Wood and Neels (2019) finds effects for first births, but not for higher order births, from an expansion in child care for children below age three in Belgium. Wang (2022) estimates the joint decisions of fertility and female labor supply using two recent German reforms affecting parental leave and public child care. The paper finds positive effects on fertility, but with parental leave only impacting higher educated women, while the child care reform affected all women. They find the effect is much larger under individual taxation than under a joint taxation regime. This underscores the importance of studying public policies jointly and not only in isolation.

In sum, the literature on the role of in-kind transfers in influencing fertility indicates that certain programs have the potential to make an impact. The effects are heterogenous across countries and groups of people, and are generally observed more for higher-order births. This does not mean that policies cannot affect first births and completed fertility, but rather reflects that there are few well-identified studies for women who have not yet started their fertility cycles. Since the estimated effects are relatively small (and several studies find no effect), we conclude that in-kind benefits alone are unlikely to be an effective policy tool for addressing low fertility rates. Nevertheless, when combined with other incentives in the labor market, such as tax breaks and cash transfers, in-kind benefits could potentially have a more significant impact.

Cash and near-cash transfers. Cash and financial incentives are also active policy tools used in many countries and there are several papers studying their effect on fertility. Adda *et al.* (2017) simulate the impact of a pronatalist cash transfer and find large short-term effects on fertility but smaller long-run effects which are concentrated among younger women. This paper is one of the few that look at extensive-margin fertility effects for those that have not yet had children.

Laroque and Salanié (2014) and Haan and Wrohlich (2011) exploit cross-sectional variation in financial incentives resulting from the French and German tax and transfer systems, driven by differences in household characteristics. Both papers find sizable fertility effects of a simulated, universal child subsidy. Other related papers exploit variation in universal child subsidies for third (or higher order) children in Quebec (Milligan, 2005) and Israel (Cohen *et al.*, 2013). Both papers find a strong pronatal effect. Riphahn and Wiyneck (2017) assess the effects of a child benefit reform in Germany and find a modest positive effect, but only for second-order births in higher-income households.

Sandner and Wiyneck (2023) study the fertility response to cutting child-related welfare benefits and find a negative effect on higher order births. A more recent paper by Dachille *et al.* (2023) evaluates an Italian 2019 reform that guaranteed minimum income. Even though the program was targeted to combat poverty, they also find positive effects on fertility. Elmallakh (2023) studies fertility responses to a 2014 French reform restricting access to child allowances. She finds negative effects on fertility, especially among high income individuals. Yonzan *et al.* (2024) find positive fertility effects in households receiving more dividend transfers after a policy change to the Alaska Permanent Fund. González and Trommlerová (2023) studies fertility responses to a cash transfer program in Spain. They examine the introduction and cancellation of the program and find a larger fertility decline after the cancellation.

In contrast, Reader *et al.* (2022) finds very small to no effect on fertility after a reduction of child benefits in the UK. This targeted cut affected low income families and is therefore in line with other studies which find larger fertility effects for high income families. A similar conclusion arises in Aizer *et al.* (2024) finding no long-term fertility effects from increased cash transfers to the poor in the US.

All in all, the literature on cash transfers suggest that there are potential fertility effects of providing families cash. However the effects sizes are often relatively modest. The literature typically finds larger effects for high income families, which suggests lower-income families face different economic or social constraints. As with in-kind public policies and fertility, most of the evidence for cash transfers is for higher order births.

5 Marriage, Divorce, and Cohabitation

5.1 Rates and trends

Figure 6 illustrates the substantial variation in marriage rates across OECD countries, with Southern European nations exhibiting some of the lowest rates and Eastern European countries tending toward the highest rates. The US also stands out with relatively high marriage rates. Meanwhile, Figure 7 illustrates relatively minor changes in marriage rates for most OECD country groups from 2002 to 2019, with some movement up and down. Two exceptions are the US and the UK, both of which have experienced sizable declines. Turning to divorce trends in Figure 8, we observe relatively stable rates between 2002 and 2019 across most OECD country groups. The exceptions are again the US and the UK, both of which have seen divorce rates drop in tandem with the decline in marriage.

In Figure 9 we complete the picture on partnerships by plotting cohabitation rates for families with children. The Nordic countries have the highest rate of cohabitation, with roughly 20% of children living with cohabiting partners – a rate which has remained constant between 2005 and 2018. The US and Southern Europe have the lowest rates of cohabitation. Central, Eastern, and Southern Europe, along with the UK have all seen rises in cohabitation over time.

Finally, in Figure 10 we plot the fraction of children who reside in single-parent households

over time. Rates are highest in the US and the UK and lowest in Southern Europe. While there has been an increase in single parenthood in Southern Europe over time, for the other country groups the rates have remained relatively stable.

5.2 Public policies affecting marriage, divorce, and cohabitation

In this section, we discuss how public policies affect marriage and divorce, limiting the discussion to policies discussed elsewhere in this chapter. We do not discuss changes in laws or the broader social support system.

In-kind subsidies. Most papers which study in-kind subsidies for families, i.e., parental leave or subsidized childcare, do not study marriage or divorce as primary outcomes. We therefore highlight just a handful of studies. Cygan-Rehm *et al.* (2018) finds that paid parental leave in Germany increases the probability that a newborn lives with cohabiting parents and reduces the risk of single parenthood. In a study examining the introduction of one month of parental leave earmarked for fathers, Olafsson and Steingrimsdottir (2020) find that this reduces divorce up to 15 years after the birth of a child. Effects are strongest for couples where the mother is more educated than the father.

In contrast, Avdic and Karimi (2018) finds that paid paternity leave in Sweden increases the probability of separation, with stronger effects for couples where the mother has equal or higher education than the father. Examining a series of policy reforms in Norway which expanded shared parental leave, Dahl *et al.* (2016) find no impact on either marriage or divorce. Looking at an extension of fathers' leave allotment in Norway, Hart *et al.* (2022) likewise find no effect on union stability.

While there are papers which examine how publicly funded childcare affects parental wellbeing (Baker *et al.*, 2008 and Schmitz, 2020), we found almost no research for the causal impact on marriage, divorce, and cohabitation. Looking at the extension of the school day in Mexico, which can be viewed as an implicit childcare subsidy, Padilla-Romo *et al.* (2022) find that this increases divorce rates.

Cash and near-cash transfers. There is a larger literature on how the social safety net affects marriage, divorce, and cohabitation. Studying one of the earliest safety net programs in the US, Aizer *et al.* (2024) find that the Mothers' Pension Program delayed marriage. Early studies of two welfare programs in the US, the Aid to Families with Dependent Children (AFDC) and Temporary Assistance to Needy Families (TANF) found little evidence that traditional welfare discouraged marriage (see Moffitt, 1998 for a review). Subsequent work (see Moffitt *et al.*, 2020 and the cites therein) finds that most reforms to US welfare programs did not have large impacts on marriage, divorce, or cohabitation, but that some work-related reforms decreased marriage and increased single parenthood. A deeper discussion of welfare support systems and their effect on marriage is outside the scope of this chapter.

Another strand of the literature focuses on how tax systems influence the decision to marry, divorce, or cohabit. Looking at the Earned Income Tax Credit (EITC), Bastian (2017) finds that the program increased marriage and reduced cohabitation. This reflects a net effect, as there are marriage gains for some couples but a penalty for others.

In several countries, including the US, France, Germany, and Switzerland, taxation occurs at the household rather than individual level. Joint taxation can introduce either a marriage tax or a marriage penalty, depending on the relative earnings of each partner. Early work on

this topic in the US is summarized by Alm *et al.* (1999); this early literature finds that marriage penalties in the tax system have the predicted effects on marriage, divorce, and separation, but the size of the overall effects are relatively modest.

Subsequent work largely confirms this conclusion both in the US (Fisher, 2013; Frazier and McKeehan, 2018) and other countries. Using data for Switzerland and a simulated instrumental variables strategy, Myohl (2024) finds that joint taxation reduces marriage rates for lower-income cohabiting households and those without children. Using German data, Fink (2020) finds that partners with unequal earnings marry earlier, presumably to take advantage of the benefits of joint taxation.

In related work, Persson (2020) finds that the elimination of spousal survivor's insurance in Sweden reduced entry into marriage and increased divorce. Baker *et al.* (2004) study surviving spouse pensions in Canada, and find that removing remarriage penalties increases the remarriage rate of widows. In new work studying same-sex couples, Friedberg and Isaac (2024), find that the recognition of same-sex marriages for tax purposes led to a small increase in marriages.

Do these in-kind and cash transfers explain the variation in partnerships and fertility across countries? This is a challenging question, as laws and the welfare state more generally vary widely across the globe. But on a broader level, Halla *et al.* (2016) argue that expansions in public social spending in OECD countries increases both marriage and divorce.

6 Family Labor Supply

6.1 Rates and trends

Figure 11 compares the labor force participation rate for mothers across OECD countries in 2019. Higher rates are found in the Nordic countries, followed by Central Europe, then Eastern Eu-

rope and Anglo-Saxon countries, and finally Southern Europe (the miscellaneous countries vary widely). For example, over 80% of mothers work in Sweden, while less than 60% do in Italy.

Figure 12 shows trends by geographical areas since 2003. There is generally a positive trend for most country groups, particularly in the later half of the period. However, for the Nordic countries, maternal employment in 2018 is at the same level as in 2003. Levels for the US likewise did not change much between 2003 and 2018, although there was a dip and a rebound after the Great Recession.

In Figure 13, we plot the rate of part time employment for OECD countries. Here, stark differences emerge. The Nordic countries, Southern Europe and Eastern Europe all have relatively low rates, while the Anglo-Saxon countries and particularly Central Europe have a high rate of part-time work for mothers. As seen in Figure 14, these are persistent level differences, with almost no change in part-time employment in any country group over time. This implies that the rising rates in maternal employment seen in Figure 12 are due to increases in full-time employment.³

While we could not obtain similar data for father's employment across countries, we can look at male employment more generally. In Figure 15 we plot male employment over time by our six country groupings. There has been a small decline in most country groups, with the exception of Eastern Europe, which has seen a large increase. Interestingly, male employment rates have largely converged over time, with a full-time equivalent employment rate of roughly 75% for most countries (the UK has a somewhat higher rate). This convergence contrasts with the larger divergence in maternal employment across countries.

A natural question is whether public policies can explain these differences in maternal em-

³From these graphs, we cannot tell whether the increase in full-time employment is due to mothers entering the labor force to take full-time jobs or alternatively due to some mothers entering the labor force to take part-time jobs and other mothers shifting from part-time to full-time work.

ployment across countries and over time, or whether preferences and norms are largely responsible.

6.2 Public policies and family labor supply

Harkening back to our conceptual framework, public policies could impact family labor supply through changes in the tax code which affect take-home wages, through social assistance programs, or through earmarked subsidies, such as for childcare. There is a sizeable and continually expanding literature on how various public policies affect family labor supply.

When the first volume of the Handbook of Labor Economics was written in 1986, there were chapters devoted to female labor supply, models of marital status, and home production. Volume 3 in 1999 revisited the labor supply issue by discussing alternative estimation approaches. When Volume 4 was written in 2011, a few chapters touched only indirectly on family labor supply. Therefore, while the current chapter focuses most heavily on contributions since the last volume of the Handbook appeared, we briefly highlight several papers earlier than this on family labor supply to provide a more comprehensive overview.

Cash and near-cash transfers. A first class of public policies which could affect family labor supply are cash or near-cash transfer programs. In virtually all countries, the social safety net treats families different from individuals, offering more generous social assistance for families with children. Such redistributive policies face a potential tradeoff, as they could disincentive work. The first such cash transfer program in the US was the Mothers' Pension Program, which provided mothers a cash allowance to allow their children to remain at home instead of being placed in institutional care or forced to work. Aizer *et al.* (2024) show that this program had no

effect on women's labor force participation. As follow-ups to this early program, both the Aid to Families with Dependent Children (AFDC) and the Temporary Assistance to Needy Families (TANF) programs provided cash transfers to low income families in the US. There is some evidence for work disincentives, but much of this work is based on older statistical methodologies (see Moffitt (1992) and Ziliak (2015) for reviews).

Studying the near-cash transfer program of food stamps in the US, Hoynes and Schanzenbach (2012) find reductions in both the intensive and extensive margins of labor supply, with effects concentrated among single-women households. A recent paper using Italian data studies the impact of married couple survivor's benefits in Italy (Giupponi, 2019). Using a regression discontinuity design, the paper finds that benefit cuts sharply increased the surviving spouse's labor supply, consistent with both substantial work capacity and a high value of additional income in widowhood.

In many countries over the past three decades, including most prominently the US and the UK, social assistance programs supporting poor families have shifted away from unconditional cash transfers towards policies which simultaneously aimed to increase paid employment. In the US, there was a decline in the generosity of traditional welfare and an expansion of the Earned Income Tax Credit (EITC). The EITC provides a wage subsidy through the tax code for families with children. The subsidy increases in family earnings in the phase-in range, then plateaus, followed by a phase out range where benefits are taxed back. It was designed to "promote both the values of family and work". Classic studies of the EITC include Eissa and Liebman (1996), Meyer and Rosenbaum (2001), and Eissa and Hoynes (2004). The conclusion from these papers is that families respond to EITC incentives, but not in a uniform manner. EITC expansions promoted employment among eligible unmarried women with children. But since the policy is based on

family income, it disincentivized work for secondary earners – who are typically women. Nichols and Rothstein (2015) survey these studies and come up with a consensus estimate that the EITC increases the labor supply of single mothers by 3-6 percentage points.

More recently, Kuka and Shenhav (2024), study the long-run effects of the large EITC expansion in 1993. They find that 10-19 years after a first birth, single mothers increase cumulative work by 0.6 years and have 4% higher earnings due to more work experience. Bastian and Lochner (2022) study the introduction of the EITC in 1975 and finds that it increased maternal employment by 6%.

Around the same time as the EITC expansions, the UK enacted a similar program called the Working Families' Tax Credit (WFTC). The reform likewise led to an increase in unmarried mothers' labor supply, both by retaining and drawing in lone mothers in the labor market (see Blundell *et al.*, 2000, Francesconi and Van der Klaauw, 2007, and Gregg *et al.*, 2009). The reform included a generous childcare credit, which likely played a role in increasing labor supply. For overviews of such in-work benefit programs across countries, see Brewer *et al.* (2009). As noted by Aizer *et al.* (2022), this shift linking welfare benefits to work may have lessened disincentive effects for adult labor supply, but it simultaneously removed much of the safety net for vulnerable children in the lowest income households.

A broader lesson to be learned from the EITC and WFTC studies is that the unit of taxation – the individual or the family – matters for labor supply responses. Kleven *et al.* (2009) highlight that secondary earners in a household arise when they either have low home productivity or a low cost of participating in the labor market. Focusing on low participation costs, they conclude the optimal tax system should have negative joint taxation but positive tax rates on secondary earnings. Using a collective model of the household with intra-household bargaining, Alesina

et al. (2011) argue that higher marginal tax rates on men, regardless of marital status, is optimal. More recently, Gayle and Shephard (2019) use a collective model and find that the optimal tax system should have negative jointness, but that empirically, the welfare gains from jointness are small.

As a recent paper building on this larger literature highlights, joint family taxation can result in nuanced marriage penalties which result in disparate treatment across racial and ethnic lines (Alm *et al.*, 2023). In this vein, two recent papers using structural life-cycle models examine how marriage-related taxation and benefits for social security in the US affect the labor supply of married men and women (Borella *et al.*, 2023 and Groneck and Wallenius, 2021). Both papers conclude that marriage-related provisions decrease the labor supply of married women throughout their lifetimes, and that eliminating the marriage provisions would result in both equity and efficiency gains for much of the population.

Another recent paper (Isaac, 2023) estimates the labor supply effects of joint taxation for same-sex couples, using changes in the recognition of same-sex marriages for tax purposes. The paper finds that joint taxation reduces labor force participation of the lower earner.

Zooming out, research using calibration methods suggests that joint family versus individual taxation policies are partially responsible for the observed differences across countries in married women's labor force participation and the decision to work full versus part time (Bick and Fuchs-Schündeln, 2018).

In-kind subsidies. A second class of public policies which could affect family labor supply are in-kind subsidies which make it easier for mothers and fathers to raise children and work at the same time. One widely implemented policy is subsidized childcare. These subsidies can either be

broad-based or targeted to low-income families. They have the potential to increase entry into the labor force, as well as lengthen the number of work hours by lowering the fixed and variable costs of paid work.

Both across countries and over time, more accessible and cheaper child care is correlated with maternal employment. For example, Del Boca *et al.* (2008) explore variation across European countries in a variety of family policies (including childcare subsidies, parental leave, and family allowances), and conclude the policies have the potential to account for a non-negligible portion of the differences in women's labor market participation across countries.

A key question recent work tries to address is whether these correlations are causal. While the subsidies could be responsible for increased labor force participation of mothers, it is also possible that in countries where more mothers work there is simply a higher demand for paid child care. Work on this topic in the past two decades largely uses quasi-experimental designs. Some studies use geographic differences in costs and availability (e.g., Tekin, 2007; Brilli *et al.*, 2016), while other designs leverage variation in the implementation of subsidies across time or geography (see Morrissey, 2017 for a review). We focus on some of the more influential papers in this quasi-experimental literature.

Baker *et al.* (2008) study the introduction of broad-based, subsidized child care in Quebec, Canada using panel data. They find this heavily subsidized program led to a large increase in the use of non-parental child care for pre-school aged children and a corresponding rise in the employment of women in two-parent families. The design did not allow an analysis of single women. While the increased labor supply of women in two-parent families generated additional tax revenue, this did not cover the subsidy costs, in part because the program resulted in some crowding out of informal child care arrangements. Research by Lefebvre and Merrigan (2008)

on the Quebec reform reached similar conclusions, finding larger effects for mothers with young children. A more recent study by Thomas (2024) uses a staggered difference-in-difference design to study the introduction of a child care program in Nova Scotia, Canada. They find a labor supply response which is three times as large as in Quebec, which could be explained by the program being zero cost and with guaranteed availability.

Havnes and Mogstad (2011a) likewise study the introduction of heavily subsidized, universally accessible child care, but in Norway. Using a difference-in-differences design, they find no evidence of a labor supply response despite there being a large correlation between maternal employment and childcare use. Similar to findings for Canada, they find a crowd out of informal child care arrangements and conclude the net cost of such subsidies is high.

Givord and Marbot (2015) look at a temporary increase in childcare subsidies in France. Using a difference-in-differences design, they find a large increase in the use of paid childcare and a small increase in maternal labor supply.

Cascio (2009) studies a related universal program, namely, the introduction of kindergarten in the US. They find a sizeable 30% increase in the labor force participation for single women whose five year olds enrolled in kindergarten. But there is no corresponding increase for married mothers, suggesting that targeted expansions towards single-parent families are likely to be more cost effective than universal programs. Work studying the introduction of universal preschool programs in Georgia and Oklahoma finds little evidence that maternal labor supply increased but a large crowd-out of private preschool (Cascio and Schanzenbach, 2013; Bassok *et al.*, 2014). Fitzpatrick (2012) finds that public preschool does not generally increase the labor supply of mothers, except for single mothers without additional children.

Turning to other countries, Bauernschuster and Schlotter (2015) study the introduction of

early kindergarten slots based on day-of birth cutoffs in Germany. Using both instrumental variable and difference-in-difference methods, they find positive impacts on maternal employment. Sharp increases in maternal labor supply are also found for Argentina (Berlinski *et al.*, 2011), Spain (Nollenberger and Rodríguez-Planas, 2015), and Arab mothers in Israel (Schlosser, 2024). However, using both a regression discontinuity design and a difference-in-difference design for Switzerland, Gangl and Huber (2022) find, if anything, only a moderate impact on mothers' labor market outcomes. In Mexico, the extension of the school day by 3.5 hours lead to an increase in mothers' labor supply (Padilla-Romo and Cabrera-Hernández, 2019).

Family leave is another widely implemented policy which has the potential to increase family labor supply. Lalive and Zweimüller (2009) study a major Austrian leave reform which expanded the duration from one year to two years, and find that employment and earnings decreased in the short run, but not in the long run. They conclude that both job protection guarantees and cash transfers are key elements of family leave policies. Lalive *et al.* (2014) examine a series of further policy changes in Austria. They find that longer cash benefit periods, particularly during the period with job protection, cause mothers to significantly delay their return to work. Despite this, there is no significant impact of benefit duration or job protection duration on mothers' labor market outcomes in the medium run. Using a structural model and counterfactual policy simulations, the authors conclude that combining cash with job protection is critical for maintaining maternal labor market attachment.

Several studies examine increases in the generosity of paid leave in Germany. Schönberg and Ludsteck (2014) analyze several expansions in maternity leave using a difference-in-difference design around policy reforms governing maternity leave. They find the expansions lowered maternal employment immediately after birth, but had only a small impact on longer-run labor

market outcomes. Kluve and Tamm (2013) study a 2007 reform and likewise find a significant decrease in short-run maternal employment post birth, but with a rebound in employment after the transfer ends. Kluve and Schmitz (2018) build on this work using a regression discontinuity design, finding increases in mothers' employment up to 5 years post-birth. The effects are driven by increases in part-time employment, with no effect for full-time employment. Mothers return to their prior employer at a higher rate and have better quality jobs.

In contrast, work for Norway (Dahl *et al.*, 2016) finds that expansions in paid leave from 18 to 35 weeks via a series of reforms had virtually no impact on labor market participation in either the short or long run. The paid leave expansions had negative redistribution properties; since there was no crowd out of unpaid leave and income was replaced at 100%, the extra leave amounted to a leisure transfer, primarily to middle and upper income families.

The US is an outlier in that there is no paid leave for new mothers at the national level. However, several states have implemented their own policies, with California being the first to do so in 2004. Rossin-Slater *et al.* (2013) use Current Population Survey data and find that California's 2004 paid leave program increased the average duration of maternity leave, with some evidence for an increase in work hours and wages when children are between the ages of 1 to 3. Byker (2016) and Baum and Ruhm (2016) confirm this short-term response for California and Byker (2016) documents a similar short-run impact for New Jersey's program.

However, recent work using administrative Internal Revenue Service (IRS) and Social Security Administration (SSA) data and a regression discontinuity design by Bailey *et al.* (forthcoming) finds no overall long-run effect mother's employment or earnings from California's 2004 reform. For first-time mothers, they find the program reduces employment and earnings a decade after women give birth. More narrowly, related work using administrative data which focuses on

high earners in California finds that wage replacement has no discernable impact on short-term employment (Bana *et al.*, 2020).

Taken together, the literature on in-kind subsidies yields mixed findings with heterogeneous effects. Rossin-Slater and Stearns (2020) summarize the findings for Europe and North America as follows: leaves shorter than a year often improve job continuity and have no effect on wages, while longer paid leave often harms long-run career advancement. The literature highlights that universal policies can often be costly, in part because there can be substantial crowd out of private or informal care. Similarly, labor supply responses are often limited to certain subgroups, providing support for targeted policies. Of course, programs such as universal pre-school and parental leave have other goals besides increasing labor supply, such as improving child development, and hence a more holistic analysis of such policies is warranted. We briefly discuss the impact on children of such policies in Section 8.

7 Gender Inequality

7.1 Rates and trends

While the prior section focused on maternal labor supply, a related question is whether public policies can narrow the gender wage gap after a child is born. As pointed out in a review article by Goldin and Mitchell (2017), women experience a substantial drop in employment and earnings after the birth of a child, but men do not. In an ongoing series of influential papers, Kleven, Landais and a rotating set of coauthors provide compelling empirical evidence on this "child penalty".

A first paper (Kleven *et al.*, 2019) using Danish panel data reveals that the birth of a child leads to an immediate and long-lasting gender gap in earnings of 20%. This is due to a combination of

less participation in the labor market, fewer work hours, and lower wages. These child penalties have increased over the last 30 years or so. Building on this work, in a second paper they create a world atlas of child penalties using pseudo event studies based on cross-sectional data (Kleven *et al.*, forthcoming). While the penalties are widespread across the globe, they vary in size, and explain a larger fraction of gender inequality in high wage countries. Figure 16 shows estimates of the child penalty for various countries from Kleven *et al.* (forthcoming). The penalties are smallest in Norway and highest in the Czech Republic. But the graph reveals substantial variation within country groups; for example, the penalty is relatively large in Finland compared to Norway, and relatively small in Croatia compared to the Czech Republic.

An important question is whether family policies are responsible for these gender inequalities observed in the labor market. Indeed, in many countries, a stated goal of childcare and parental leave programs is in part to reduce gender inequality. Relatedly, can such programs help to explain the general decline in men's labor supply in recent decades?

7.2 Public policies and gender inequality

One policy which explicitly aims to get fathers more involved in child rearing are "daddy quotas". These paternity leave programs set aside a specific amount of parental leave which can only be taken by the father. The quotas were developed as a way to jump start the leave taking of fathers, since they seldom took any portion of shared leave within a couple. While such policies do increase paternity leave take up (e.g., Dahl *et al.*, 2014; Ekberg *et al.*, 2013), evidence on their effectiveness in reducing gender inequality in the labor market is mixed.

Looking at the introduction of a one month daddy quota in Sweden, Ekberg *et al.* (2013) find no impact on fathers' versus mothers' long-term wages and employment. Using Norwegian data,

one study found that paternity leave reduces fathers' earnings in Norway but does not impact mothers' earnings (Rege and Solli, 2013), while another found no effect on fathers' earnings and a reduction in mothers' earnings (Cools *et al.*, 2015). Studying a Quebec reform which reserved 5 weeks for fathers, Patnaik (2019) finds the policy reduces sex inequality, with mothers spending more time in the paid marketplace and men increasing their nonmarket activities at home.

Thinking about shared leave, generous policies could unintentionally increase gender inequality within a household if women become less attached to the labor market as they take longer leaves. There is some evidence for this type of labor supply response for mothers in some countries, such as Germany, as discussed in the prior section. However, other work finds no impact on gender inequality from extensions to shared parental leave. Looking at Norway's expansion of shared leave from 18 to 35 weeks, Dahl *et al.* (2016) find no effect on mothers' or fathers' earnings or labor force participation in either the short or long run, and hence no impact on gender equality on these dimensions.

Recent work by Kleven *et al.* (2024) uses high-quality register data from Austria to quasi-experimentally estimate the effects of all family policy reforms over 60 years on men's and women's earnings. They find that while there were large expansions in parental leave and child-care programs, they had almost no impact on gender inequality in the labor market.

In sum, the evidence on paternal labor supply and the gender wage gap does not support the notion that public policies are the main driver of observed gender differences in the labor market. Indeed, Andresen and Nix (2022) rule out both the arrival of a child and fathers' comparative advantage in paid work as mechanisms for the child penalty, arguing that preferences, gender norms, or discrimination must be in play. They reach this conclusion by comparing child penalties in heterosexual nonadopting, adopting, and same-sex couples.

8 Child Outcomes

Public policies targeting the labor market activities of mothers and fathers have the potential to affect child outcomes, as this can change their time allocation and family income. This in turn will change the mix of child inputs (parental time investments and market or publicly-provided investments). There is a large and growing literature on how child outcomes are affected by resources, and reviewing it in its entirety is beyond the scope of this chapter. Instead, we focus on public policies which affect the longer-run labor market outcomes of children when they are adults (education and labor market outcomes), highlighting a few of the more prominent and recent studies.

8.1 Public policies and child outcomes

In-kind subsidies. There is a rich literature on how in-kind child care investments affect child development. We focus on universal and large-scale programs that have been evaluated using quasi-experimental methods.

Large-scale programs, especially Head Start in the US and subsidized universal programs in Europe and Canada, have been extensively evaluated. We will only review the more recent studies that are especially relevant for our context of longer run outcomes for children. We refer to Duncan *et al.* (2023) for an in-depth review of investments in early childhood development in preschool and at home. Their summary is that existing research reaches mixed conclusions, with more work remaining to be done to better understand "when and why the impacts of the home environment and preschool interventions fade out" (p. 1).

The most recent literature on the Head Start program includes papers by Johnson and Jackson

(2019) and Bailey *et al.* (2021). Both use geographic differences in the rollout of the program between 1965 and 1980. Each paper finds positive long term effects on a set of educational outcomes and increases in labor supply and earnings. Johnson and Jackson (2019) also finds reductions in the likelihood of poverty and incarceration in adulthood. De Haan and Leuven (2020) use a partial identification approach to estimate bounds on treatment effects and also find evidence that Head Start has a positive effect on education and wages. Kline and Walters (2016) underlines the importance of understanding counterfactual care when evaluating early child care interventions. They find that Head Start was only positive for children that transitioned from care at home, while for children previously attending other pre-school programs there is no effect.

Havnes and Mogstad (2011b) was an early paper evaluating a roll-out of universal child care to 3-5 year olds in Norway. They find positive effects on educational attainment at age 30 and in a follow-up paper they find a positive effect on adult income (Havnes and Mogstad, 2015). The effects are largest at the lower end of the income distribution and even turn negative at the top. Universal child care thus has the potential to level the playing field.

Cornelissen *et al.* (2018) investigate heterogeneity in the effects of a preschool program in Germany. They find a pattern of reverse selection on gains, with fewer children from disadvantaged backgrounds participating in child care even though the treatment effect for this group was the largest. Felfe and Lalive (2018) finds similar results when using a reform for younger children in Germany.

For younger children, the evidence is more mixed. Fort *et al.* (2020) evaluates a center-based program in Italy for ages 1-2 and finds negative effects on IQ and personality for children from more affluent households. Drange and Havnes (2019) finds a positive effect on performance in math and language at age 6-7 of attending child care at ages 1-2, induced by an assignment lottery.

In sum, recent literature on the effects of child care on children's outcomes show positive long run effects, especially for children from more disadvantaged backgrounds. An important caution is that many evaluations are done in countries with fairly high quality child care. More research needs to be done to understand which quality parameters are essential for a good program. In addition, the counterfactual mode of care is important and key to drawing broader lessons from policy evaluations (García *et al.*, 2020). Finally, as Duncan *et al.* (2023) emphasizes, few studies discuss the difference between average and marginal returns. While child care subsidies might raise participation for marginal groups, it also provides a cash transfer to families that would have used childcare regardless. Such deadweight losses should be taken into account when evaluating universal child care policies.

Turning to parental leave, there are a handful of studies which look at the long-run outcomes of children. Dustmann and Schönberg (2012) find no long term effects on children of extending maternal leave in Germany. Rasmussen (2010) also finds no effect of extending parental leave in Denmark on children's long run outcomes. On the other hand, Carneiro *et al.* (2015) shows that the introduction of paid parental leave in Norway had some positive effects on children's future education and income. However, Dahl *et al.* (2016) shows that extending the duration beyond the initial few months in Norway provides no additional improvement in children's test scores.

Other papers likewise find mixed results. Liu and Skans (2010) finds positive effects on test scores in Sweden, but only for children of well-educated mothers. Danzer and Lavy (2018) finds no average effect on school outcomes at age 15 in Austria, but positive effects for certain subgroups. Ginja *et al.* (2020) finds positive effects for the older child but not the younger, due to the "speed premium" in Sweden which gives mothers higher benefits for a subsequent child if births are closely spaced.

Bütikofer *et al.* (2021) shows that the initial introduction of paid leave in Norway which Carneiro *et al.* (2015) found to increase long-term child outcomes also had positive effects on maternal health. This provides a possible mechanism for why studies looking at subsequent expansions in Norway do not find long-run effects on children (i.e., there were no further improvements to maternal health from subsequent leave expansions).

More generally, the pattern of mixed results across studies could be due to heterogeneous effects. For example, some studies find larger long-run effects for children with more educated mothers. Heterogeneity could arise through income effects, counterfactual care arrangements, differential labor supply, or varying fertility responses. We conclude there is more work to be done on how to best target in-kind transfers if long-run improvements in child outcomes are a policy goal.

8.1.1 Cash and near-cash transfers. While there is a sizable literature on the effects of cash transfers on children in the short term, there is less research for the longer run. Even so, it is beyond the scope of this chapter to review how money matters in general for children's long-term labor market outcomes. Here we review the findings for only a handful of studies as a way to illustrate the potential for programs which are targeted to increase parental labor supply to have long-term spillover effects on their children.

Taking the example of the EITC, Dahl and Lochner (2012) examines how changes in family income from EITC expansions in the US affects children's academic performance. They find positive effects on math and reading test scores, with larger effects for younger children, boys, and those from more disadvantaged backgrounds. Milligan and Stabile (2011) find similar benefits in academic achievement in their study of the Canadian Child Benefit Expansions. Building on

this work, Bastian and Michelmore (2018) estimate the long-term impact of the EITC on children. They find that an extra \$1,000 in EITC income increases the chances of graduating from high school (by 1.3%) and college (4.2%), as well as increasing young adult employment (1.0%) and earnings (2.2%).

As a second example, Black *et al.* (2014) studies a child care subsidy reform in Norway that increased disposable income of families, holding child care attendance fixed. This increased disposable income has positive effects on child test scores at age 16. These two examples highlight that cash transfers targeted to low income families have the potential to benefit children in the longer run.

9 Norms and Spillovers

Public policies can also directly influence societal norms regarding family outcomes such as fertility, marriage, and labor supply. Although relatively limited, a growing body of literature examines how public policies impact program uptake and shape norms in these domains. We anticipate significant growth in this area, driven by the increased availability of data. A promising data advance is the merging of register data with survey data which provides more nuanced measures of societal norms.

9.1 Public policies and norms and spillovers

Several papers have examined whether participation in government programs targeting families can spread more broadly through society via peer effects. Dahl *et al.* (2014) estimate spillover effects of program participation in paternal leave. Coworkers and brothers are 11 and 15 percentage points, respectively, more likely to take paternity leave if their peer was exogenously induced

to take up leave. Diallo and Lange (2023) replicate the findings and find similar patterns using a Canadian reform in paternal leave. Another study by Welteke and Wrohlich (2019) for Germany also finds spillover effects of changes in maternal leave policies. Taking into account spillover effects of public policies leads to long-run participation rates which are substantially higher than would otherwise be expected from analyzing only the direct effect on the targeted population.

Agostinelli *et al.* (forthcoming) study spillover effects of a large-scale randomized control trial to help parents in Chicago and document large spillover effects on both treatment and control children who live near treated children. Their findings underscore the interaction of parenting with neighborhood and peer effects when evaluating the cost-benefit of programs.

Ichino *et al.* (2022) exploit variation from Swedish tax reforms regarding the use of parental childcare, contrasting effects for native and immigrant couples from a variety of countries characterized by different gender norms. They find that couples originating from countries with relatively conservative norms are more likely to reallocate childcare to mothers following a reduction in the father's tax rate, and less likely to reallocate childcare to fathers following a reduction in the mother's tax rate. This reinforces the traditional allocation of childcare across these conservative-normed parents.

Doepke and Kindermann (2019) build a quantitative model of household bargaining in which the distribution of the burden of child care between mothers and fathers is a key determinant of fertility. They show that fertility is responsive to targeted policies that lower the child care burden specifically for mothers. This could be an explanation for the heterogeneous fertility effects of public policies across countries.

In a recent working paper, Fontenay and González (2024) examine how paternity leave policies affect gender role attitudes of the next generation in six countries. Using an RD design, they find

that male children whose parents were exposed to a paternity leave reform have less gender-stereotypical attitudes when they grow up and are more likely to choose female-stereotypical occupations such as healthcare and education.

Although research on norms is still in an early phase, papers on spillover effects of public policies consistently find sizeable effects, especially for close peers. Accurate evaluations of the benefits and costs of public programs need to take these spillovers into account, as they can often be nontrivial. Existing culture and norms in a country are also an important factors to consider when reforming public policies. While there is much to learn from country-specific studies, there are also large differences in institutions and norms that affect the generalizability of these early findings.

10 Lessons Learned and Avenues for Future Research

10.1 Short summary

In this chapter, we have documented significant changes in fertility, marriage, divorce, cohabitation, maternal employment, and gender inequality across OECD countries from 2001 to 2019. Analyzing these changes in relation to various public policies yields two main insights.

In the short term, while public policies can notably impact certain family outcomes, the overall pattern across the studies we have examined suggests that these policies are unlikely to reverse the trends of declining fertility and marriage rates or significantly increase maternal labor supply. Additionally, many of the public policies discussed entail considerable program costs and redistribution concerns, which limit their feasibility given relatively small benefits. However, a combination of policies, such as integrating tax incentives with targeted subsidies for childcare, shows more promise on the benefit side. This also suggests conducting broader cost-benefit anal-

yses which consider both total benefits and costs for the whole system and not only single policies in isolation.

In the long term, there is a greater potential for impact. Changes in family norms around child-rearing and spillover effects to groups closely connected to targeted families, including the next generation, provide a stronger case for policy intervention. However, altering norms takes considerably longer and is more challenging to identify with commonly used research methods and data so the evidence base is still rather limited.

10.2 Avenues for future research

A particularly concerning trend is the significant decline in fertility rates around the globe, which has proven difficult to explain (e.g., Kearney *et al.* (2022)). Future research should explore family decision-making processes and how to design policies that better support the joint decisions of dual-working parents and fertility. Doepke *et al.* (2023) provides a valuable starting point for discussions on fertility and potential policies.

Second, the literature to date has predominantly focused on married families or single-parent households. However, contemporary families take various forms, including cohabiting couples, blended families, multigenerational households, and same-sex couples. An open avenue for research is to look into how general models and insights can be adapted to account for the dynamic nature of family structures.

Third, classic public policies need to be reconsidered in light of an evolving labor market landscape. Policies aimed at increasing female labor supply and fertility must account for changes in the modern labor market. For instance, new policies should address the implications of emerging technologies, which may differ for couples with and without children. Goldin (2014) suggests

that structural changes to the labor market, rather than existing public policies, might be a more fruitful avenue for rethinking how interactions between families and labor markets will evolve. One such change is the increase in flexible work arrangements, especially the rise in remote work prompted by the COVID-19 pandemic. Further research is needed to understand the implications of these changes for families.

References

- ADDA, J., DUSTMANN, C. and STEVENS, K. (2017). The career costs of children. *Journal of Political Economy*, **125** (2), 293–337.
- AGOSTINELLI, F., DOEPKE, M., SORRENTI, G. and ZILIBOTTI, F. (forthcoming). It takes a village: The economics of parenting with neighborhood and peer effects. *Journal of Political Economy*.
- AIZER, A., CHO, S., ELI, S. and LLERAS-MUNEY, A. (2024). The impact of cash transfers to poor mothers on family structure and maternal well-being. *American Economic Journal: Applied Economics*, **16** (2), 492–529.
- , HOYNES, H. and LLERAS-MUNEY, A. (2022). Children and the US social safety net: Balancing disincentives for adults and benefits for children. *Journal of Economic Perspectives*, **36** (2), 149–174.
- ALESINA, A., ICHINO, A. and KARABARBOUNIS, L. (2011). Gender-based taxation and the division of family chores. *American Economic Journal: Economic Policy*, **3** (2), 1–40.
- ALM, J., DICKERT-CONLIN, S. and WHITTINGTON, L. A. (1999). Policy watch. *Journal of Economic Perspectives*, **13** (3), 193–204.

- , LEGUIZAMON, J. S. and LEGUIZAMON, S. (2023). Race, ethnicity, and taxation of the family: The many shades of the marriage penalty/bonus. *National Tax Journal*, **76** (3), 525–560.
- ANDRESEN, M. E. and NIX, E. (2022). What causes the child penalty? Evidence from adopting and same-sex couples. *Journal of Labor Economics*, **40** (4), 971–1004.
- ANG, X. L. (2015). The effects of cash transfer fertility incentives and parental leave benefits on fertility and labor supply: Evidence from two natural experiments. *Journal of Family and Economic Issues*, **36**, 263–288.
- ASHENFELTER, O. and HECKMAN, J. (1974). The estimation of income and substitution effects in a model of family labor supply. *Econometrica*, **42** (1), 73–85.
- AVDIC, D. and KARIMI, A. (2018). Modern family? Paternity leave and marital stability. *American Economic Journal: Applied Economics*, **10** (4), 283–307.
- BAILEY, M. J., BYKER, T., PATEL, E. and RAMNATH, S. (forthcoming). The long-run effects of California’s paid family leave act on women’s careers and childbearing: New evidence from a regression discontinuity design and US tax data. *American Economic Journal: Economic Policy*.
- , SUN, S. and TIMPE, B. (2021). Prep school for poor kids: The long-run impacts of Head Start on human capital and economic self-sufficiency. *American Economic Review*, **111** (12), 3963–4001.
- BAKER, M., GRUBER, J. and MILLIGAN, K. (2008). Universal child care, maternal labor supply, and family well-being. *Journal of Political Economy*, **116** (4), 709–745.
- , HANNA, E. and KANTAREVIC, J. (2004). The married widow: Marriage penalties matter! *Journal of the European Economic Association*, **2** (4), 634–664.

- BANA, S. H., BEDARD, K. and ROSSIN-SLATER, M. (2020). The impacts of paid family leave benefits: regression kink evidence from California administrative data. *Journal of Policy Analysis and Management*, **39** (4), 888–929.
- BARTEL, A. P., ROSSIN-SLATER, M., RUHM, C. J., STEARNS, J. and WALDFOGEL, J. (2018). Paid family leave, fathers' leave-taking, and leave-sharing in dual-earner households. *Journal of Policy Analysis and Management*, **37** (1), 10–37.
- BASSFORD, M. and FISHER, H. (2020). The impact of paid parental leave on fertility intentions. *Economic Record*, **96** (315), 402–430.
- BASSOK, D., FITZPATRICK, M. and LOEB, S. (2014). Does state preschool crowd-out private provision? The impact of universal preschool on the childcare sector in Oklahoma and Georgia. *Journal of Urban Economics*, **83**, 18–33.
- BASTIAN, J. (2017). Unintended consequences? More marriage, more children, and the EITC. In *Proceedings. Annual Conference on Taxation and Minutes of the Annual Meeting of the National Tax Association*, vol. 110, pp. 1–56.
- and LOCHNER, L. (2022). The earned income tax credit and maternal time use: More time working and less time with kids? *Journal of Labor Economics*, **40** (3), 573–611.
- and MICHELMORE, K. (2018). The long-term impact of the earned income tax credit on children's education and employment outcomes. *Journal of Labor Economics*, **36** (4), 1127–1163.
- BAUERNSCHUSTER, S., HENER, T. and RAINER, H. (2016). Children of a (policy) revolution: The introduction of universal child care and its effect on fertility. *Journal of the European Economic Association*, **14** (4), 975–1005.

- and SCHLOTTER, M. (2015). Public child care and mothers' labor supply—Evidence from two quasi-experiments. *Journal of Public Economics*, **123**, 1–16.
- BAUM, C. L. and RUHM, C. J. (2016). The effects of paid family leave in California on labor market outcomes. *Journal of Policy Analysis and Management*, **35** (2), 333–356.
- BECKER, G. S. (1973). A theory of marriage: Part I. *Journal of Political Economy*, **81** (4), 813–846.
- BERLINSKI, S., GALIANI, S. and MC EWAN, P. J. (2011). Preschool and maternal labor market outcomes: Evidence from a regression discontinuity design. *Economic Development and Cultural Change*, **59** (2), 313–344.
- BICK, A. and FUCHS-SCHÜNDELN, N. (2018). Taxation and labour supply of married couples across countries: A macroeconomic analysis. *The Review of Economic Studies*, **85** (3), 1543–1576.
- BLACK, S. E., DEVEREUX, P. J., LØKEN, K. V. and SALVANES, K. G. (2014). Care or cash? The effect of child care subsidies on student performance. *Review of Economics and Statistics*, **96** (5), 824–837.
- BLUNDELL, R., DUNCAN, A., MCCRAE, J. and MEGHIR, C. (2000). The labour market impact of the working families' tax credit. *Fiscal Studies*, **21** (1), 75–104.
- BORELLA, M., DE NARDI, M. and YANG, F. (2023). Are marriage-related taxes and social security benefits holding back female labour supply? *The Review of Economic Studies*, **90** (1), 102–131.
- BREWER, M., FRANCESCONI, M., GREGG, P. and GROGGER, J. (2009). Feature: In-work benefit reform in a cross-national perspective-introduction. *The Economic Journal*, **119** (535), F1–F14.
- BRILLI, Y., DEL BOCA, D. and PRONZATO, C. D. (2016). Does child care availability play a role in

- maternal employment and children's development? Evidence from Italy. *Review of Economics of the Household*, **14**, 27–51.
- BROWNING, M. and CHIAPPORI, P.-A. (1998). Efficient intra-household allocations: A general characterization and empirical tests. *Econometrica*, pp. 1241–1278.
- BÜTIKOFER, A., RIISE, J. and M. SKIRA, M. (2021). The impact of paid maternity leave on maternal health. *American Economic Journal: Economic Policy*, **13** (1), 67–105.
- BYKER, T. S. (2016). Paid parental leave laws in the United States: Does short-duration leave affect women's labor-force attachment? *American Economic Review*, **106** (5), 242–246.
- CANNONIER, C. (2014). Does the family and medical leave act (FMLA) increase fertility behavior? *Journal of Labor Research*, **35**, 105–132.
- CARNEIRO, P., LØKEN, K. V. and SALVANES, K. G. (2015). A flying start? Maternity leave benefits and long-run outcomes of children. *Journal of Political Economy*, **123** (2), 365–412.
- CASCIO, E. U. (2009). Maternal labor supply and the introduction of kindergartens into american public schools. *Journal of Human Resources*, **44** (1), 140–170.
- and SCHANZENBACH, D. W. (2013). The impacts of expanding access to high-quality preschool. *Brookings Papers on Economic Activity*, **2013** (Fall), 127–178.
- CHIAPPORI, P.-A. (1992). Collective labor supply and welfare. *Journal of Political Economy*, **100** (3), 437–467.
- COHEN, A., DEHEJIA, R. and ROMANOV, D. (2013). Financial incentives and fertility. *Review of Economics and Statistics*, **95** (1), 1–20.

- COOLS, S., FIVA, J. H. and KIRKEBØEN, L. J. (2015). Causal effects of paternity leave on children and parents. *The Scandinavian Journal of Economics*, **117** (3), 801–828.
- CORNELISSEN, T., DUSTMANN, C., RAUTE, A. and SCHÖNBERG, U. (2018). Who benefits from universal child care? Estimating marginal returns to early child care attendance. *Journal of Political Economy*, **126** (6), 2356–2409.
- CYGAN-REHM, K. (2016). Parental leave benefit and differential fertility responses: Evidence from a German reform. *Journal of Population Economics*, **29**, 73–103.
- , KUEHNLE, D. and RIPHAHN, R. T. (2018). Paid parental leave and families’ living arrangements. *Labour Economics*, **53**, 182–197.
- DACHILLE, G. P., DE PAOLA, M., NISTICÒ, R. and TRIDICO, P. (2023). Guaranteed minimum income and fertility.
- DAHL, G. B. and LOCHNER, L. (2012). The impact of family income on child achievement: Evidence from the earned income tax credit. *American Economic Review*, **102** (5), 1927–1956.
- , LØKEN, K. V. and MOGSTAD, M. (2014). Peer effects in program participation. *American Economic Review*, **104** (7), 2049–2074.
- , —, MOGSTAD, M. and SALVANES, K. V. (2016). What is the case for paid maternity leave? *Review of Economics and Statistics*, **98** (4), 655–670.
- DANZER, N. and LAVY, V. (2018). Paid parental leave and children’s schooling outcomes. *The Economic Journal*, **128** (608), 81–117.

- DE HAAN, M. and LEUVEN, E. (2020). Head Start and the distribution of long-term education and labor market outcomes. *Journal of Labor Economics*, **38** (3), 727–765.
- DEL BOCA, D., PASQUA, S. and PRONZATO, C. (2008). Motherhood and market work decisions in institutional context: a European perspective. *Oxford Economic Papers*, **61** (suppl_1), i147–i171.
- DIALLO, Y. and LANGE, F. (2023). Peer effects at work on parental leave.
- DOEPKE, M., HANNUSCH, A., KINDERMANN, F. and TERTILT, M. (2023). The economics of fertility: A new era. In *Handbook of the Economics of the Family*, vol. 1, Elsevier, pp. 151–254.
- and KINDERMANN, F. (2019). Bargaining over babies: Theory, evidence, and policy implications. *American Economic Review*, **109** (9), 3264–3306.
- DRANGE, N. and HAVNES, T. (2019). Early childcare and cognitive development: Evidence from an assignment lottery. *Journal of Labor Economics*, **37** (2), 581–620.
- DUNCAN, G., KALIL, A., MOGSTAD, M. and REGE, M. (2023). Investing in early childhood development in preschool and at home. *Handbook of the Economics of Education*, **6**, 1–91.
- DUSTMANN, C. and SCHÖNBERG, U. (2012). Expansions in maternity leave coverage and children’s long-term outcomes. *American Economic Journal: Applied Economics*, **4** (3), 190–224.
- EISSA, N. and HOYNES, H. W. (2004). Taxes and the labor market participation of married couples: the earned income tax credit. *Journal of Public Economics*, **88** (9-10), 1931–1958.
- and LIEBMAN, J. B. (1996). Labor supply response to the earned income tax credit. *The Quarterly Journal of Economics*, **111** (2), 605–637.

- EKBERG, J., ERIKSSON, R. and FRIEBEL, G. (2013). Parental leave-a policy evaluation of the Swedish "daddy-month" reform. *Journal of Public Economics*, **97**, 131–143.
- ELMALLAKH, N. (2023). Fertility and labor supply responses to child allowances: The introduction of means-tested benefits in france. *Demography*, **60** (5), 1493–1522.
- FARRÉ, L. and GONZÁLEZ, L. (2019). Does paternity leave reduce fertility? *Journal of Public Economics*, **172**, 52–66.
- FELFE, C. and LALIVE, R. (2018). Does early child care affect children's development? *Journal of Public Economics*, **159**, 33–53.
- FINK, A. (2020). German income taxation and the timing of marriage. *Applied Economics*, **52** (5), 475–489.
- FISHER, H. (2013). The effect of marriage tax penalties and subsidies on marital status. *Fiscal Studies*, **34** (4), 437–465.
- FITZPATRICK, M. D. (2012). Revising our thinking about the relationship between maternal labor supply and preschool. *Journal of Human Resources*, **47** (3), 583–612.
- FONTENAY, S. and GONZÁLEZ, L. (2024). Can Public Policies Break the Gender Mold? Evidence from Paternity Leave Reforms in Six Countries. *Barcelona School of Economics Working Paper*, (1422).
- FORT, M., ICHINO, A. and ZANELLA, G. (2020). Cognitive and noncognitive costs of day care at age 0–2 for children in advantaged families. *Journal of Political Economy*, **128** (1), 158–205.

- FORTIN, B. and LACROIX, G. (1997). A test of the unitary and collective models of household labour supply. *The Economic Journal*, **107** (443), 933–955.
- FRANCESCONI, M. and VAN DER KLAUW, W. (2007). The socioeconomic consequences of “in-work” benefit reform for British lone mothers. *Journal of Human Resources*, **42** (1), 1–31.
- FRAZIER, N. and MCKEEHAN, M. (2018). Hesitating at the altar: An update on taxes and the timing of marriage. *Public Finance Review*, **46** (5), 743–763.
- FRIEDBERG, L. and ISAAC, E. (2024). Same-sex marriage recognition and taxes: New evidence about the impact of household taxation. *Review of Economics and Statistics*, **106** (1), 85–101.
- GANGL, S. and HUBER, M. (2022). From homemakers to breadwinners? How mandatory kindergarten affects maternal labour market outcomes.
- GARCÍA, J. L., HECKMAN, J. J., LEAF, D. E. and PRADOS, M. J. (2020). Quantifying the life-cycle benefits of an influential early-childhood program. *Journal of Political Economy*, **128** (7), 2502–2541.
- GAYLE, G.-L. and SHEPHARD, A. (2019). Optimal taxation, marriage, home production, and family labor supply. *Econometrica*, **87** (1), 291–326.
- GINJA, R., JANS, J. and KARIMI, A. (2020). Parental leave benefits, household labor supply, and children’s long-run outcomes. *Journal of Labor Economics*, **38** (1), 261–320.
- GIUPPONI, G. (2019). When income effects are large: Labor supply responses and the value of welfare transfers.

- GIVORD, P. and MARBOT, C. (2015). Does the cost of child care affect female labor market participation? An evaluation of a French reform of childcare subsidies. *Labour Economics*, **36**, 99–111.
- GOLDIN, C. (2014). A grand gender convergence: Its last chapter. *American Economic Review*, **104** (4), 1091–1119.
- and MITCHELL, J. (2017). The new life cycle of women’s employment: Disappearing humps, sagging middles, expanding tops. *Journal of Economic Perspectives*, **31** (1), 161–182.
- GONZÁLEZ, L. and TROMMLEROVÁ, S. K. (2023). Cash transfers and fertility: How the introduction and cancellation of a child benefit affected births and abortions. *Journal of Human Resources*, **58** (3), 783–818.
- GREGG, P., HARKNESS, S. and SMITH, S. (2009). Welfare reform and lone parents in the UK. *The Economic Journal*, **119** (535), F38–F65.
- GRONECK, M. and WALLENIS, J. (2021). It sucks to be single! Marital status and redistribution of social security. *The Economic Journal*, **131** (633), 327–371.
- HAAN, P. and WROHLICH, K. (2011). Can child care policy encourage employment and fertility?: Evidence from a structural model. *Labour Economics*, **18** (4), 498–512.
- HALLA, M., LACKNER, M. and SCHARLER, J. (2016). Does the welfare state destroy the family? Evidence from OECD member countries. *The Scandinavian Journal of Economics*, **118** (2), 292–323.
- HART, R. K., ANDERSEN, S. N. and DRANGE, N. (2022). Effects of extended paternity leave on family dynamics. *Journal of Marriage and Family*, **84** (3), 814–839.

- HAVNES, T. and MOGSTAD, M. (2011a). Money for nothing? Universal child care and maternal employment. *Journal of Public Economics*, **95** (11-12), 1455–1465.
- and – (2011b). No child left behind: Subsidized child care and children’s long-run outcomes. *American Economic Journal: Economic Policy*, **3** (2), 97–129.
- and – (2015). Is universal child care leveling the playing field? *Journal of Public Economics*, **127**, 100–114.
- HOYNES, H. W. and SCHANZENBACH, D. W. (2012). Work incentives and the food stamp program. *Journal of Public Economics*, **96** (1-2), 151–162.
- ICHINO, A., OLSSON, M., PETRONGOLO, B. and THOURSIE, P. S. (2022). Taxes, childcare, and gender identity norms.
- ISAAC, E. (2023). Suddenly married: Joint taxation and the labor supply of same-sex married couples after us v. windsor. *Journal of Human Resources*.
- JOHNSON, R. C. and JACKSON, C. K. (2019). Reducing inequality through dynamic complementarity: Evidence from Head Start and public school spending. *American Economic Journal: Economic Policy*, **11** (4), 310–349.
- KEARNEY, M. S., LEVINE, P. B. and PARDUE, L. (2022). The puzzle of falling us birth rates since the great recession. *Journal of Economic Perspectives*, **36** (1), 151–176.
- KLEVEN, H., LANDAIS, C. and LEITE-MARIANTE, G. (forthcoming). The child penalty atlas. *The Review of Economic Studies*.

- , —, POSCH, J., STEINHAEUER, A. and ZWEIMÜLLER, J. (2024). Do family policies reduce gender inequality? Evidence from 60 years of policy experimentation. *American Economic Journal: Economic Policy*, **16** (2), 110–149.
- , — and SØGAARD, J. E. (2019). Children and gender inequality: Evidence from Denmark. *American Economic Journal: Applied Economics*, **11** (4), 181–209.
- KLEVEN, H. J., KREINER, C. T. and SAEZ, E. (2009). The optimal income taxation of couples. *Econometrica*, **77** (2), 537–560.
- KLINE, P. and WALTERS, C. R. (2016). Evaluating public programs with close substitutes: The case of Head Start. *The Quarterly Journal of Economics*, **131** (4), 1795–1848.
- KLUVE, J. and SCHMITZ, S. (2018). Back to work: Parental benefits and mothers’ labor market outcomes in the medium run. *ILR Review*, **71** (1), 143–173.
- and TAMM, M. (2013). Parental leave regulations, mothers’ labor force attachment and fathers’ childcare involvement: evidence from a natural experiment. *Journal of Population Economics*, **26**, 983–1005.
- KOTSADAM, A. and FINSERAAS, H. (2011). The state intervenes in the battle of the sexes: Causal effects of paternity leave. *Social Science Research*, **40** (6), 1611–1622.
- KUKA, E. and SHENHAV, N. (2024). Long-run effects of incentivizing work after childbirth. *American Economic Review*, **114** (6), 1692–1722.
- LALIVE, R., SCHLOSSER, A., STEINHAEUER, A. and ZWEIMÜLLER, J. (2014). Parental leave and moth-

- ers' careers: The relative importance of job protection and cash benefits. *Review of Economic Studies*, **81** (1), 219–265.
- and ZWEIMÜLLER, J. (2009). How does parental leave affect fertility and return to work? Evidence from two natural experiments. *The Quarterly Journal of Economics*, **124** (3), 1363–1402.
- LAROQUE, G. and SALANIÉ, B. (2014). Identifying the response of fertility to financial incentives. *Journal of Applied Econometrics*, **29** (2), 314–332.
- LEFEBVRE, P. and MERRIGAN, P. (2008). Child-care policy and the labor supply of mothers with young children: A natural experiment from Canada. *Journal of Labor Economics*, **26** (3), 519–548.
- LIU, Q. and SKANS, O. N. (2010). The duration of paid parental leave and children's scholastic performance. *The BE Journal of Economic Analysis & Policy*, **10** (1).
- LUNDBERG, S. and POLLAK, R. A. (1993). Separate spheres bargaining and the marriage market. *Journal of Political Economy*, **101** (6), 988–1010.
- MEYER, B. D. and ROSENBAUM, D. T. (2001). Welfare, the earned income tax credit, and the labor supply of single mothers. *The Quarterly Journal of Economics*, **116** (3), 1063–1114.
- MILLIGAN, K. (2005). Subsidizing the stork: New evidence on tax incentives and fertility. *Review of Economics and Statistics*, **87** (3), 539–555.
- and STABILE, M. (2011). Do child tax benefits affect the well-being of children? Evidence from Canadian child benefit expansions. *American Economic Journal: Economic Policy*, **3** (3), 175–205.
- MINCER, J. (1962). *Aspects of Labor Markets*, Princeton University Press, chap. Labor Force Participation of Married Women, pp. 63–97.

- MOFFITT, R. (1992). Incentive effects of the US welfare system: A review. *Journal of Economic Literature*, **30** (1), 1–61.
- MOFFITT, R. A. (1998). *The effect of welfare on marriage and fertility*. Washington, DC: National Academy Press.
- , PHELAN, B. J. and WINKLER, A. E. (2020). Welfare rules, incentives, and family structure. *Journal of Human Resources*, **55** (1), 1–42.
- MÖRK, E., SJÖGREN, A. and SVALERYD, H. (2013). Childcare costs and the demand for children-evidence from a nationwide reform. *Journal of Population Economics*, **26**, 33–65.
- MORRISSEY, T. W. (2017). Child care and parent labor force participation: a review of the research literature. *Review of Economics of the Household*, **15** (1), 1–24.
- MYOHL, N. (2024). Till taxes keep us apart? The impact of the marriage tax on the marriage rate. *International Tax and Public Finance*, **31** (2), 552–592.
- NICHOLS, A. and ROTHSTEIN, J. (2015). The earned income tax credit. In *Economics of Means-Tested Transfer Programs in the United States, Volume 1*, University of Chicago Press, pp. 137–218.
- NOLLENBERGER, N. and RODRÍGUEZ-PLANAS, N. (2015). Full-time universal childcare in a context of low maternal employment: Quasi-experimental evidence from Spain. *Labour Economics*, **36**, 124–136.
- OLAFSSON, A. and STEINGRIMSDOTTIR, H. (2020). How does daddy at home affect marital stability? *The Economic Journal*, **130** (629), 1471–1500.

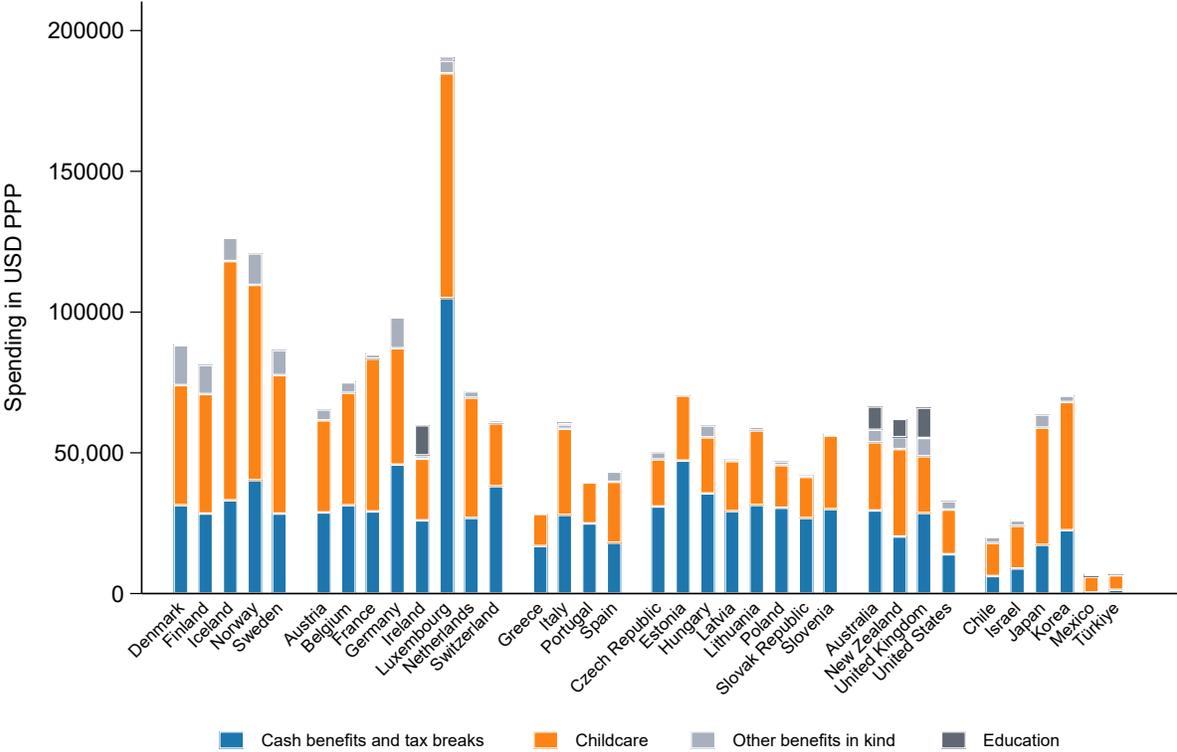
- PADILLA-ROMO, M. and CABRERA-HERNÁNDEZ, F. (2019). Easing the constraints of motherhood: the effects of all-day schools on mothers' labor supply. *Economic Inquiry*, **57** (2), 890–909.
- , PELUFFO, C. and VIOLLAZ, M. (2022). Parents' effective time endowment and divorce: Evidence from extended school days.
- PATNAIK, A. (2019). Reserving time for daddy: The consequences of fathers' quotas. *Journal of Labor economics*, **37** (4), 1009–1059.
- PERSSON, P. (2020). Social insurance and the marriage market. *Journal of Political Economy*, **128** (1), 252–300.
- RASMUSSEN, A. W. (2010). Increasing the length of parents' birth-related leave: The effect on children's long-term educational outcomes. *Labour Economics*, **17** (1), 91–100.
- RAUTE, A. (2019). Can financial incentives reduce the baby gap? Evidence from a reform in maternity leave benefits. *Journal of Public Economics*, **169**, 203–222.
- READER, M., PORTES, J. and PATRICK, R. (2022). Does cutting child benefits reduce fertility in larger families? Evidence from the UK's two-child limit.
- REGE, M. and SOLLI, I. F. (2013). The impact of paternity leave on fathers' future earnings. *Demography*, **50** (6), 2255–2277.
- RIPHAHN, R. T. and WIYNCK, F. (2017). Fertility effects of child benefits. *Journal of Population Economics*, **30**, 1135–1184.
- ROSSIN-SLATER, M., RUHM, C. J. and WALDFOGEL, J. (2013). The effects of California's paid family

- leave program on mothers' leave-taking and subsequent labor market outcomes. *Journal of Policy Analysis and Management*, **32** (2), 224–245.
- and STEARNS, J. (2020). Time on with baby and time off from work. *The Future of Children*, **30** (2), 35–52.
- SANDNER, M. and WIYNCK, F. (2023). The fertility response to cutting child-related welfare benefits. *Population Research and Policy Review*, **42** (2), 25.
- SCHLOSSER, A. (2024). Public Preschool and the Labor Supply of Arab Mothers: Evidence from a Natural Experiment. *CESifo Working Paper No. 10904*.
- SCHMITZ, S. (2020). The impact of publicly funded childcare on parental well-being: Evidence from cut-off rules. *European Journal of Population*, **36** (2), 171–196.
- SCHÖNBERG, U. and LUDSTECK, J. (2014). Expansions in maternity leave coverage and mothers' labor market outcomes after childbirth. *Journal of Labor Economics*, **32** (3), 469–505.
- TEKIN, E. (2007). Childcare subsidies, wages, and employment of single mothers. *Journal of Human Resources*, **42** (2), 453–487.
- THOMAS, J. (2024). Free, full-day programming for four-year-old children in nova scotia and women's labour market outcomes. *Canadian Journal of Economics/Revue Canadienne d'économique*.
- WANG, H. (2022). *Fertility and Family Leave Policies in Germany: Optimal Policy Design in a Dynamic Framework*. Tech. rep., Working paper.

- WELTEKE, C. and WROHLICH, K. (2019). Peer effects in parental leave decisions. *Labour Economics*, 57, 146–163.
- WOOD, J. and NEELS, K. (2019). Local childcare availability and dual-earner fertility: Variation in childcare coverage and birth hazards over place and time. *European Journal of Population*, 35 (5), 913–937.
- YONZAN, N., TIMILSINA, L. and KELLY, I. R. (2024). Economic incentives surrounding fertility: Evidence from alaska’s permanent fund dividend. *Economics & Human Biology*, 52, 101334.
- ZILIAK, J. P. (2015). Temporary assistance for needy families. In *Economics of Means-Tested Transfer Programs in the United States, Volume 1*, University of Chicago Press, pp. 303–393.

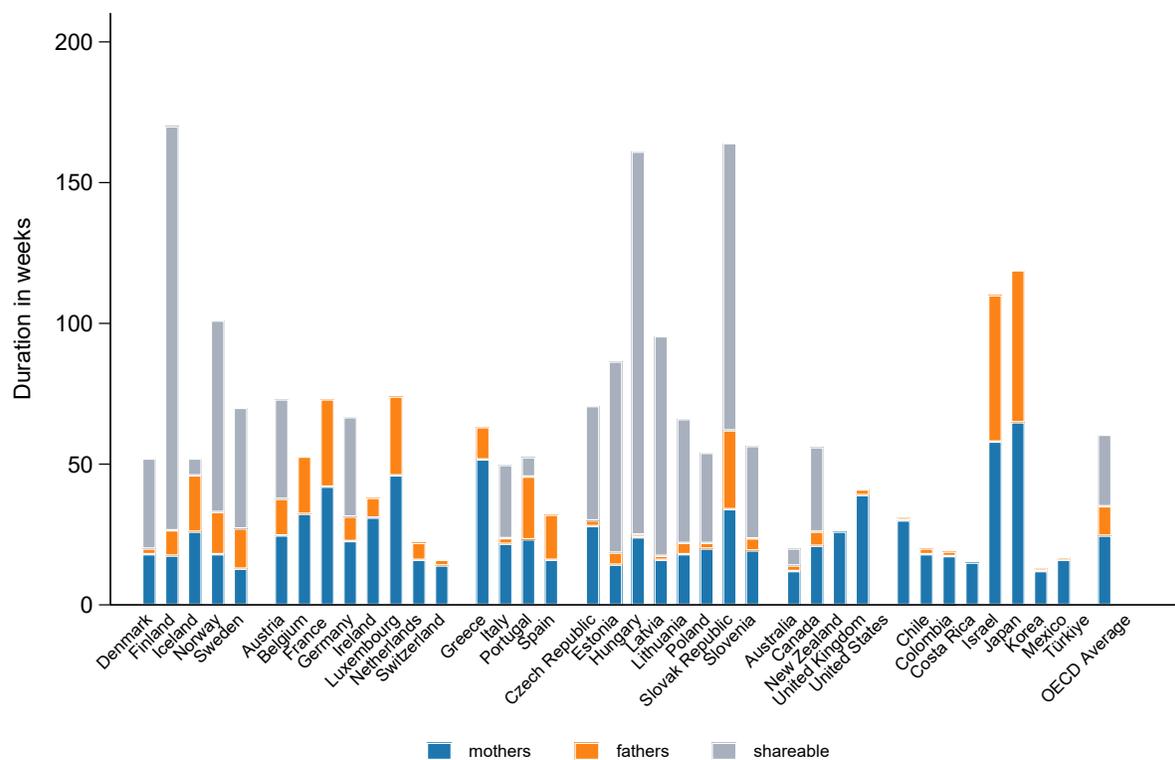
11 Tables and Figures

Figure 1: Per capita social expenditure for children across OECD countries, 2019



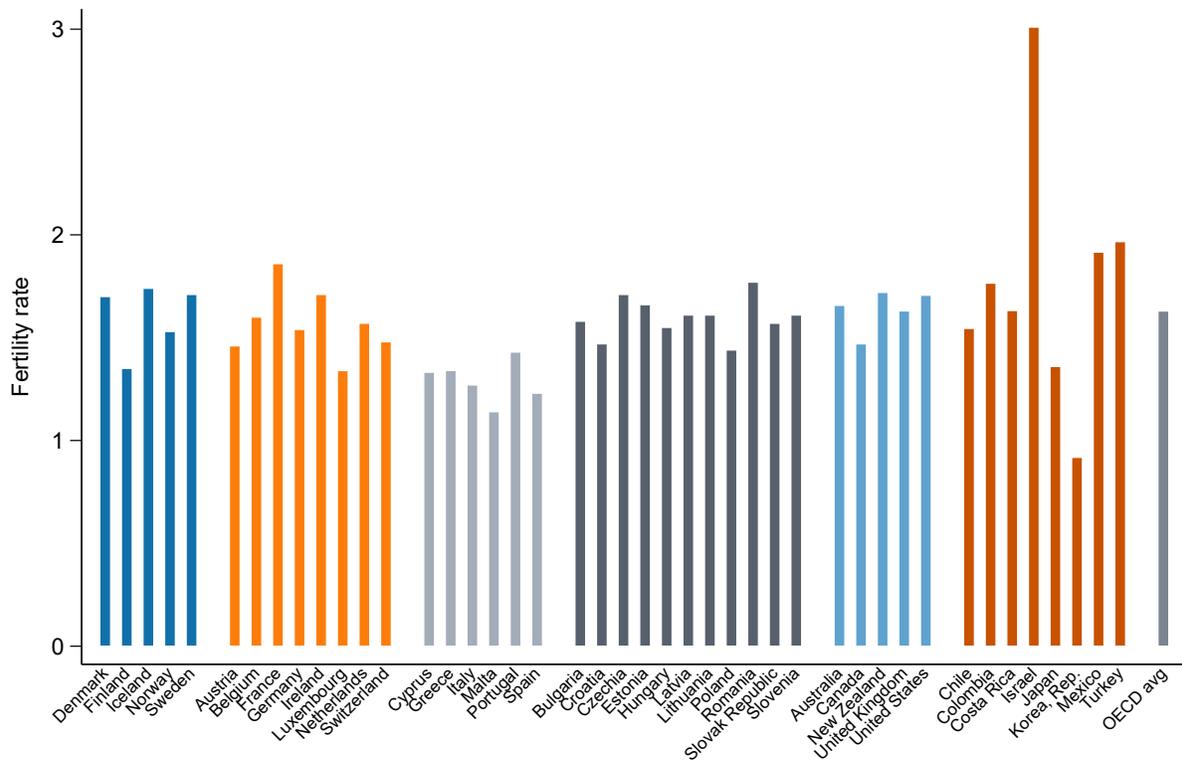
Notes: The source is the OECD family database, PF1.6.C. Countries are classified into six distinct groups. Northern Europe includes Iceland, Denmark, Sweden, Norway, and Finland; Central Europe includes Switzerland, Netherlands, Luxembourg, Ireland, Germany, France, Belgium, and Austria; Southern Europe includes Spain, Portugal, Malta, Italy, Greece, and Cyprus; Eastern Europe includes Slovenia, Slovak Republic, Romania, Poland, Lithuania, Latvia, Hungary, Estonia, Czechia, Croatia, and Bulgaria; Anglo-Saxon countries include United States, United Kingdom, New Zealand, Canada, and Australia; the miscellaneous category include Turkey, Mexico, Korea, Japan, Israel, Costa Rica, Colombia, and Chile.

Figure 2: Reserved and shareable paid family leave entitlements across OECD countries, 2019



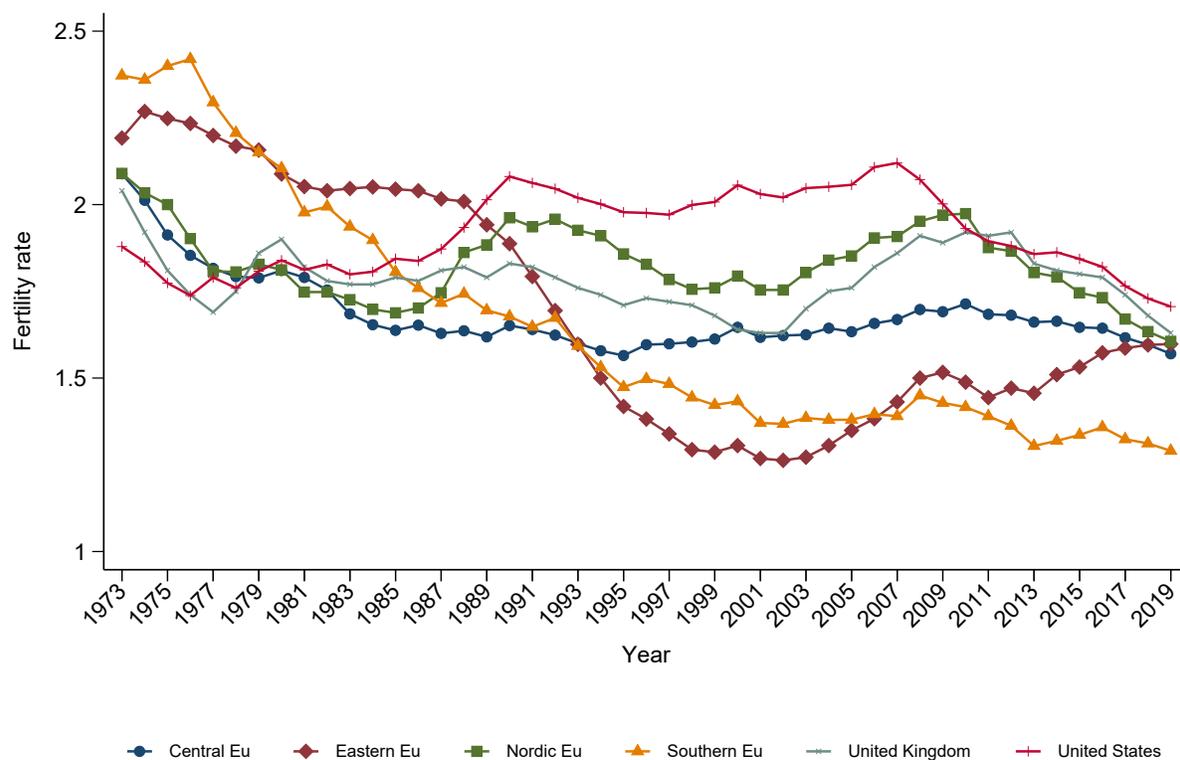
Notes: The source is the OECD Family Database, PF2.1. See Table 1 for the classification of countries into groups.

Figure 3: Fertility rates across OECD countries, 2019



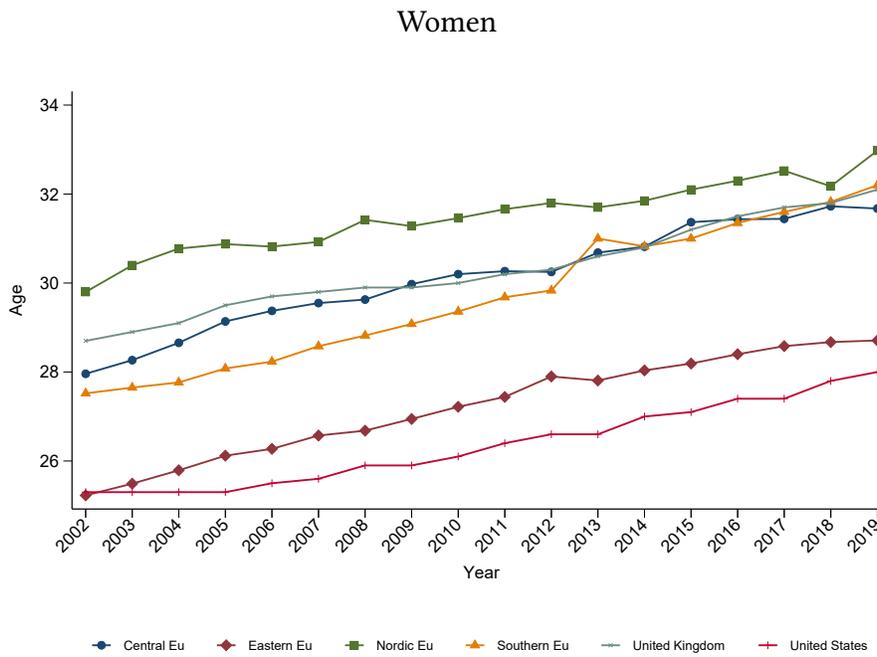
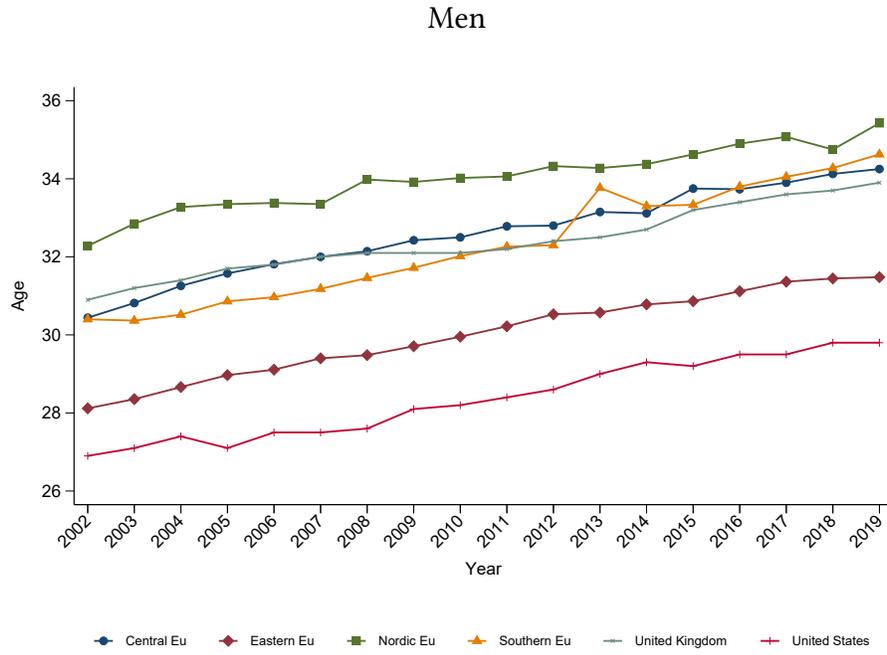
Notes: World Bank data. See Table 1 for the classification of countries into groups.

Figure 4: Fertility trends, 1973-2019



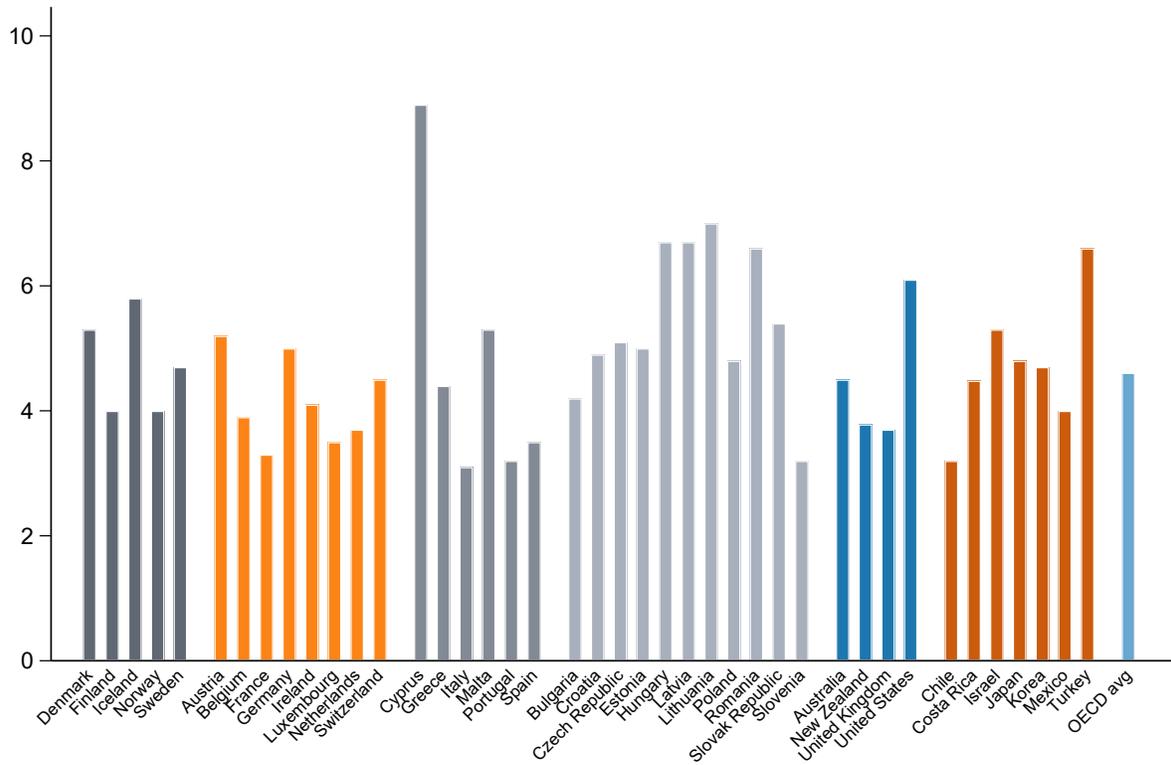
Notes: World Bank data. See Table 1 for the classification of countries into groups.

Figure 5: Age at first marriage trends, 2002-2019



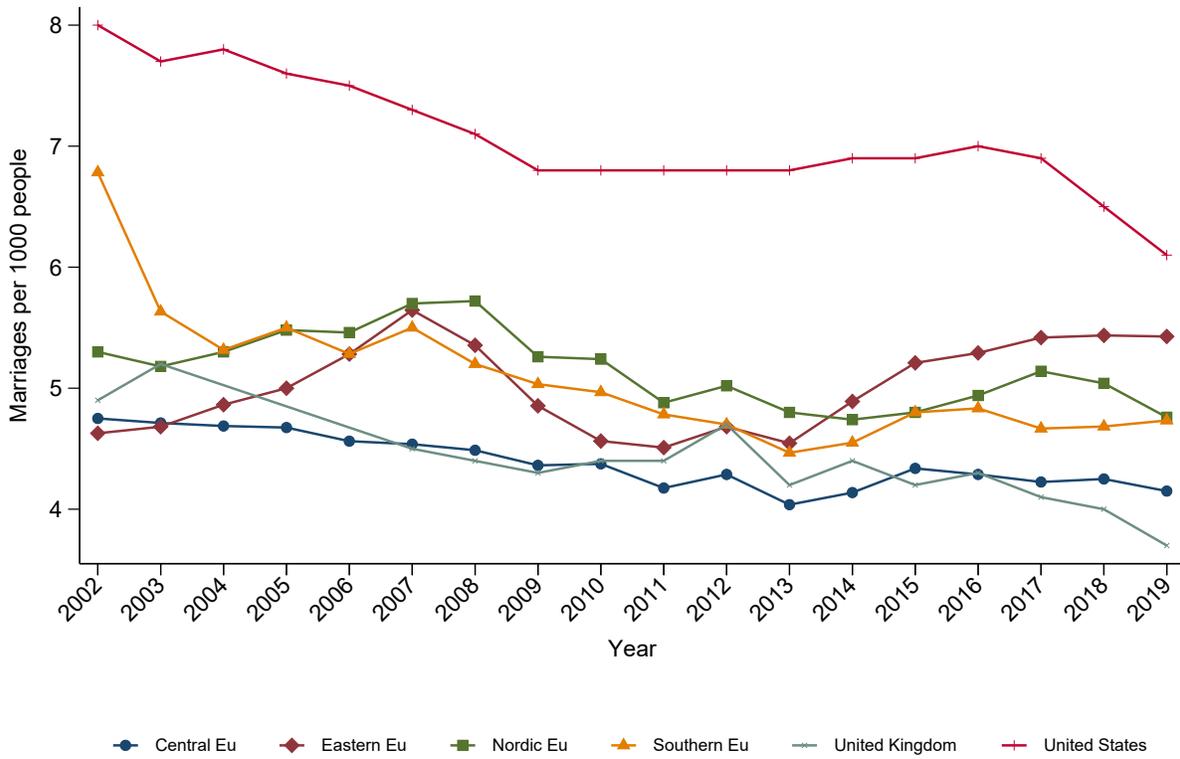
Notes: The source is the OECD family database, SF3.1. See Table 1 for the classification of countries into groups.

Figure 6: Marriage rates across OECD countries, 2019



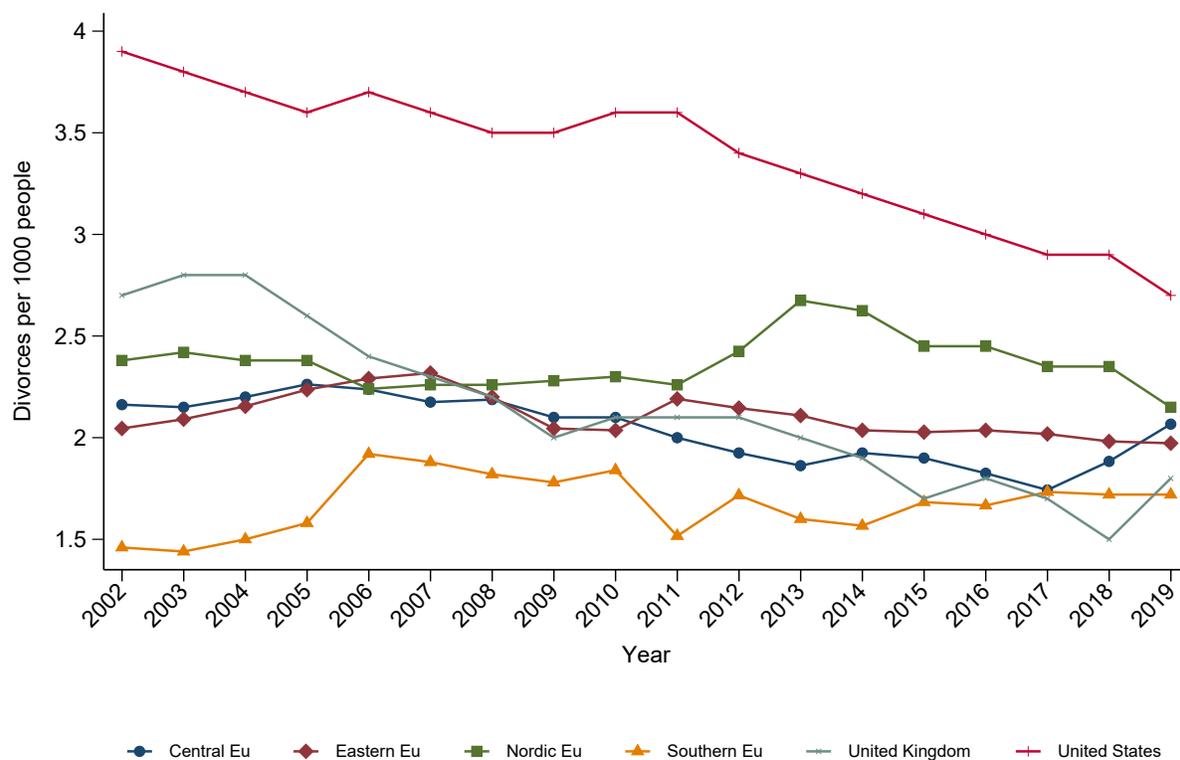
Notes: The source is the OECD family database, SF3.1. See Table 1 for the classification of countries into groups.

Figure 7: Marriage trends, 2002-2019



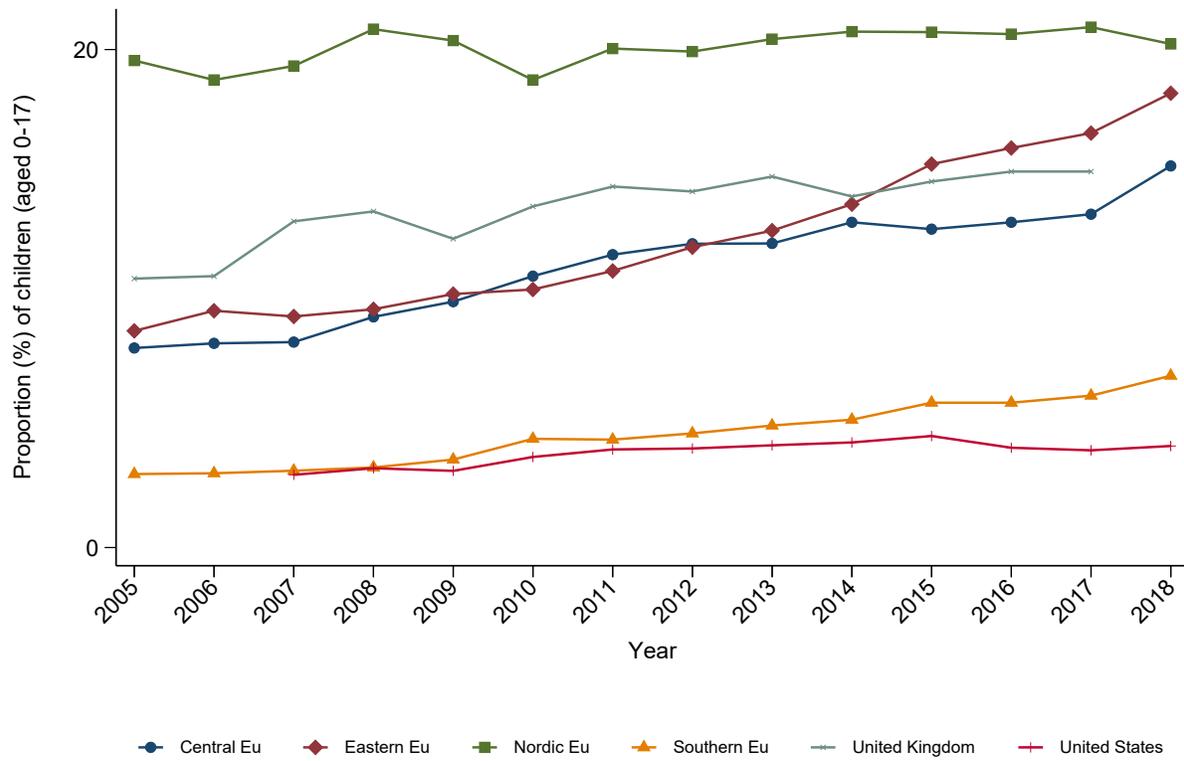
Notes: The source is the OECD family database, SF3.1. See Table 1 for the classification of countries into groups.

Figure 8: Divorce trends, 2002-2019



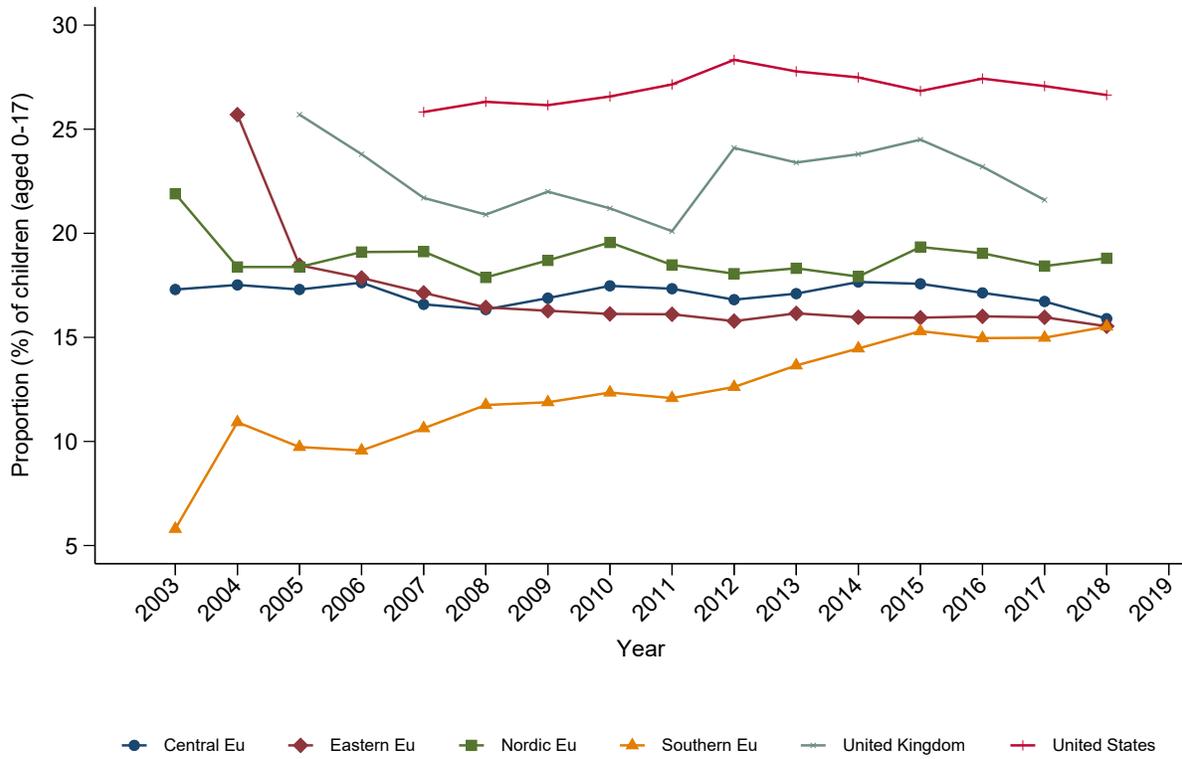
Notes: The source is the OECD family database, SF3.1. See Table 1 for the classification of countries into groups.

Figure 9: Cohabitation trends, 2005-2018



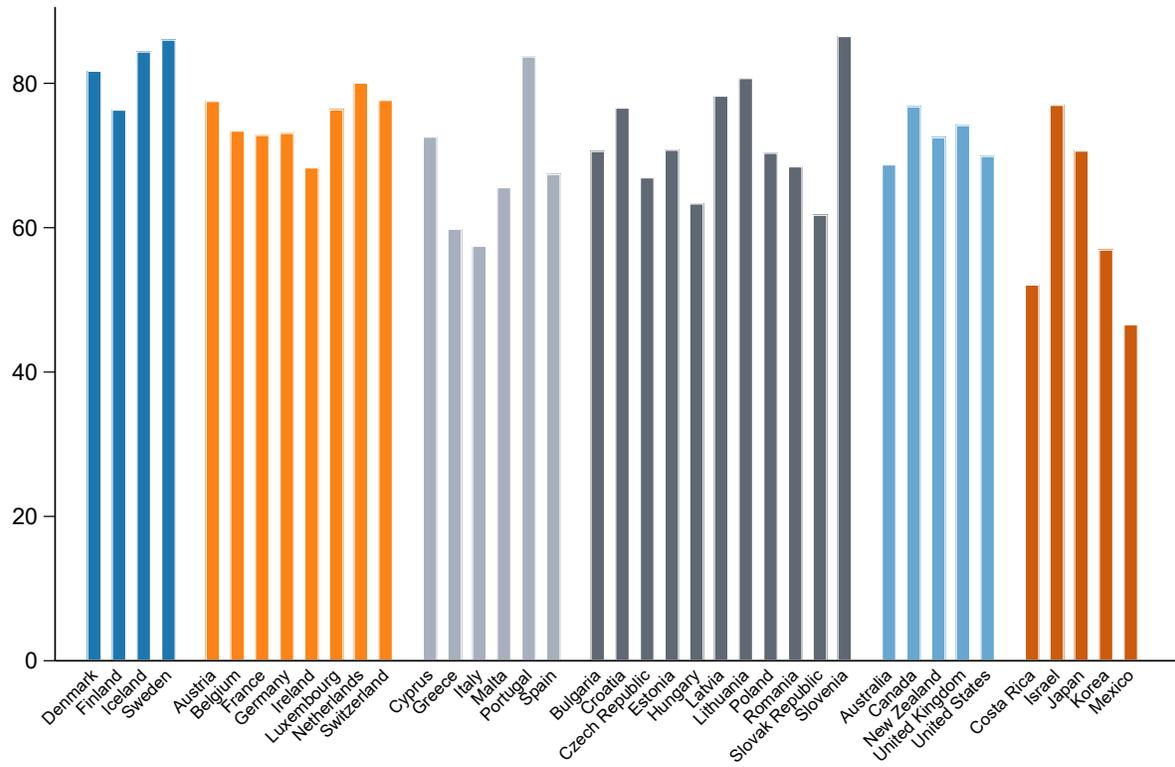
Notes: The source is the OECD family database, SF3.1. See Table 1 for the classification of countries into groups.

Figure 10: Single parenthood trends, 2003-2018



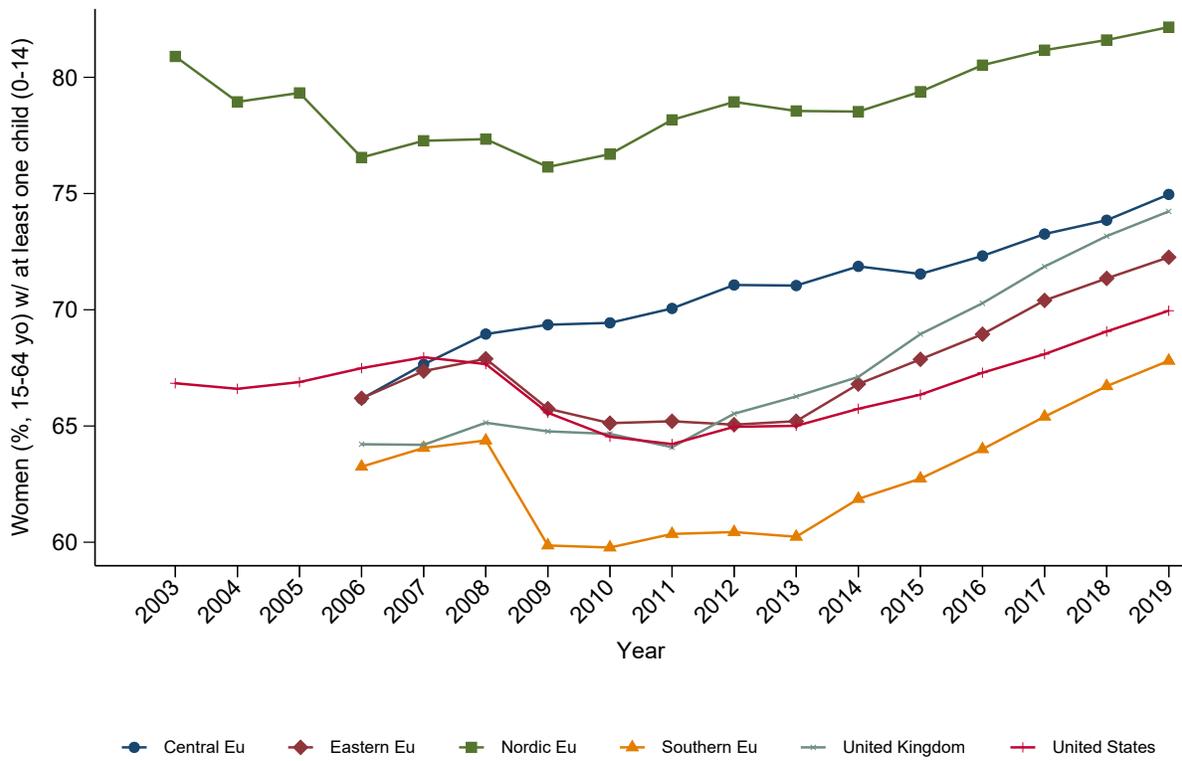
Notes: The source is the OECD family database, SF3.1. See Table 1 for the classification of countries into groups.

Figure 11: Maternal employment rates across OECD countries, 2019



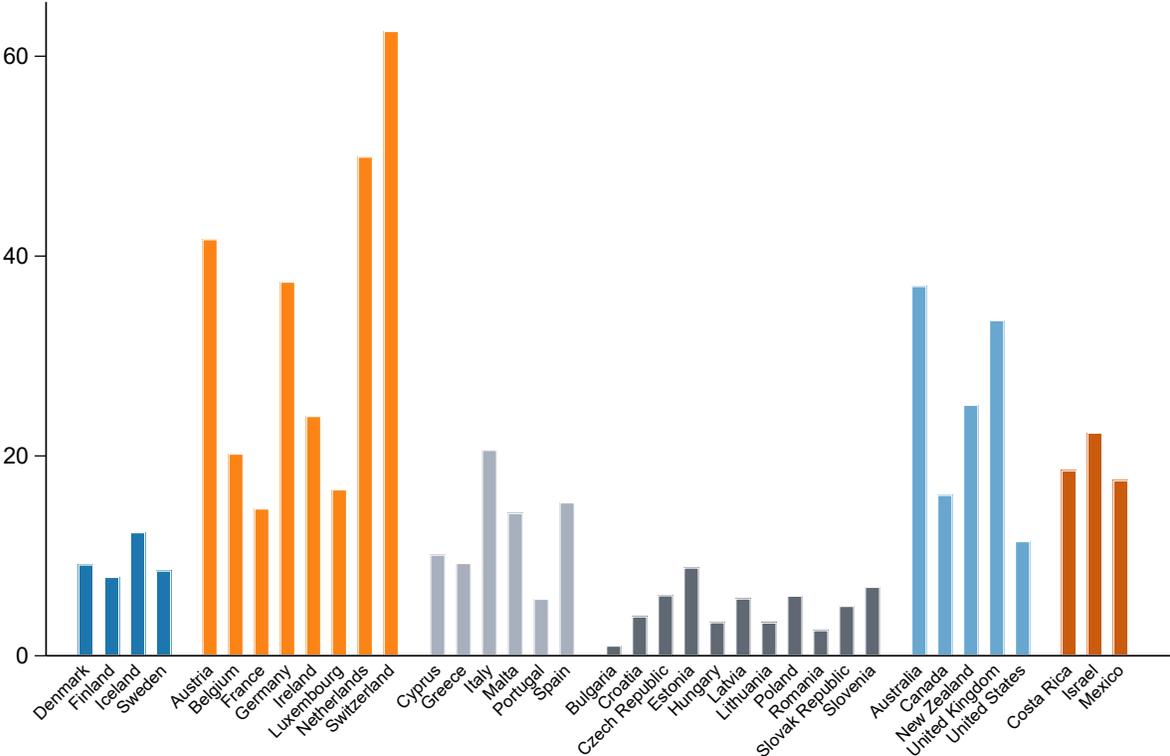
Notes: The source is the OECD family database, LMF1.2. See Table 1 for the classification of countries into groups.

Figure 12: Maternal employment trends, 2003-2019



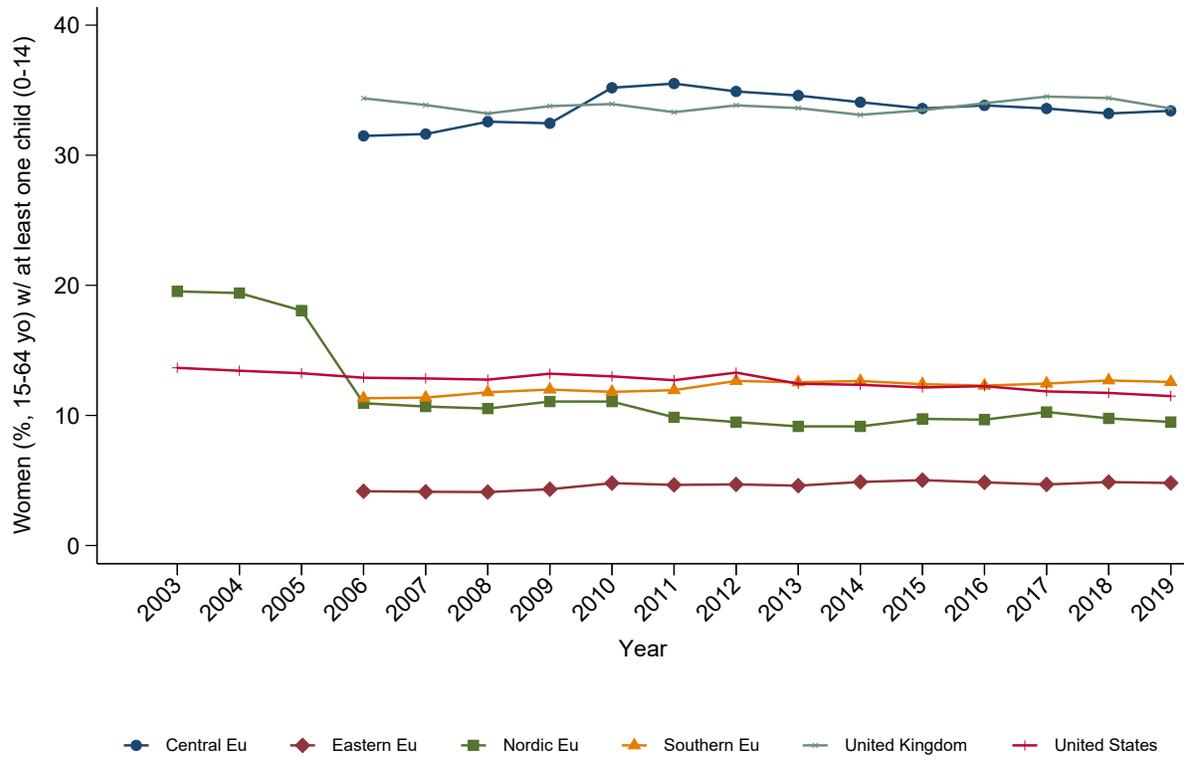
Notes: The source is the OECD family database, LMF1.2. See Table 1 for the classification of countries into groups.

Figure 13: Part-time maternal employment rates across OECD countries, 2019



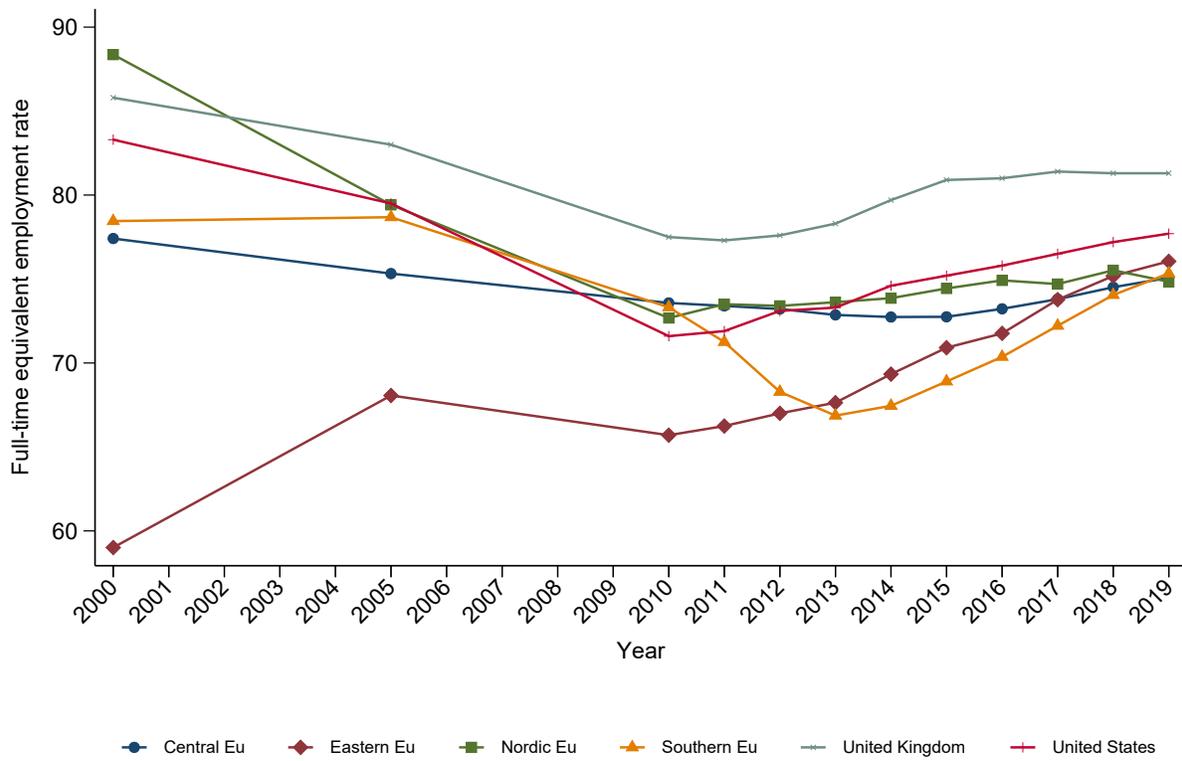
Notes: The source is the OECD family database, LMF1.2. See Table 1 for the classification of countries into groups.

Figure 14: Part-time maternal employment trends, 2003-2019



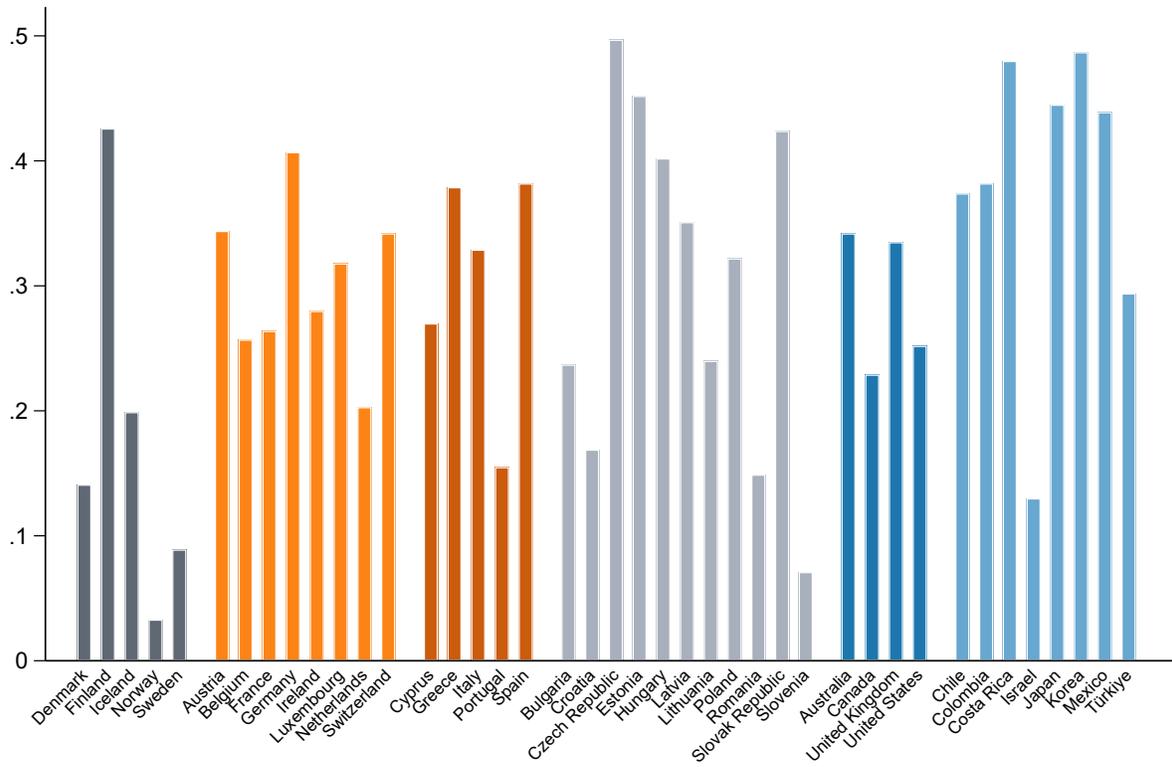
Notes: The source is the OECD family database, LMF1.2. See Table 1 for the classification of countries into groups.

Figure 15: Male employment trends, 2000-2019



Notes: The source is the OECD.Stat. See Table 1 for the classification of countries into groups.

Figure 16: Average child penalty over years 0-10 after birth of first child



Notes: The source is Kleven *et al.* (forthcoming). See Table 1 for the classification of countries into groups.