
RESEARCH REPORT

Motherhood Postponement and Wages in Europe

*Massimiliano Bratti, Elena Meroni,
Chiara Pronzato*

REFORM MODEL

The EU Blue Card – Time to Reform

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The Gender Pay Gap

Spencer Bastani¹, Tomer Blumkin² and Luca Micheletto³

Gender Wage Gap and the Welfare-Enhancing Role of Parental Leave Rules⁴

ABSTRACT

A large body of empirical evidence documents the gender variation in labour market outcomes. A major factor that contributes to persistent gender gaps in labour market performance is women's traditional role in the household. Child-related absences from work imply that women accumulate less job experience, are more prone to career discontinuities and, hence, suffer a motherhood penalty. We highlight how the fundamental gender-driven career/family conflict faced by workers in the labour market may create a normative justification for parental leave rules as a means to enhance efficiency and alleviate the gender pay gap.

1. INTRODUCTION

There is a voluminous body of evidence documenting gender variation in labour market outcomes, including differences in employment rates, working hours, earnings and job composition (in terms of sector, occupation type and scope). A recent survey by Olivetti and Petrongolo (2016) reviews the existing literature and points out that, despite a post-war convergence process, reflecting a host of supply side factors, including, medical advances (availability of birth control), human capital investment (access to higher education) and family-friendly policies (provision of affordable child care services and generous parental leave arrange-

ments), substantial gender differences in pay and employment levels still remain. In a cross-country analysis of gender differences in wages and employment, Olivetti and Petrongolo (2008) report of wage gaps ranging from 10 log-points in southern Europe to 30 log-points in the US and the UK, and employment gaps ranging from 10 percentage-points in the US and the UK to as high as 30-40 percentage points in southern Europe.

On March 8, 2017, the International Women's Day, designated by the UN to advocate for women's rights, The Economist released its fifth annual 'Glass Ceiling Index', which is a composite index measuring the chances of equal treatment faced by women in the labour market [the scale runs between 0=worst and 100=best]. The index accounts for a wide variety of factors including, inter-alia: educational attainment, workforce participation, pay, child-care provision, parental leave arrangements, business school applications and representation in senior positions. The OECD average score of 60 reflects substantial gender gaps. On average, merely 63 percent of women are in the workforce (the corresponding rate for men is 80 percent). The gender wage gap is around 15 percent on average, namely, women earn 85 percent of what men do. There is, notably, much variation across countries. Nordic countries, in which women are more likely than men to earn a college degree or to participate in the workforce, lead the developed world in gender equality (with an average score around 80). Japan and South Korea, in which women are consistently under-represented in management positions, on company boards and in the parliament, are lagging behind, at the other end of the spectrum (with a score around 25).

A major factor that contributes to persistent gender gaps in labour market performance is parenthood. Women, who traditionally take the lion's share of responsibility for the caring of children, tend to have less job experience, greater career discontinuity and shorter work hours, resulting in worse labour market outcomes. Indeed, there is now a growing empirical literature documenting the wage penalty associated with motherhood.

For women in the US, the average wage penalty associated with an additional child is around 5%, and persists even when workplace factors and education are controlled for [Waldfogel (1997), Budig and England (2001)]. Career interruptions and shorter work hours, typically associated with working mothers, are acknowledged as a key factor explaining gender differences in earnings [see, e.g., Bertrand et al. (2010), focusing on the workers in the financial and corporate



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⁴ The current paper is based on our earlier work in Bastani et al. (2016). Financial Support from Riksbankens Jubileumfond and the Jan Wallander and Tom Hedelius Foundation is gratefully acknowledged. The authors wish to thank participants in numerous workshops and seminars for their insightful comments. The usual disclaimer applies.

sector]. High-skilled mothers tend to compromise on part-time low-level jobs, rather than pursuing a professional challenging career, thereby trading-off compensation for workplace flexibility [see Blau and Kahn (2013) and Goldin (2014)].

Workplace flexibility reflects institutional arrangements in the labour market and prevailing norms, but is, to a large extent, shaped by government policy. A notable example is parental leave rules. Taking a broad perspective, they refer to the legal framework regulating the extent to which firms must grant their employees child-related absences from work. The most basic form of parental leave refers to the time parents are permitted to take off work in order to take care of a new-born child, but in many countries parental leave extends beyond the care of infants to encompass additional aspects of workplace flexibility, such as allowing parents to take time off work to care for an older child, or to take care of a sick child.

There are large differences across countries in terms of the generosity of parental leave, such as the duration of leave, the level of benefits, job protection features and eligibility [for a comprehensive recent survey see Rossin-Slater (2017)]. The United States has one of the least generous systems where the flexibility of labour contracts with respect to child-related absences is largely a decision made by employers. The federal Family and Medical Leave Act, which ensures that parents can leave their jobs for 12 weeks and then come back, does not apply to small firms with less than 50 employees. Parental leave in Europe, and especially in the Nordic countries, is significantly more generous. According to the Parental Leave Directive of the European Union (2010/18/EU), parental leave allowances in EU countries must be at least four months for each parent. A country with one of the world's most generous systems is Sweden where each parent has the legal right to be absent from work until the child is 18 months old. In total, Swedish parents are entitled to 480 days of government subsidised parental leave. Unclaimed days can be saved and used for parental leave spells up until the child is 8 years old. This is supplemented by generous sick-leave arrangements allowing parents to take up to 120 days off work per year for each sick child under the age of 12. In addition, parents in Sweden have the right to work 75% out of the normal (full-time) weekly working hours until the child is 8 years old.

The government can make use of parental leave rules as a means to regulate the extent of workplace flexibility. This may serve a dual purpose. First, when the labour market tends to underprovide flexibility, the government may restore efficiency by setting binding parental leave arrangements. Second, by extending the duration of parental leave and subsidising child-related absences from work, the government can promote redistributive goals via reducing the extent of gender pay gaps.

In this paper, we describe, in a non-technical manner, the normative justification for parental leave rules

in the presence of the fundamental gender-driven career/family conflicts faced by workers in the labour market presented in Bastani et al. (2016).

2. A SIMPLE SETUP

We consider a simple labour market setting with just the key ingredients necessary to make our point.⁵ There is an identical number of equally skilled female and male workers. Each worker is endowed with a fixed amount of time that can be allocated between work time and leisure. Workers derive utility from consumption and from the time spent with their children out of work (parental leave). Workers differ in their career/family orientation, which is reflected in the probability of taking parental leave. We simplify by assuming that workers can be either career-oriented (with a low-probability to take a leave) or family-oriented (with a high-probability to take a leave). We further assume that female workers exhibit, on average, a stronger family orientation than their male counterparts. This implies that there is a higher proportion of family-oriented workers among women. To facilitate our exposition, we will focus on the simple case in which gender and career/family orientation are perfectly correlated, namely, all female workers are family-oriented whereas all male workers are career-oriented.

We assume that the labour market is perfectly competitive. A typical labour contract offers the worker a given amount of (monetary) compensation and a given duration of parental leave. The latter captures in a simplistic form the extent of workplace flexibility. Free entry implies that firms break even in expectation. The compensation offered to a worker is equal to his/her expected output (which depends on the probability of taking a leave). The longer the duration of parental leave offered to a worker, the lower would be the compensation that he/she receives. Our setup thus captures in a simplistic form the fundamental tension between compensation and flexibility.

The variation in career/family orientation across workers affects both the demand and the supply side of the labour market. From the firms' perspective, a female worker, being more likely to be absent from work, is (in expected terms) less productive than an equally skilled male counterpart. From the workers' perspective, a stronger family orientation is reflected in a higher willingness to pay for additional flexibility (extended parental leave).

In the *laissez-faire* equilibrium, firms rely on gender-based tagging (statistical discrimination), namely, male and female workers are offered distinct labour contracts (specifying the amount of compensation and duration of parental leave). Each contract maximises the expected utility of the worker subject to his/her expected zero profit condition, i.e. subject to the constraint requiring firms to derive zero profits in expecta-

⁵ Our exposition will be non-technical. For those interested in the formal details, see Bastani et al. (2016).

tion by hiring that specific type of worker. Assuming that the individual utility function is quasi-linear in consumption, both female and male workers are offered an identical level of flexibility. However, male workers, who are less likely to be absent from work (and, hence, are perceived, ex-ante, to be more productive on expected terms), are offered a more generous compensation than their female counterparts.

Interpreting gender as a circumstance for which an individual worker should not be held personally responsible (see e.g. Fleurbaey 2008) implies that male and female workers who are identical in all other respects should be treated equally in the labour market. Evaluated through the lenses of this fairness requirement, the *laissez-faire* allocation appears to be discriminatory. Female workers strictly prefer the bundle associated with their equally skilled male counterparts (offering the same extent of flexibility but a higher level of remuneration).⁶

To create a more realistic benchmark framework for our analysis of the role of parental leave policies, we assume, in line with the current situation in most OECD economies, that the labour market is regulated by anti-discrimination legislation that prevents firms from gender-based tagging. With anti-discrimination legislation in place, firms cannot discriminate directly through gender-based tagging, such that they do it indirectly by offering workers a choice between two career paths: i) family-oriented jobs that offer greater flexibility with respect to child-related absences from work but a lower compensation, and, (ii) career-oriented jobs that demand longer work hours but offer a higher compensation. In equilibrium, workers self-select into the two career paths, according to their gender-driven family orientations.

The contract associated in equilibrium with female workers is identical to that offered to them under *laissez faire* (i.e. when firms are allowed to engage in gender-based tagging). In contrast, male workers are offered a contract that maximises their utility subject to the firm's expected zero profit condition, but also subject to a binding incentive-compatibility constraint, the latter requiring female workers to be indifferent between choosing their own bundle and mimicking (that is, choosing the contract intended for male workers).

The effect of the binding incentive-compatibility constraint is to distort the bundle intended for male workers, thereby creating an efficiency loss. In particular, in order to render mimicking less attractive for female workers, their male counterparts are offered a higher level of remuneration in exchange for a lower level of flexibility (namely, the duration of parental leave is lower than under *laissez faire*).

Before turning to discuss the equilibrium with a binding parental leave rule, one final remark is in order. The equilibrium in the presence of anti-discrimination legislation is similar to the separating equilibrium analysed by Rothschild and Stiglitz (1976) in their seminal paper on asymmetric information and adverse selection. Firms, prevented by anti-discrimination legislation from the possibility of engaging in gender-based tagging, behave as if they were unable to observe the gender of their employees. As is well known from Rothschild and Stiglitz's (1976) contribution, a pooling equilibrium in which both types of workers are offered an identical bundle cannot exist due to 'cream skinning'. Firms can always break a pooling contract and derive positive profits by offering a bundle (with lower flexibility and higher compensation) which would attract male workers only. Thus, by implication, anti-discrimination legislation cannot fully eliminate the gender pay gap by implementing a pooling allocation. Somewhat ironically, the imposition of anti-discrimination legislation does in fact increase the gender pay gap by raising the compensation offered to male workers (at the expense of reduced flexibility).

3. EQUILIBRIUM WITH A PARENTAL LEAVE MANDATE

In our framework, a parental leave mandate implies setting a lower bound on the duration of parental leave offered by firms in the labour market. Below we will focus on the consequences of setting the lower bound on the duration of parental leave at a level that is slightly above the amount prescribed, at the benchmark equilibrium, by the contract intended for male workers. As it turns out, the government can use parental leave arrangements, and in particular a parental leave mandate, to inject the 'missing' flexibility into the labour market, thereby correcting the market failure present in the benchmark equilibrium with anti-discrimination legislation.

The argument can be understood as follows. At the equilibrium with a parental leave mandate, female workers would still be offered their (efficient) *laissez-faire* contract. In contrast, male workers would be offered a new contract satisfying two properties: (i) the duration of parental leave is equal to the mandatory minimal duration set by the parental leave rule (the rule is binding); (ii) female workers are indifferent between choosing their own bundle and mimicking (the incentive-compatibility constraint associated with female workers is binding).

A notable implication of the binding parental leave rule is that free entry no longer eliminates profits in equilibrium. In particular, firms hiring male workers derive strictly positive profits in equilibrium. The reason is that the binding parental leave rule prevents a new firm from entering the market and offering a contract with a slightly lower duration of parental leave in exchange for a higher compensation, thereby luring male workers away from other employers while still

⁶ Notice that we extend the notion of equal treatment to encompass the two dimensions featured in the labor contract: compensation and flexibility. Equal treatment is, therefore, not confined to a narrow definition of an equal pay requirement but is measured in utility terms.

allowing the new firm to make positive profits on each male worker employed.

Assuming that firms' profits can be fully taxed away and rebated back as a universal lump-sum transfer to all workers, we can consider the equilibrium allocation in the presence of a binding parental leave rule supplemented by confiscatory profits taxation and a universal lump-sum transfer. This allocation entails cross-subsidisation from male to female workers.⁷ Female workers remain with their efficient amount of flexibility but receive a lump-sum transfer, so they are unambiguously made strictly better off. In contrast, male workers gain, on the one hand, from enhanced flexibility (which mitigates the distortion that characterises the contract offered to them in the presence of anti-discrimination allocation), but lose, on the other hand, from the profits of taxation that essentially work like an income tax levied on them (seeing the firm's output as the workers' income). The net effect for male workers is therefore generally ambiguous, and depends on the specific parametric assumptions. However, one can provide a necessary and sufficient condition for male workers to gain, all-in-all, from the suggested policy reform and, hence, for a Pareto improvement to arise.

Our numerical analysis [see Bastani et al. (2016) for details] demonstrates that a Pareto improvement is indeed possible for a wide range of parameter combinations. It further shows that as the family orientation of female workers becomes stronger relative to their male counterparts, reflected in an increased probability to take a leave, the case for an efficiency-enhancing government intervention weakens. *Prima facie*, this property seems surprising as one might expect that, as the gender differences in the 'demand for workplace flexibility' become larger, the distortion that arises due to anti-discrimination legislation would increase, and thus the scope for government intervention would become larger. However, an increase in the likelihood of female workers to take a leave also affects the 'information rent' needed to maintain the allocation incentive-compatible. Providing male workers with additional workplace flexibility in exchange for reduced remuneration, leaving them equally well-off, renders career paths more attractive for female workers (who assign a higher value to flexibility), thereby making it more costly for the government to intervene. Our numerical analysis suggests that the second effect prevails.

⁷ In most OECD countries (the US being the exception) the government subsidises the child-related absences from work that are mandated by law. In Bastani et al. (2016) we also examine the normative implications of replacing the lump-sum system with a duration-dependent benefit system. With such an alternative benefit scheme, female workers stand to gain relative to their male counterparts due to their higher likelihood of absence. A subsidised parental leave can hence promote re-distribution by enhancing the extent of cross-subsidisation between male and female workers, thereby reducing the gender pay gap. In contrast, such a scheme cannot serve to mitigate the binding incentive-compatibility constraint associated with female workers in the benchmark equilibrium and hence cannot be justified on efficiency grounds.

Parental leave rules are often justified on efficiency grounds as a means to internalise externalities associated with fertility and demographic composition or with extended parental time with children at home. We have described a novel normative justification for imposing a binding parental leave rule, as a means for correcting the inefficiency entailed by anti-discrimination legislation.

Albeit our preceding argument focused purely on efficiency, one can notice that by counteracting the distortion generated by anti-discrimination legislation, a parental leave mandate reduces the gender pay gap. Next, we discuss in more detail the potential redistributive role of parental leave rules.

4. THE OPTIMAL DURATION OF PARENTAL LEAVE

Assuming that social welfare is given by a weighted average of the utilities derived by both types of workers (female and male), we now address the following normative question: what would be the socially desirable duration of parental leave?

Without being excessively unrealistic and in order to set the focus on the role played by parental leave rules in alleviating gender pay gaps, we will assume that the weight assigned to female workers in the social welfare function is higher than their respective share in the population. To analyse the optimal duration of parental leave, one has to account for the possibility of implementing either separating or pooling labor-market equilibria.⁸

In a separating equilibrium with a binding parental leave rule in place, and due to the fact that firms hiring male workers derive positive profits, the possibility to tax these profits and rebate them as transfers (either in a lump-sum fashion or per unit of time spent on leave) induces cross-subsidisation from male to female workers. Thus, extending the duration of parental leave further enhances the extent of cross-subsidisation and serves to promote gender equality.

In a pooling equilibrium, both types of workers are offered the same duration of parental leave. However, as female workers are more likely to take the leave, there is an induced cross-subsidization from male to female workers. That is, both types of workers are remunerated according to the average probability of taking parental leave, although female workers are more likely to do so. As in the separating case, extending the duration of parental leave under a pooling allocation enhances the degree of cross-subsidisation from male to female workers. Notably, a pooling equilibrium fully eliminates the gender wage gap associated with the motherhood penalty.

Comparing the optimal policy regimes associated with the separating and pooling equilibria provides

⁸ A pooling equilibrium is supported by the binding parental leave rule. The reason is that a binding parental leave rule prevents 'cream-skimming' by firms. See Bastani et al. (2016) for details.

three key policy insights:⁹ (i) the social optimum is always given by a pooling equilibrium; (ii) the optimal duration of parental leave is increasing in the weight assigned to female workers in the social welfare function; (iii) the optimal duration of parental leave is longer than the (efficient) duration of leave offered to both types of workers under the *laissez faire* allocation (and to female workers under the benchmark regime).

The welfare dominance of the pooling equilibrium hinges on the assumption that the government has a bias in favour of female workers. Relaxing this assumption, one can show that the social optimum would be given by a separating allocation. Extending the duration of the leave enhances the extent of cross-subsidisation, which becomes more desirable as the weight assigned to female workers in the social welfare function increases. The reason why both types of workers take more parental leave than the efficient amount reflects a typical equity-efficiency tradeoff. As a relatively high weight is placed on the well-being of female workers, extending the duration above the efficient amount increases social welfare. The higher duration of parental leave, which is more valued by female workers exhibiting a stronger family orientation, induces an implicit cross-subsidisation from male workers to their female counterparts.

5. CONCLUDING REMARKS

Despite a remarkable post-war convergence process, substantial gender differences in pay and employment levels are prevalent in most OECD countries. A major factor that contributes to the persistent gender gaps in labour market performance is women's traditional role in the household. Child-related absences from work imply that women tend to accumulate less job experience, are more prone to career discontinuity and typically compromise on part-time flexible non-professional jobs, resulting in a substantial motherhood wage penalty. Women are essentially trading off flexibility for compensation in order to reconcile household and work obligations.

Workplace flexibility is to a large extent shaped by government policy, with a notable example being parental leave arrangements. In this article, we have described a simple model that captures the fundamental gender-driven career/family conflicts faced by workers in the labour market and how it can be used to examine the normative justification for parental leave rules. We have focused on a competitive labour market regulated by anti-discrimination legislation that prevents firms from engaging in gender-based tagging, resulting in an under-provision of workplace flexibility and differences in wages between equally skilled men and women. In this setting, we have highlighted how parental leave arrangements can be a key policy tool to regulate the extent of workplace flexibility and serve a

dual purpose of correcting for the market failure associated with the under-provision of workplace flexibility and promoting redistributive goals by reducing gender pay gaps.

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⁹ See Bastani et al. (2016) for details.

Mike Brewer and Sarah Cattan

Universal Pre-School and Labor Supply of Mothers

INTRODUCTION



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Expanding access to pre-school education and childcare services has been a key policy on the agenda of many governments for over 30 years. Several motivations have been at the heart of these policies. On the one hand, expanding access to quality pre-school education is expected to have positive effects on child development and reduce socio-economic inequalities in life chances by providing a nurturing and stimulating environment to all children. On the other hand, an increased availability of affordable pre-school services is also hoped to raise maternal employment, which in turn could promote gender equality, reduce poverty, foster economic growth and increase the tax base. By making it easier to reconcile work and family responsibilities, the provision of childcare services might also help to increase fertility, which could contribute to relieving pressures created by ageing populations.

A large and robust literature that looks carefully at various policies implemented over the past 30 years provides important insights into the link between universal pre-school and maternal labour supply. It shows that universal pre-school childcare is not always a panacea; instead, the impact of these policies has been very mixed. In what follows, we summarise this evidence, discuss why it is so mixed, and ask whether lessons can be learned to make future policies more effective.

BACKGROUND

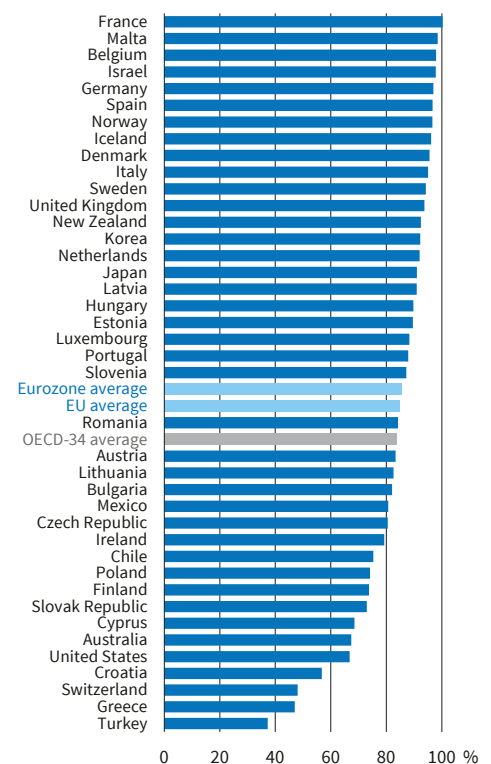
Several Scandinavian countries have been providing high-quality affordable childcare for pre-school children of all socio-economic backgrounds since the 1970s. Throughout the following decades, many middle and high-income countries followed the Nordic example and introduced policies aimed at making pre-school education universal by increasing its availability or making it cheaper for parents to use. Pre-school education is now available to more families than ever before, but there is still a wide variation in the use of childcare services across countries (Figure 1). This is despite strong political pressure for further expanding the access. In the European Union, for example, it was agreed at the 2002 Barcelona Summit that member states should provide childcare to at least 90% of children between 3 years old and the mandatory school age, and to at least 33% of children under 3 years of age by 2010.

Similarly to the wide variation in the use of childcare, there is a wide variation in how childcare services are organised and provided. Figure 2 shows the variation across countries in the effective cost of childcare to a specific family, but it also hints at the different ways that childcare services are implicitly or explicitly subsidised by governments. And there remains a considerable “motherhood” gap in employment. Across all OECD countries in 2013, 54% of mothers whose youngest child is aged 0-2 (or 67% of those whose youngest is aged 3-5) were employed, with an overall female employment rate of 74%. Some mothers may prefer not to work while their children are young, but survey data suggest that the lack of affordability and availability of pre-school and childcare services are important factors which hold mothers back from working more. According to the 2012 European Quality of Life Survey, almost 60% of childcare users report difficulties with childcare use in the European Union because of cost and availability, with a third reporting severe difficulties (Molinuevo, 2015).

Therefore, the question of whether universal pre-school can promote maternal labour supply remains highly relevant to the public debate in many countries.

Figure 1

Enrolment Rates for 3-to-5-Year-Olds in Pre-Primary Education or Primary School, 2014



Source: OECD Education Database.

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EVIDENCE ON THE IMPACT OF UNIVERSAL PRE-SCHOOL ON MATERNAL LABOUR SUPPLY

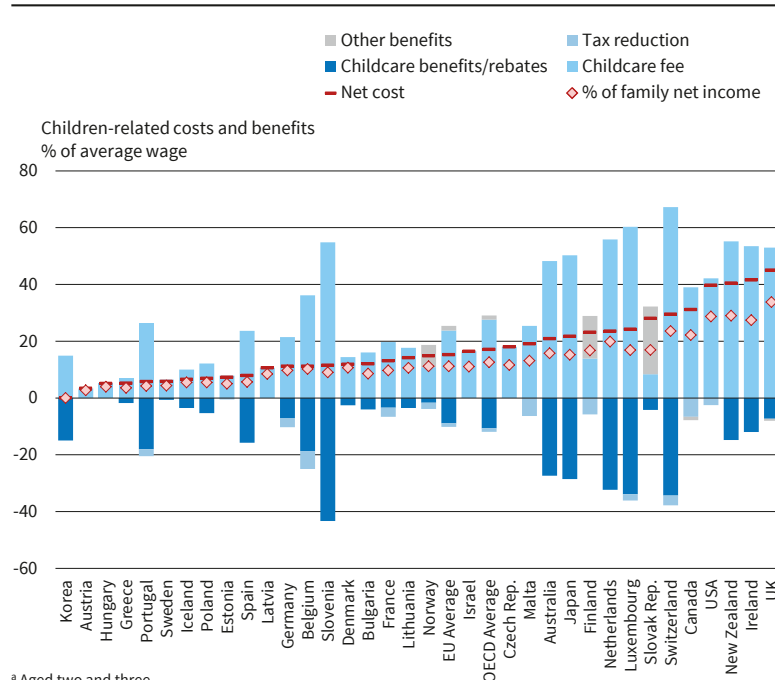
The impact of the provision of pre-school on maternal labour supply has long been a question of interest to economists. However, estimating this impact is challenging. Ideally, researchers would randomise access to pre-school across families. In this situation, the impact of access on maternal labour supply would be measured by simply comparing the labour market outcomes of mothers whose children have been assigned access and those of mothers whose children have not.

Obviously, such an experiment is difficult, if not impossible, to implement, so economists have looked for real life situations or “quasi-experiments” to mimic this type of situation. The introduction of policies expanding access to pre-school over the past 30 years has provided many such situations and enabled economists to estimate the causal impact of increased access to pre-school on maternal labour supply in a robust fashion. Economists have used two main features of these policies as source of quasi-random variation in access to pre-school. First, researchers have exploited the fact that governments have often increased the number of free or subsidised pre-school places at a different pace in different regions of the country. Under the assumption that maternal labour supply would have evolved similarly in all regions otherwise, it is possible to attribute to the impact of the programme the difference in the change in labour market outcomes of mothers over time between regions where access expanded more quickly and regions where access expanded more slowly.

Second, in many countries, children become eligible for free or subsidised pre-school on a particular date that is based on their date of birth (for example, children might be allowed to access pre-school from the first September that follows their third birthday). This type of rule means that two otherwise very similar children born just one day apart (on, say, 31 August and 1 September) would become eligible for a free place perhaps up to a year apart. The short-run impact of becoming eligible for a free pre-school place can then be estimated by comparing the outcomes for mothers of children born on either side of the cut-off date.

Figure 2

Net Childcare Costs for a Dual-Earner Family with Two Children^a and with Full-Time Earnings at 150% of the Average Wage, 2012



^a Aged two and three.

Source: OECD Family Database.

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Today, this “quasi-experimental” literature includes studies spanning a wide range of countries from different regions of the world and with different institutions and cultural traditions. In Table 1, we summarise the key aspects of a subset of these papers. What we find is that the provision of subsidised pre-school education has had very different impacts on maternal employment and hours of work across countries and across different groups of mothers within countries. Some countries, such as Spain, Argentina and Canada, saw significant increases in maternal labour force participation as a result of policies that expanded access to pre-school education. In other countries, such as the US and some of the Nordic countries, offering free or cheaper care to pre-school children seems to have had no impact.

WHAT DETERMINES THE EFFECTIVENESS OF UNIVERSAL PRE-SCHOOL AT INCREASING MATERNAL LABOUR SUPPLY?

As recent studies [Bauernschuster and Schlotter (2015), Cascio et al. (2015) and Cattani (2016)] have observed, there are several factors that influence the effectiveness of universal pre-school on maternal labour supply.

First, universal pre-school policies have typically been more effective in contexts where the availability and use of alternative forms of childcare were low to begin with. Where mothers were already relying on informal care, or paying for privately-provided care, we

Table 1

Review of Studies Evaluating the Maternal Labour Supply Impacts of Pre-School Policies

Country	Policy	Impact	Reference
Argentina	Large-scale construction of pre-primary school facilities for children aged 3-5 between 1993 and 1999. Half-day, 5 working days	7-14 percentage point (pp) increase in maternal employment when the stock of pre-primary places increases from covering 0 to 100% of children aged 3-5 in the province.	Berlinski and Galiani (2007)
Spain	Extension of pre-school places for 3-year-olds on the premises of primary schools starting in 1991-92. Full-day, 5 working days	2.8 pp increase in employment rate as a result of offering full-time public childcare for 3 year olds	Nollenberg and Rodriguez-Planas (2015)
US	Universal pre-K availability for 4-year-olds in Georgia and Oklahoma. Full-day, 5 working days	No impact on maternal labour supply	Fitzpatrick (2010)
US	Pre-K funding initiatives for 3 and 4 year olds in several districts of the US between 1990 and 2006. Full or part-day for 4 or 5 days a week depending on district.	3.8 pp increase in labour force participation and 4.4 pp increase in employment of mothers of 4-year-olds as a result of introducing PK in a school district	Sall (2014)
US	Introduction of kindergarten programs for 5-year-olds in different school districts between mid-1960s to late 1970s. Half-day.	12 pp increase in employment as a result of the increase in places associated with the initiatives (at least four single mothers with no children younger than five entered the work force for every ten additional children enrolled in public school)	Cascio (2009)
Canada (Quebec)	Provision of day care spaces at the subsidized free of \$5/day/child for children aged 0-4 (introduced in early 2000s). Full-day, 5 working days	7.7 pp increase in employment of women in two-parent families (effects for lone mothers not reported)	Baker, Gruber and Milligan (2008)
UK (England)	Provision of free half-day (15 hrs/wk) nursery places for 3-year-olds and free full-day (30-35hrs/wk) school places for 4-year-olds. Both are 5 working days, 38 weeks per year (introduced in 1990s and 2000s)	2.1 pp (no) increase in participation (employment) one year after eligibility to free part/time nursery. 5.7 pp (3.5 pp) increase in participation (employment) one year after eligibility to free full/time education (relative to last term of part/time nursery)	Brewer, Cattam, Crawford and Rabe (2017)
Germany	Introduction of a legal claim to a place in kindergarten in Germany for children aged 3 to 6 in 1996. Half day, 5 working days.	Eligibility due to the cut-off rule increases the probability of employment by 6 pp	Bauernschuster and Schlotter (2015)
Norway	1975 Kindergarten Act to quadruple the number of child care places for 3-6 years old by 1981. Full-day, 5 working days	Hardly any effect of reform on maternal labour supply	Havnes and Mogstad (2011)
Sweden	Introduction of a cap on childcare prices that led to considerable reductions in prices depending on family type and region of residence in 2002	No effect on maternal labour supply	Lundin, Mork and Ockert (2008)
France	Provision of free public schooling for 2- and 3-year olds. 28 hours per week.	No impact of eligibility at 2 years old. 3.6 pp increase in participation of lone mothers from eligibility at 3 years old. No impact on mothers in two-parent families.	Goux and Maurin (2010)

Source: The authors.

can see that mothers substituted the newly-provided or cheaper service for other arrangements, but did not change their labour market behaviour very much. However, in contexts where an expansion of universal pre-school care represents an overall expansion in the use of childcare, universal pre-school care genuinely eases the constraints preventing mothers from working and, as a result, can have a greater impact on maternal employment. In other words, policies aimed at expanding access are more effective in contexts where there is less scope for universal pre-school policies to “crowd-out” other childcare arrangements. The experiences of Norway and Argentina provide a good illustration of this contrast. In Norway in the early 1970s, Havnes and Mogstad (2013) argue that working mothers relied heavily on informal care. As a result, when heavily subsidised pre-school services were offered for all children between the ages of 3 and 6, the employment rate of mothers only increased marginally. In Argentina, though, the construction of pre-primary places in primary schools in the 1990s led to a large increase in the take-up of pre-school education services by children

who would otherwise have stayed at home with their mothers. Accordingly, the policy led to a large increase in the labour force participation of these mothers (Berlinski and Galliani, 2007).

Second, universal pre-school policies have larger effects on maternal labour supply in contexts where the female employment rate was initially relatively low. For example, despite being very generous, the expansion of childcare subsidies in Sweden in the early 2000s, where the employment rate of women was already around 80%, did not affect maternal employment at all. In contrast, in Argentina and Spain, where female employment has traditionally been much lower, universal pre-school childcare had a much larger impact. This echoes the argument that women’s, or mothers’, labour supply elasticities may be falling as it becomes more normal for more women to work (Fitzpatrick, 2012). However, in countries where female employment is low, the price and availability of pre-school services may not be the only barrier preventing mothers from working more: labour demand could be low if the country is experiencing an economic slowdown or if

cultural norms are unfavourable to women working. Both of these factors could, in principle, weaken the ability of universal pre-school to increase maternal labour supply.

It is important to note that there is also a lot of heterogeneity in the impact of these policies within countries (i.e. between groups of different mothers). First, a near-universal finding is that expanded access to pre-school has benefited only mothers who do not have other, younger children. Second, many studies have found that single mothers benefit more from these policies than mothers in two-partner families. This is likely to be the result of two counteracting factors. Single mothers are more likely to be affected, first, by time constraints on when they can work, and second, by credit constraints on affording childcare compared to married mothers. On the other hand, the pay-off from working at all is likely to be higher for highly-skilled women than for those with low education.

Finally, it is important to emphasise that the policies that have been evaluated in the literature vary considerably in design. For example, some reforms increased the availability of free or highly subsidised pre-school education, but others have only changed its price. A priori, one would think that policies affecting both availability and price of pre-school might have a larger impact than those only reducing its price. Additionally, the policies differ widely in the size of the explicit or implicit subsidy, the number of free hours provided, the flexibility with which the subsidy can be taken and the age of the children targeted. All these factors are likely to play an important role in determining whether the provision of universal pre-school helps mothers to work more on the labour market, although there is little evidence of the impact of two slightly different policies within the same context [the exceptions are Goux and Maurin (2008) who compare the impact of free pre-school for two- and three-year-olds in France, and Brewer et al. (2017) who compare the provision of free part-time and free full-time care in England]. Finally, these policies also sit in different institutional contexts where other family policies, such as parental leave or other childcare subsidies, can interact with universal pre-school and exacerbate or weaken the impact of universal pre-school per se.

CONCLUDING THOUGHTS

Our own experience in the UK tells us that concluding that universal pre-school care might do little to help maternal employment can seem counter-intuitive to policy-makers. It is important to realise that, even in contexts where we might expect universal pre-school care to have little impact (that is, in countries with high female employment rates and a functioning market for formal or informal childcare), governments might still be able to justify the expense of universal pre-school care. First, governments usually have several objectives in mind when implementing universal pre-school

care, typically some combination of improving, or at least reducing disparities in, children's outcomes, and facilitating maternal employment. Second, where there are benefits from universal pre-school, they do seem concentrated amongst the more disadvantaged mothers, and governments might decide that a universalist approach harms incentives less, or would have greater take-up and less stigma, than a targeted approach. Third, there are also social or political arguments that could support universal pre-school childcare, in that the policy sends a message that caring for children is not just a private matter for families (and, of course, that typically means mothers) to arrange, but it is a concern of the entire society. However, given the expense of universal care, policy-makers might also ask what else they should do to facilitate maternal employment. We suspect this is an area where policy and values need to work together: not only do we need childcare that enables mothers to work, and a tax system that does not unduly penalise second earners, but we also need society in general and employers in particular to support maternal employment, and we need fathers to do more at home so that mothers can do less. Lastly, we might also need childcare policies to relate more closely to parental leave policies, as evidence suggests that the key decision mothers make is whether to return to their previous job as soon as parental leave ends, and this might suggest that it is childcare for the very young – the under three-year-olds – that is more important for maternal employment than childcare for the over three-year-olds.

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Gender Differences in Competitiveness

Women are globally under-represented in top-tier jobs, and according to recent data, in 2013 only around 20 percent of board members in OECD countries were female (OECD, 2013). In addition, empirical studies using different research strategies and rich data consistently find that women earn less than men (e.g. Weichselbaumer and Winter-Ebmer, 2005). Differences in formal qualification levels between men and women have converged over the past decades (Goldin 2006) and cannot explain differences in labour market outcomes between men and women at present as well as in earlier decades.

Apart from classical wage discrimination theories (Becker, 1957), part of this gender gap in labour market outcomes could be explained by systematic gender differences in competitiveness. Attitudes towards competitiveness are relevant for educational decisions, during wage negotiations or for occupational choices. For example, women tend to choose different majors in tertiary education (Zafar, 2013) and choose different occupations than men (Goldin, 2014). Differences in competitiveness might determine a career path if promotions are linked to performance in competitive settings. Reuben, Sapienza, and Zingales (2015) ascertain that male graduates are more competitive than female graduates in the beginning of their career and they are more likely to select themselves into higher paid industries. Overall, they conclude that gender differences in competitiveness explain about 10 percent of the gender gap in earnings.

GENDER AND COMPETITIVENESS

Gneezy, Niederle, and Rustichini (2003) and Niederle and Vesterlund (2007), among others, provide evidence that women tend to shy away from competition. Differences in self-esteem (Figure 1) could be one potential cause for gender differences in the willingness to compete or performance under competition (e.g. Judge and Bono, 2011; Drago, 2011.)

Competitiveness requires the willingness to incur risk. Consequently, gender differ-

ences in risk preferences are closely related to competitiveness. Usually, top-level jobs, which typically command high wages, require risky decisions. Managers take risks when they make strategic decisions, for example, investment decisions of fund managers. (See Filippin (2016) for a thorough discussion of the empirical evidence on gender differences in risk attitudes.)

The empirical evidence on gender differences in competitive behaviour mainly originates from laboratory experiments. Overall, the evidence shows a clear gender difference in competitiveness, however, results appear to be sensitive to the experiments' design and underlying data. In a seminal study, Gneezy, Niederle and Rustichini (2003) study the behaviour of men and women in a laboratory experiment. The authors vary the degree of competitiveness throughout the experiment, and as the level of competitiveness increases, the performances of male participants increase. However, this is not the case for female participants. This gender gap is even greater in mixed-sex situations.

Niederle and Vesterlund (2007) find that women shy away from competition while men embrace it. They document substantial differences in the willingness to compete. When given the choice between a competitive and a non-competitive situation, 73 percent of male participants opt for the competitive option, but only 35 percent of female participants do so. Interestingly, these choices do not lead to different productivities. The authors argue that this is caused by men who systematically overestimate their performance. Palomino and Peyrache (2010) find that such a misperception of one's own productivity is only present in the early stages of a career.

Gender differences in attitudes towards competitiveness and risk-aversion can be found already among young children. Sutter and Glätzle-Rützler (2014), who analyse competitive behaviour of children in kindergarten, conclude that preferences regarding competitiveness are formed early in life and that the gender gap is persistent into adolescence. However, the willing-



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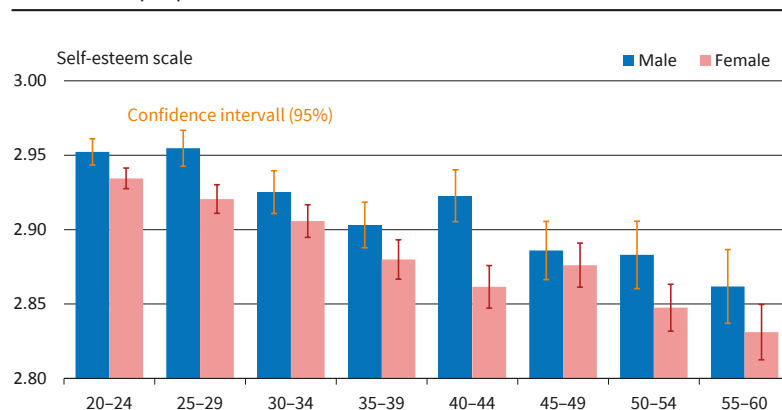
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Figure 1

Mean Reported Self-Esteem by Gender and Age-Group Using the Rosenberg-Self-Esteem Scale (1-4)



Source: Data retrieved from global online survey data at http://personality-testing.info/_rawdata/ (May 7, 2017). N=28,830.

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ness to compete might be related to the family's financial status. Almås, Cappelen, Salvanes, Sørensen and Tungodden (2015) find that girls shy away from competition in a sample of well-endowed families and they do not find a gender gap in competitiveness for children from families with a lower socioeconomic background. Booth and Nolen (2012) find an effect of the gender composition of schools on competitiveness of school children. Girls from single-sex schools behave just as competitively as boys. In contrast, Samak (2013) finds no overall gender differences in the selection into a competitive scheme in an experiment involving school children.

Evidence from a large-scale global experimental study suggests that attitudes towards competitiveness are also formed by cultural differences. Cardenas, Dreber, von Essen, and Ranehill (2012) conducted laboratory experiments with school children in Colombia and Sweden and found that boys and girls are equally competitive in Colombia, while Swedish boys tend to be more competitive than girls.

Hogarth, Karellaia and Trujillo (2012) provide evidence for a gender gap in exiting competitive situations. Using data from a TV game-show, they show that women tend to leave competitions at a faster rate than men, resulting in a substantial gap in winnings.

Recent evidence suggests that the gender gap in competitiveness may depend on incentives. Petrie and Segal (2015) find that a higher prize induces women to enter a competition as often as men. Furthermore, at the point where both genders enter at equal rates, they also perform equally well. The authors argue that if firms benefit from a higher share of women or from a balanced composition of their workforce, it might be in their interest to increase wages to the point where men and women are equally competitive.

It is not clear what causes gender differences in competitiveness, nature or nurture. Andersen, Ertac, Gneezy, List and Mayimiano (2013) present evidence for a strong role of culture and socialisation (nurture) for the formation of attitudes towards competitiveness among children. Their findings suggest that matrilineal societies do not create gender differences in competitiveness. They find gender gaps only in patriarchal societies. Their findings confirm earlier results by Gneezy, Leonard and List (2009) who, however, did not focus on children.

In contrast, Buser (2012) presents evidence in favour of nature as a driving force behind gender differences in competitiveness. In a laboratory experiment, women select themselves into a competitive scheme less often when they have high levels of the sex hormone progesterone, which varies with the menstrual cycle (and the intake of hormonal contraceptives). Wozniak, Harbaugh and Mayr (2014) provide similar results for the effect of the menstrual cycle on women's willingness to compete. They find that women in the high-hormone phase are more likely to compete than women in the low-hormone phase. This gender differ-

ence on competitiveness disappears as subjects are provided with performance feedback. The results are consistent with an evolutionary explanation where competitiveness (for a partner) is valuable during fertile phases of the menstrual cycle, i.e. phases when hormone levels are high.

PERFORMANCE AND COMPETITIVENESS

Samak (2013) finds a sizeable difference in performance between boys and girls under the competitive scheme, which disappeared when participants were able to self-select into competition. Gneezy and Rustichini (2004) document that boys – in contrast to girls – improve their performance when they perform in a competitive setting. Healy and Pate (2011) show that the gender gap in competitiveness is lower when individual persons form teams. Women are found to be more likely to select themselves into competitive settings as teams, irrespective of the gender of the other team members. Men prefer to compete on their own.

Competition in teams, however, also has an effect on the gender gap in performance. If teams are formed by men and women, the team's performance is worse than that of single-sex teams. For example, Ivanova-Stenze and Kübler (2011) show that in competitions between teams, women in mixed teams perform worse than in single-sex teams. Using data from a field experiment, Hoogendoorn, Oosterbeek and van Praag (2013), in contrast, find that teams perform better when the gender mix is balanced than when there are more men than women. Similarly, Apesteguia, Azmat and Iriberry (2012) find that teams which consist of three women are outperformed by male or mixed teams.

Gender differences in competitiveness could determine differences in educational choices, which might determine later occupations. Buser, Niederle and Oosterbeek (2014) link the results from laboratory experiments with school children to their later choices of secondary education. Their findings suggest that gender differences in competitiveness, which were identified in the experiments, lead to different school choices. Boys, who were found to be more competitive than girls, choose more prestigious academic tracks which focus more on mathematics and science compared to girls.

Niederle and Vesterlund (2010) attribute gender differences in math test scores to gender differences in competitiveness. On average, math intensive majors are more frequently chosen by male students. Consequently, the higher share of male classmates might lead to overall worse performances of women in math tests. This can be interpreted as a crucial argument in favor of single-sex classes in math-related subjects. For example, Fryer and Levitt (2009) find a substantial gender gap in math tests scores over the first 6 years of schooling in the United States. This gender gap is, to a certain degree, also confirmed by international data. However,

it is not present in countries with gender-segregated teaching systems. In gender-segregated education systems, girls perform better than girls in coeducational systems, while, on average, boys perform worse.

Morin (2015) evaluates a Canadian reform of the educational system which exogenously changed the number of high school graduates who competed for university places. More competition improved later performance at the university, especially for below-average male students. However, educational outcomes might be influenced by the teacher's gender. Muralidharan and Sheth (2016) show that Indian school girls performed better when they were taught by female teachers. Lim and Meer (2017) provide similar evidence from Korean middle schools.

COMPETITIVENESS IN FIRMS

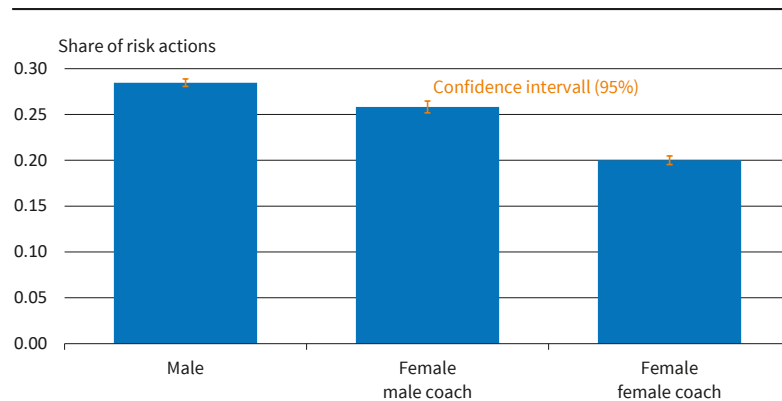
Gender differences in competitiveness could cause women to be less demanding in wage negotiations than men. Leibbrandt and List (2014) show that men negotiate their wages more often than women when it is not explicitly mentioned that wages are negotiable. This gender gap disappears when job announcements explicitly state that wages are negotiable. In addition, they find that men are more likely than women to respond to job announcements when wages are left ambiguous. Card, Cardoso and Kline (2016) provide evidence that women seemingly sort themselves into firms with low wage premiums and they receive on average only 90 percent of the premiums that men receive. They conclude that this gender difference is due to self-sorting and weaker bargaining of female workers. The authors conclude that this gap in competitiveness could explain 20 percent of the gender wage gap in Portugal.

The gender gap in competitiveness might have strong implications for managerial decision making. For example, Huang and Kisgen (2013) find that male executives undertake fewer acquisitions and issue debt more frequently than female executives. Similarly, Faccio, Marchica and Mura (2016) show that female managers take less risk than their male managers, and that female-led firms stay in operation longer. In contrast, Atkinson, Baird, and Frye (2003) find no significant differences in decision making for male and female mutual fund managers.

Female leadership might also affect firm performance in a competitive environment. Amore and Garofalo (2016) analyse the relationship between executive

Figure 2

Risky Strategies by Gender and Coach's Gender



Notes: Data are from NCAA basketball playoff tournaments, 2010–2014. N = 91,631 shooting attempts. Risky strategy is defined as a three-point attempt (as opposed to a two-point attempt). Penalty attempts are excluded.

Source: Böheim, Freudenthaler and Lackner (2017).

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gender and firm performance under competitive and non-competitive market conditions. Firms with a female executive turned out to perform significantly better financially in situations of low competition, but they underperform after a competitive shock. Potential negative consequences of female leadership on firm performance are in some aspects contested by Levi, Li, and Zhang (2014). According to their results, an increase in female leadership leads to fewer and lower bids in merger processes, which could increase shareholder value. As an indicator of risk-aversion, financial stability is greater when females are present in executive boards (Amore and Garofalo, 2016).

SPORTS DATA

The analysis of competitive behavior in observational data is difficult as there is no clear and intuitive measure of competitiveness. In addition, causal outcomes as well as characteristics of decision makers are often imperfectly observed. An alternative data source, which is receiving more and more attention among economists, is (professional) sport contests. Professional sports have strong incentive structures, clearly defined rules and typically provide detailed information about the background and abilities of contestants. Moreover, rewards are linked to clearly measurable performances. Sports data are analysed in a variety of applications, for example, to analyse performance under pressure, tournament dynamics, team performance, and related issues, such as discrimination by sex or race.

Wozniak (2012) analyses top-level professional tennis players and finds evidence for a systematic difference in the selection into tournaments. Men and women differ in their reaction to previous performances. Women tend to compete more when they did well in past tournaments, while male players reduce their level of competitiveness. Frick (2011a, b), who

analyses data from long-distance running contests, finds similar patterns. Using data from professional tennis as well, Jetter and Walker (2015) find a very small gender gap in performance.

Böheim and Lackner (2015) analyse data from top-level jumping competitions and find that men take significantly more risks than women. Male and female athletes benefit from risk-taking in terms of subsequent performance, but female athletes seem to choose a risky strategy only when the chances of success are high. This can be interpreted as evidence for a gender gap in competitiveness.

Similarly, Böheim, Freudenthaler and Lackner (2016) find a sizeable gender gap in risk-taking in top-level basketball games in the USA. They focus on crucial situations towards the end of games where a successful risky strategy could win a contest. In such situations, male players increase risk-taking, while female players reduce risk-taking. Böheim, Freudenthaler and Lackner (2017), analysing male and female basketball players in the US collegiate sports system (NCAA), find that the gender gap in risk-taking is due to female teams that are coached by female coaches. Female teams that are coached by male coaches are almost indistinguishable from male teams in terms of their risk-taking behavior. This can be interpreted as further evidence for a strong nurture component in the gender gap in competitiveness.

CONCLUSION

Economists provide evidence for a gender gap in competitiveness. This gender gap is evident for selection into competitive environments as well as the performance in competitive environments. Gender-specific attitudes to competitiveness and risk-taking could explain gender differences in labour market outcomes. They are also of central relevance for education policies such as single sex education, choice of college majors and performance gaps in tests.

Closing the gender gap in competitiveness could have a multitude of positive effects in many different areas. However, it is not clear if it is per se desirable to make women more competitive in order to close the gender gap in competitiveness. A recent study by Eckel and Füllbrunn (2015) demonstrates that experimental financial markets which are dominated by men produce significant price bubbles. This provides a strong argument against closing the gender gap in competitiveness by raising women's competitiveness to men's levels. Similarly, men are often overconfident and suffer from being overly competitive, which might affect overall performance negatively (Barber and Odean, 2001).

Most of the empirical evidence that supports the existence of a gender gap in competitiveness is from laboratory experiments. The evidence from field data is not as conclusive as the evidence from laboratory experiments because it is difficult to collect the neces-

sary data for the identification of causal effects. One potential source for valuable data on a multitude of different competitive settings is sports. Novel data, especially from professional sports competitions, could help to provide an understanding, for example, whether nature or nurture is the main influence shaping gender differences in competitiveness.

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Mario Macis and Mirco Tonin

Gender Differences in Earnings and Leadership: Recent Evidence on Causes and Consequences



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Women's labour market outcomes have improved substantially in the past decades, both in absolute terms and relative to men, in the United States and Western European countries as well as in several other countries around the world. Specifically, gender gaps have narrowed considerably (and in several cases disappeared) in human capital accumulation (educational attainment), labour force participation, hours of work and occupation. Claudia Goldin referred to this phenomenon as a "grand gender convergence" (Goldin 2014). Yet, gender gaps in earnings and leadership still persist. Women earn substantially less than men and are under-represented in leadership positions in firms and organisations more broadly. The presence and persistence of gender gaps in earnings and leadership is cause for great concern for both reasons of social justice and efficiency, to the extent that the gender imbalances reflect a sub-optimal allocation of human capital in firms and in the economy.

In this article, we focus on the causes and consequences of female-male gaps in earnings and representation at the top of organisations. Gender gaps in wages and leadership are one of the most researched topics in labour economics and beyond. Rather than attempting to summarise the vast literature on these subjects, we present a selective discussion of recent empirical work in an attempt to highlight recent findings on causes and consequences of gender gaps in the labour market and to discuss the main knowledge gaps and what we believe are some of the most promising areas for future research.¹ Most of the papers we focus on refer to the United States, but the trends and patterns described are likely to apply more broadly.

GENDER DIFFERENCES IN EARNINGS

Women systematically earn less than men in most countries around the world (Jayachandran 2015; Macis 2017). The "gender wage gap", however, varies both across countries and within countries along several dimensions, including across industries and occupations, and between socio-demographic groups. Studying these variations can shed light on the causes of gender differences. In a recent paper, Goldin et al. (2017) document that the gender earnings gap in the United

States increases with age, particularly for college graduates, for married women and for those with children. Specifically, the authors find that the gender earnings gap (controlling for education, weeks and hours worked) for college graduates born around 1970 increased from 10 log points to 31.4 log points from ages 25-29 to ages 40-44, and from 13.3 to 33.3 log points among those born around 1960. In an effort to investigate the reasons for this dramatic widening of the female earnings penalty, Goldin et al. linked data from the Longitudinal Employer Household Dynamics (LEHD) database to the 2000 Census. Thanks to this matched database, the authors were able to determine that 44 percent of the widening of the earnings gap for college graduates is due to men being more likely to shift to high-wage establishments than women, and 56 percent is due to women enjoying slower earnings growth than men within firms. The authors also find that the gender earnings gap widens more for women who were married than for women who were never married: the gap widens by 39 log points for the former group and by "just" 22 log points for the latter. These findings indicate that human capital does not automatically close the gender earnings gap; on the contrary, the gap is larger (and it widens more over time) for women with a college degree. Moreover, because the gap grows more for married women (and for those with children), this strongly suggests that these patterns are associated with social and cultural norms, plausibly those related to women's greater family responsibility.

THE ROLE OF GENDER IDENTITY NORMS

The fact that many gender disparities persist in spite of women having bridged gaps in education and labour force participation has prompted economists to consider the role of factors other than human capital and other "standard" determinants of labour market outcomes. One of these factors is "gender identity" and the associated norms (Akerlof and Kranton 2000, 2010). Bertrand, Kamenica and Pan (2016) uncovered compelling evidence that gender identity norms influence gender disparities in labour market outcomes. They begin by documenting that among married couples in the United States there is a sharp drop in the distribution of the share of household income earned by the wife at 50%, that is, the point where the wife starts earning more money than the husband. The authors argue that standard human capital forces cannot explain this pattern. Instead, the finding is consistent with the view that a husband should earn more than a wife, a social norm that, they report, is shared by 38% of Americans, according to data from the World Values Survey. The authors further show that, within marriage markets, marriage rates decline when the probability that a randomly chosen woman would earn more than a randomly chosen man increases. Moreover, in couples in which the woman's potential (predicted) earnings are likely to exceed the man's, the woman is less likely to

¹ For more comprehensive, recent reviews, see Blau and Kahn (2016) and Miller (forthcoming).

participate in the labour force, and when she does, she earns less money than what she could earn based on her potential. Finally, Bertrand et al. document that in couples where the wife earns more than the husband, the wife spends more time on house-related chores, marital satisfaction is lower and divorce rates are higher.

Recent field-experimental work by Bursztyn, Fujiwara and Pallais (2017) also supports the idea that women pay substantial costs in the labour market due to gender norms. The authors conducted a set of field experiments among MBA students in an elite business school, finding that single women reported a lower desired yearly compensation, being willing to work fewer hours and being less willing to travel for work when they expected that their male classmates would see their answers. No differences were detected, instead, when students believed that their answers would be seen only by the career office but not by their classmates. Also, there were no effects of observability on men or on non-single women. The authors interpret these results as indicating that single women “avoid career-enhancing actions because these actions could signal personality traits, like ambition, that are undesirable in the marriage market”. They also describe results from a survey showing that nearly three quarters of single female students reported having avoided activities that would have helped them in the labour market (for example asking for a raise or a promotion, or speaking up in meetings) because they wanted to avoid appearing too ambitious.

The results by Bertrand et al. and Bursztyn et al. indicate that adherence to traditional gender-specific roles has direct and important consequences on labour market outcomes, and specifically on relative outcomes of women and men. These results are consistent with Akerlof and Kranton’s (2010) notion that individuals have a strong sense of belonging to a social group or category, and behave in ways that are consistent with how society prescribes that members of those groups should behave, even when doing so is costly. Social norms can thus help to explain gender gaps in earnings as well as the under-representation of women in leadership positions. We turn to gender leadership gaps next.

GENDER DIFFERENCES IN LEADERSHIP

Top positions, by definition, directly involve only a small portion of the population, so they could be considered to be of marginal interest for the issue of gender equality as experienced by most men and women. There are many reasons, however, to consider them with special attention. First of all, leadership positions have high visibility and symbolic relevance, so they may be affecting social norms about gender roles. Having a woman, for instance, as head of state may send a strong signal across the whole society that women can indeed be at the helm, also in different contexts. Second, peo-

ple in leadership positions exert a strong influence on how organisations perform. This may matter if men and women have different preferences, for instance regarding the type of public goods that should be provided by a public authority, and are able to affect outcomes once at the top. Moreover, if career patterns within organisations depend on professional networks or on subjective evaluations and these, in turn, have a gender component, then the presence of a woman at the top may have positive spillovers for other women along the whole hierarchical structure, thus affecting equality beyond the top levels. This would be the case, for instance, if performance by a woman is more likely to be evaluated positively by a female rather than a male supervisor or if women are more likely to have other women in their professional network.

Access to leadership positions is more difficult for women in both political and economic life. There is a vast literature showing the presence of gender differences in corporate hierarchies, as well as in access to political office. Miller (forthcoming) provides a useful overview, while Kauhanen (2017) discusses causes and possible remedies of different career paths for men and women in firms. There is also evidence regarding other important realms like sports, the arts or public service. For instance, regarding sport, Sandberg (forthcoming) finds evidence of bias based on nationality, but not on gender, among judges in international competitions of dressage, an equestrian sport where men and women compete together. In contrast, Goldin and Rouse (2000) find that the adoption of “blind” auditions by American symphony orchestras, where the candidate’s identity is concealed from the jury, helps female contestants to be hired, thus indicating the presence of gender bias. Regarding public service, a study by Bagues and Esteve-Volart (2010) on examinations to enter the Spanish judiciary as notary, judge, prosecutor, and court secretary finds that female candidates are actually damaged by the (randomly determined) presence of female evaluators in the committee.

In what follows, we focus on recent evidence regarding access to leadership positions in scientific research. Research and innovation activities are an essential element of competitive advantage and long-term growth. Thus, a biased research system that fails to take advantage in the best possible way of the talent of half of the population, beside its unfairness, may be particularly harmful for overall well-being.

LEADERSHIP GAPS IN SCIENTIFIC RESEARCH

Despite an improving trend, scientific research is still characterised by wide gender gaps, in particular in positions of leadership. According to figures by the European Commission (2016), in the period 2013-2014, women made up 21% of the top-level researchers, 20% of heads of higher education institutions, 28% of scientific and administrative board members, and 22% of board leaders. There are multiple and complex reasons

behind these gaps, systematically reviewed, for instance in Ceci et al. (2014) and, for the case of economics, in Bayer and Rouse (2016).

Given the fact that academic researchers usually split their time between research, teaching and administration, one mechanism behind the underrepresentation of female researchers in top positions points to the differential allocation of tasks between genders, with women performing tasks that are essential for the well-functioning of an institution, but with “low promotability”, for instance by serving on committees. Guarino and Borden (2017) indeed show, in the context of US universities, how female faculty members perform more service than men, mostly internal service, that is, to their own institution. Similarly, Babcock, Recalde, Vesterlund and Weingart (2017) conduct a series of experiments to show how women are more likely to volunteer, to be asked to volunteer, and to accept requests to volunteer for tasks that need to be completed, but that individuals would prefer others to do. The main issue from the point of view of access to leadership positions is that performing such tasks is not very helpful for obtaining a promotion. This lack of recognition of the contribution by female academics applies also when looking within a specific category of tasks, namely research. In a working paper, Sarsons (2017) shows how the probability of receiving tenure declines with more co-authored rather than solo-authored papers for females but not for males in the field of economics, where, due to the convention of listing co-authors in alphabetical order, there is uncertainty regarding the contribution of individual co-authors. The gender gap is smaller for women who co-author with women or in sociology, where it is easier to discern the individual contribution. This is an indication that, when the contribution is unclear, women tend to receive less recognition for their research work than men.

How to address these imbalances is not obvious. Having more women in evaluation committees, for instance, may not work if women share the same prejudices as their male colleagues. On this point, Bagues, Sylos-Labini and Zinovyeva (2017) examine the national evaluation systems for academics in Italy and Spain, where candidates are evaluated by an academic board to establish whether they qualify as associate or full professors. The study has access to 100,000 applications assessed by 8,000 evaluators and exploits the fact that committee members are randomly selected from a list of eligible evaluators. They find no empirical support for the idea that the presence of women in evaluation committees is instrumental in reducing the gender gap. Looking at Italy, where individual assessments by committee members are available, they find that male evaluators are tougher vis-à-vis female candidates in mixed-gender committees, thus making the gap actually larger in committees with a female member compared to all-male committees. Breda and Ly (2015) examine the entrance exam to the highly selective

École Normale Supérieure in France and find, instead, evidence of bias in favour of females in male-dominated subjects, like math and philosophy, and in favour of males in female-dominated ones, like literature and biology.

Another example, studied by Antecol, Bedard and Stearns (2016), are tenure clock stopping policies, that is, policies that extend the probationary period, usually lasting seven years, of assistant professors for family reasons. The study looks at top economics departments in the US and at gender neutral policies, so that also men take advantage of them. What they show is that the introduction of these policies actually increases the gender gap in the probability of getting tenure in their first job, benefitting men and damaging women.

KNOWLEDGE GAPS AND DIRECTIONS FOR FUTURE RESEARCH

The findings from recent empirical work strongly suggest that understanding the root causes of the observed, persistent gender gaps in earnings and leadership positions requires looking beyond standard human capital factors.

Results from Bertrand et al. (2016) and Bursztyn et al. (2017), among others, indicate that social norms related to gender identity exert a powerful influence on behaviour by males and females, potentially explaining the presence and persistence of gender differences in labour market outcomes. However, much work remains to be done. First of all, most of the empirical evidence currently available is from the United States. Although many of the mechanisms are likely to apply more broadly, social norms do vary across countries and cultures, and thus more work is needed from other contexts. Most important, although it seems clear that gender identity and norms play a role, we still have a limited understanding of how these norms form and evolve, and of the relative role of culture and market forces in shaping those norms and their evolution over time.

A clear message from the examples presented above and, more generally from the literature, is that the presence and extent of gender bias in access to leadership positions varies across contexts and that seemingly beneficial policies aimed at addressing it, like an increased presence of female members in evaluation committees or gender-neutral parental leave policies, may actually backfire. For these reasons, rigorous studies and evaluations represent an essential tool for policy makers.

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Nigar Hashimzade and Natalia Vershinina Symptoms and Causes: Gender Effects and Institutional Failures

INTRODUCTION



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The existence and causes of gender gaps in pay and in occupational choice have been increasingly at the centre of research in economics, sociology, psychology, managerial science, and other fields. The research findings across countries and over time generally suggest that gaps exist and are significant, indicating that gender inequality remains persistent in many areas, even in the developed Western democracies. Forcefully closing the gaps directly, however, may not be sufficient in the long run. Trying to fix the symptoms without addressing the causes is likely to create other distortions and lead to further welfare losses over time.

One hotly debated issue is that of the gender effect on business performance. Women are in a striking minority when it comes to managerial roles and entrepreneurship. According to Terjesen, Aguilera and Lorenz (2015), in 2013 the average proportion of women on the corporate board of directors across 67 countries was only 10.3 per cent, although empirical evidence suggests that higher presence of women on corporate boards is often positively correlated with various measurements of high performance. For example, according to the Fawcett Society (2013), “companies with more women on their boards were found to outperform their rivals with a 42 per cent higher return in sales, 66 per cent higher return on invested capital and 53 per cent higher return on equity”. Do women make better leaders, better managers, better “bosses”, and, if yes, why don’t we see more women than men in these roles?

A broad answer to this question is institutional failure, including both formal and informal institutions. Many countries have outlawed gender discrimination and have legislated measures towards eliminating gender gaps. However, even in these countries societal norms and perceptions often lag behind. Failure to realize gains from equal opportunities ultimately leads to a misallocation of human and physical resources and thus to social welfare loss.

The answer to the question whether women make better leaders is trickier. A study by Martinsen and Glasø (2013) has concluded that female managers outperform their male counterparts in four out of five categories of leadership characteristics. Among about 3,000 managers, women were better at initiative and clear communication, openness and ability to innovate, sociability and supportiveness, and methodical

management and goal-setting, while men were better at dealing with work-related stress and in maintaining higher levels of emotional stability.

In this regard, the question Gazanchyan, Hashimzade, Rodionova, and Vershinina (2017) attempted to answer is slightly different. If there is a positive effect of female leadership on business performance, could it be because women face higher hurdles than men, and those who succeeded in making it to the top are better than men in similar roles?

The approach to this question was to construct a theoretical model linking occupational choice in the presence of gender bias to business performance and to subject the assumptions and predictions of the model to an empirical test. While the firm-level data set used in this study contained important details of firm characteristics contributing to business performance as well as the information on the gender of the firm owner and senior manager, it provided no information on the personality and characteristics of the owners and managers. Thus, the aim of the research was to compare the performance of firms owned and/or managed by women and those owned and/or managed by men, with all other observable characteristics being similar, or matched: if there is a gap, it can then be attributed to the gender effect. A potential hurdle explored in this work was access to finance in the credit markets for reasons discussed below.

GENDER, CULTURE AND INSTITUTIONS

The cultural and legislative context, both of which depend on the geographical location and political environment, are important determinants of the extent and perception of gender discrimination (Shaffer et al. 2000, Aidis et al. 2007). The data used by Gazanchyan et al. (2017) was from the fourth round (2008-09) of the Business Environment and Enterprise Performance Survey (BEEPS), a firm-level data set for countries in Eastern Europe and Central Asia. This choice was driven by the differences in institutions and regulations between the developed countries, where much of the previous research of similar issues had been conducted, and the developing countries of the former Soviet bloc.

Firstly, in these countries the market economy and private entrepreneurship were relatively recent phenomena, and in the absence of accumulated internal resources, external financing was, by and large, a necessary pre-condition for starting business. Secondly, these countries had a different history of gender attitudes and different patterns in gender discrimination from those experienced by the developed Western countries. The differences are even more striking in the attitudes to entrepreneurship and to the place of women in business (Smallbone and Welter 2001a,b, Estrin and Mickiewicz 2011). Thus, the effect of discrimination in the capital markets on occupational choice and business performance was expected to be espe-

cially pronounced in the transition economies, characterised by weaker entrepreneurial culture, weaker democratic institutions, and weaker anti-discrimination regulations.

GENDER AND ACCESS TO FINANCE IN THE TRANSITION ECONOMIES

There are a number of empirical studies on the extent to which women-owned businesses face discrimination in the credit markets. The findings are rather mixed for the developed countries (see, for example, Verheul and Thurik 2001, Fairley and Robb 2009, and Wu and Chua 2012). Similarly, mixed findings were reported in the research of post-Soviet era entrepreneurship in Russia and other countries of the former Soviet Union. A study by Babaeva and Chirikova (1996) shows that at the very beginning of perestroika in the early 1990s, the distribution of the responses of the directors of non-state enterprises on the question about the means for financing of a start-up in Russia did not demonstrate any strong evidence of discrimination against women. However, the authors claim that the results of the survey might have been biased due to the fact that it was commissioned by the John D. and Catherine T. MacArthur Foundation, and the respondents might have wanted to show an image of correctness, for which the study has been criticised. Arguably, the situation has worsened in recent years, as society in Russia underwent a reversal to “traditional”, more patriarchal values, which has also affected the business sphere.

In the Ukraine, businesses run by men are often required to pay upfront, compared to businesses run by women (41 against 33 per cent), suggesting that female entrepreneurs are trusted more and thus might enjoy more favourable conditions for obtaining credits. At the same time, between a third and a half of female entrepreneurs admitted that they have not applied for credit because of the high interest rates, and almost one out of six female entrepreneurs admitted that present requirements for collateral were overly tight (Lavrienko and Rudik, 2010).

Another study of the business environment in the Ukraine (Isakova et al., 2004) found that female entrepreneurs face a more acute problem of start-up capital: 51 per cent of women admitted that this was the major problem at the beginning, vis-à-vis 37 per cent of men. The problem with finances has persisted in recent years, and although it has moved in the rankings to third place, after taxes and regulations, it remains more acute for women than for men (23 against 8 per cent). It has been revealed that women are more wary of risks when borrowing externally: 38 per cent of women do not apply for credit for this only reason, against 20 per cent of men.

The Centre for Study of Public Opinion (2003) survey presented responses obtained from 684 female entrepreneurs in Uzbekistan. According to the survey, 58.5 per cent of the respondents believed that women

did not have the same opportunities as men for entrepreneurial activity, 40.8 per cent disagreed and 0.7 per cent were undecided. The main obstacle to women in business in Uzbekistan was the gender stereotypes about the roles of women and men that persist in the society (Rahimova, 2006). A more recent study also showed that in Uzbekistan female entrepreneurs find it difficult to obtain credit because of the high interest rates and lack of required collateral to de-risk the investment (Sugarova, 2012). Moreover, in a comprehensive study using the 2002-05 waves of BEEPS, Muravyev et al. (2009) found empirical evidence of gender discrimination in the capital market in a wider set of post-Soviet countries, including Eastern Europe.

GENDER AND BUSINESS PERFORMANCE

Empirical evidence of the effect of an owner’s gender upon business performance is also mixed. Some studies have shown that female ownership has a significantly negative impact on sales (Sabarwal and Terrell, 2008) and on profits (Robb and Wolken, 2002; Bosma et al., 2004). Other authors find no effect of the owner’s gender on the firm’s performance (Watson, 2002; Johnsen and McMahon, 2005; Kepler and Shane, 2007). Furthermore, Coleman (2007) finds that women-owned firms have significantly higher annual sales growth than firms owned by men, after controlling for industry and firm size. In a survey of 201 business owners, Powell and Eddleston (2008) found that firms owned by women performed better than firms owned by men (relative to competitors and as measured by sales). In a longitudinal study of over 4,000 new ventures started in the US from 2004, Robb and Watson (2012) show that there is no difference in performance between men-owned and women-owned firms, when using appropriate measures of performance (the authors used return-on-asset and the Sharpe ratio, among others) and controlling for demographic differences.

THEORETICAL MODEL OF DISCRIMINATION AND OCCUPATIONAL CHOICE

Gazanchyan et al. (2017) present a model economy populated by men and women who can choose occupations from among three options: a low-skill paid job (worker), a high-skill paid job (manager), and entrepreneurship (business owner). To start a business an individual must borrow from a credit market (for simplicity, internal resources are assumed not to exist), and the outcome of an investment project is uncertain. The probability of success, and thus, the probability that a loan will be repaid, is proportional to “entrepreneurial skill”, known to an individual himself or herself but unobserved by a creditor. All individuals have different skills, and the distribution of skill is the same among men and women.

Now, let us assume that creditors are biased against female borrowers – potential entrepreneurs. In

other words, creditors believe that men are more likely to be successful, and, to compensate for perceived higher default rate by women, creditors charge them a higher interest rate. (Indeed, we find empirical evidence in support of this assumption.)

When choosing an occupation, each individual compares expected earnings from the three options. Skill and the cost of borrowing determine the choice: only individuals with skill (or probability of entrepreneurial success) above the threshold will choose to borrow and invest. Individuals without entrepreneurial skill (zero probability of success) become workers, and those with some entrepreneurial skill below the threshold become managers. Because women are faced with a higher cost of borrowing than men, the threshold for women is higher.

As a result of this self-selection, the distribution of skill among female and male business owners is different: on average, female owners have higher entrepreneurial skills than men. Moreover, the distribution of skills among female and male managers also has this feature: on average, female managers are more highly skilled than male managers.

Thus, discrimination in the capital market results in the distortion of occupational choice in the labour market. Furthermore, if entrepreneurial skill contributes to company performance, the model predicts that, other things being equal, firms owned or managed by women should perform better than firms owned or managed by men. This is exactly what Gazanchyan et al. (2017) find in the empirical part of their work.

EMPIRICAL EVIDENCE ON GENDER BIAS

The BEEPS wave of 2008-09 covers about 12 thousand enterprises in 29 countries in Eastern Europe and Central Asia: Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Georgia, Hungary, Kazakhstan, Kosovo, Kyrgyz Republic, Latvia, Lithuania, FYR of Macedonia, Moldova, Mongolia, Montenegro, Poland, Romania, Russia, Serbia, Slovak Republic, Slovenia, Tajikistan, Turkey, Ukraine and Uzbekistan. After dropping Turkey, the only non-post-Soviet country in the data set, from the sample (it is reasonable to assume that the socio-economic, business, and cultural environment in Turkey in that period differed significantly from that in the countries in the post-Soviet space), it is reduced to about 7,700 enterprises. The survey includes questions on the business environment, such as the access to finance, performance measures, infrastructure, competition, corruption, and it also contains information on firm-specific characteristics such as sales, material and labour costs, fixed assets, the gender of the firm's owner (the largest owner for jointly owned firms) and of the senior manager, and the tenure (in years) of the senior manager in his or her sector.

On the question about the reason for not applying for a loan, more women than men chose "Interest rate

is too high" and "Collateral is too high". Another question was about the access to finance as an obstacle to business, where the available choices were "Not an obstacle", "Moderate", "Major" and "Very severe obstacle". Female owners were more likely to view access to finance as an obstacle to doing business. For both questions the difference between men and women, however, was small albeit statistically significant. Female business owners had to put up, on average, a 4.6 percent larger collateral to obtain a loan, compared to male owners.

Sales were used as a measure of business performance, as is common in the literature. Without controlling for the access to external finance and for the firm-specific factors, on average, firms owned or managed by females have lower sales in the sample. However, when the gender effect of the owner was separated from that of the senior manager, a positive and strongly significant premium of female owners among the firms with male senior managers, and of female senior managers among the firms with male owners, without and with additional control variables, was found, ranging from 9.5 per cent to 57 per cent. Interestingly, the "joint" premium (both the owner and the senior manager are women) was weak, which can be interpreted either as some sort of "decreasing returns" to skill or as the positive effect of complementarity between female and male styles of leadership in running a business.

It is also interesting to look at the potential effect of the self-selection of workers in certain industries. In the industries with preferred female leadership, such as food, garments, hospitality, and other services, one would expect to see a lesser effect of skill difference because of the additional factor of selection, or self-selection, into the job. That is, to become a manager in a non-female dominated industry, a woman must demonstrate an even higher skill level than female managers in female-dominated industries. Indeed, the estimated effects are about 18 per cent, and are statistically significant.

Similar results were established using the propensity score matching technique: firms owned by men with either male or female senior managers were matched on all other characteristics contributing to business performance. The estimated effect of a female senior manager was as high as a 38 per cent premium in sales. A similar exercise for the firms owned by women did not show a significant gender effect of senior manager on sales, again suggesting decreasing returns to skill or the effect of complementarities in female and male leadership styles.

CONCLUSIONS

Gender gaps in the modern world are multifaceted and persistent. Curing the symptoms, or the measured indicator, does not necessarily address the causes of the problem. Many countries are moving towards a stricter legislated and monitored equalisation of pay, representation in leadership roles, and work-family balance for men and women. The speed of this process differs across countries, and there is still room for improvement of formal institutions in many places in the developed and developing world. However, the informal institutions are no less, and often even more important: biased perceptions of and unfavourable societal attitudes to the gender roles have real economic effects by distorting economic choices. The mechanisms by which failures of informal institutions work are not always obvious, and each manifestation of a gender gap requires careful investigation of its roots to ensure that it is eliminated successfully by dealing with causes and not the symptoms.

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Paola Profeta Gender Quotas and Efficiency

WOMEN ARE UNDER-REPRESENTED IN DECISION-MAKING POSITIONS



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Women are under-represented in the labour market and in decision-making positions. In spite of the continuous evolution towards their closure, economic gender gaps appear to be persistent and difficult to eliminate. According to the World Economic Forum (2016), only 59% of the gender gap in economic opportunities around the world has closed.

Reducing the gender gaps is a major goal everywhere. Not only equality between men and women is in itself important for sustainable development, but women's economic participation is also "a part of the growth and stability equation" (IMF, 2014). Having more women in the labour market and in decision-making positions represents a good strategy to exploit talents with the final goal of promoting economic growth and business performance. In fact, women represent half of the population: women's educational level is now comparable (or even higher) to that of men in all developed countries and their productivity and talent is well-recognised. Yet, they rarely reach the top level of their professional careers, i.e. the *glass ceiling* is still a dominant phenomenon worldwide.

Why are women under-represented in decision-making positions? A large literature has tried to investigate what the obstacles for women in the labour market are, and what prevents them from reaching top positions in their career. Family, cultural and institutional factors play a relevant role, as they shape the context in which women decide their role in society. At the root of gender gaps is the traditional division of labour within the family, with men working on the market and women primarily being devoted to domestic work and child care. Even when women work on the market, they still have the majority of the responsibility for care work. This limits their possibility to invest in labour market skills and to be recognised as being engaged in their career. Gender gaps are not only the outcomes of environmental influence (*nurture*), but they also depend on *nature*, i.e. they may have biological roots. A growing literature in fact has recognised that risk aversion, attitudes towards competition, and social-oriented preferences are fundamental intrinsic traits which differentiate men from women (see Bertrand, 2011 for a review) and may be associated with gender gaps.

DISCRIMINATION

What cannot be explained by observable factors is considered discrimination. Discrimination occurs when some workers are treated differently than others because of their personal characteristics, such as gender, race, age, nationality, sexual orientation and so on, that are unrelated to their productivity (Arrow, 1973). Discrimination not only leads to unequal outcomes but it may also create efficiency losses: waste of talent, lack of incentives to invest in human capital by the discriminated group and inefficient allocation of resources.

We can identify three types of discrimination against women: taste, statistical and screening.

Taste discrimination occurs when employers discriminate against women based on prejudices against women. However, this type of discrimination can persist only in the absence of competition in the labour market because it is costly to be maintained.

Statistical discrimination occurs when people do not have full information about an individual's relevant work characteristics and use group averages as a substitute. Two people may be identical in any economic aspect that is relevant for performance, but, since this is unknown to employers, some characteristic, such as race or sex, will be used as a basis for decisions on hiring and promotion. To make an example, firms expect women to quit earlier, to put less effort into the job, and to dedicate more time to domestic and care work. These expectations are based on evidence, and thus are plausible. As a consequence, firms rationally pay women less than men and/or do not promote them. Within couples, the lower wage reduces the opportunity cost for women to work at home, and thus the initial expectations self-fulfil.

Even in the absence of a clear preference for people of the same sex, a screening discrimination may occur during the selection process, as it is in general easier for individuals to screen people of similar background. It is easier to judge job applicants' unknown qualities when candidates belong to the same group. This different evaluation may be justified by differences in language, communication styles, and perceptions, which make it easier for a person of the same group (f.i. gender) to evaluate personal skills and attitudes.

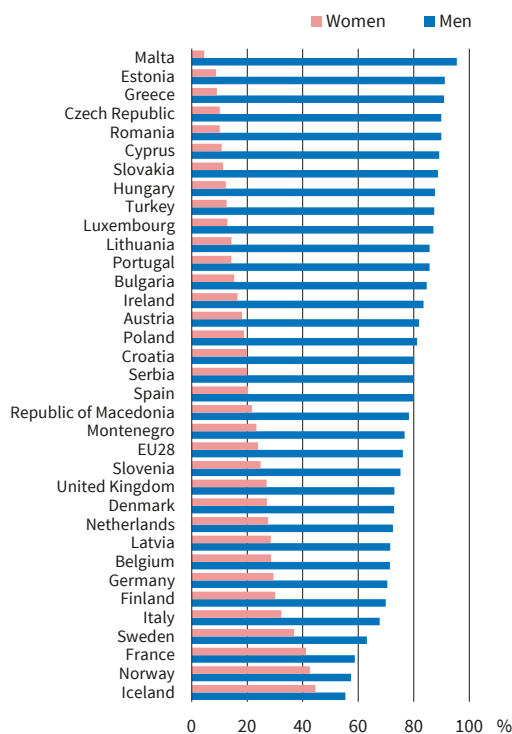
THE ROLE OF POLICIES AND GENDER QUOTAS

How to address discrimination and promote gender equality? Public policies are advocated to accelerate the process towards gender equality (OECD, 2012; Olivetti and Petrongolo, 2017). They include childcare, maternity, paternity and parental leaves, fiscal policies, labour market interventions (such as part-time), pension designs and flexible work arrangements.

When we concentrate on measures to promote the presence of women in top positions, a natural candidate is the introduction of gender quotas, which impose a threshold level of representation for each gender.

Figure 1

Percentage of Men and Women on Boards of the Largest Listed Companies in the EU-28, 2016



Source: Author's elaboration on European Institute for Gender Equality (EIGE) Gender Statistics Database.

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Figure 1 shows the share of men and women on boards of the largest listed companies in 2016 EU28 countries. No country has reached parity (50% of men and 50% of women), but generally countries which have introduced quotas have a larger share of women on boards of the largest listed companies. Italy is a clear example: a country traditionally characterized by a very low presence of women, is now among those with the highest presence of women, thanks to the introduction of gender quotas.

However, gender quotas are a controversial measure. Empirical research (see, among others, Bertrand et al., 2014, Bagues et al., 2017) has reached no conclusive results on the effectiveness of gender quotas in reducing gender gaps in specific contexts (business, politics, academia) nor on the efficiency gains vis-à-vis the costs they may generate. The effectiveness of quotas in achieving equality depends on the extent to which quotas in decision-making positions translate into more balanced outcomes and smaller overall gaps, for example, if increasing women's representation in decision-making positions reduces overall gender gaps. This result seems difficult to prove empirically. As for efficiency, theoretically, quotas have an ambiguous effect. On one side, by reducing the inefficiency losses associated to discrimination, quotas may increase productivity and total welfare. On the other side, by restricting the set of candidates and imposing con-

straints to the selection process, they may generate economic costs. Which outcome will prevail has to be tested empirically.

The effects of the introduction of gender quotas can be assessed according to the following critical dimensions: (i) the quality of representatives, (ii) performance, (iii) the agenda. I will now explain these concepts and present examples both in the context of politics and business.

The three dimensions above refer to the most typical concerns about the introduction of gender quotas. First, quotas seem to be at odds with meritocracy: individuals are assigned to a top position not because of their merit, but because they belong to a protected group. They may thus be very useful to rapidly increase the presence of women, but at the cost of reducing the quality of representatives if these women turn out not to be the best choice for the organisation. This is certainly true if at the initial status the competition is free and open to all individuals, and merit is the basis of decisions. However, as we argued before, often the real world is quite different from this "ideal world" because of discrimination: competition is not open, and the selection process is not rewarding the most talented individuals. Are we sure that, under these circumstances, quotas are against meritocracy? What alternative measures could be used to reach the same result?

Second, quotas may reduce performance if the selected women are not competent enough to play a positive role in their position. However, if diversity matters for performance, having both men and women in decision-making positions would translate into a positive outcome.

Finally, quotas make no difference because in the end men and women make the same decisions. In particular, women who reach top positions are highly selected and they are far from having the "average" female characteristics, while they are more similar to men and will behave similarly. If this is true, we should expect that men and women do not have a different agenda.

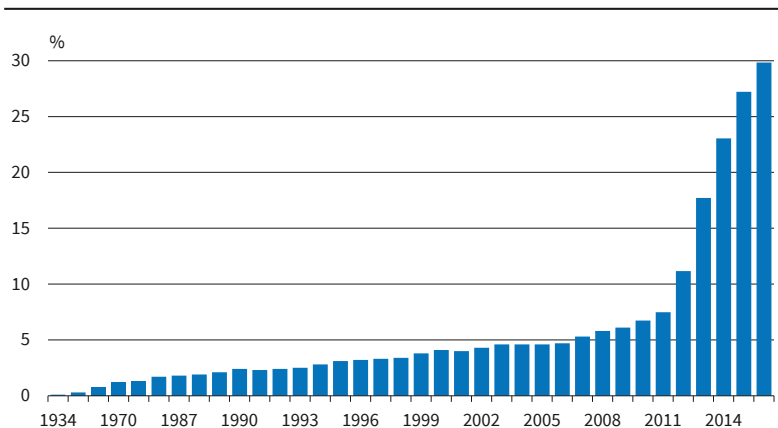
In the following, I will provide evidence that quotas introduced to reduce discrimination may generate efficiency gains, which include a better quality of the institution and the organisation, a positive effect on economic outcomes and performance and a new agenda.

THE QUALITY OF REPRESENTATIVES

A major concern when promoting gender balance in decision-making is that there are not enough women qualified to cover top positions. Thus, having more women in decision-making roles may translate into a lower quality of representatives. In particular, the introduction of mandatory gender quotas which forces a gender-balanced composition risks promoting less qualified women who very likely will perform worse than men.

Figure 2

Percentage of Women on Boards of Listed Companies in Italy, 1934–2016



Source: 1934–1998: Gamba and Goldstein (2009); 1998–2009: Author's elaboration on Consob. © ifo Institute

However, two alternative mechanisms may arise, which may produce a different result: positive selection and positive incentives.

Positive selection means that, as women are typically highly qualified, if they are under-represented because of discrimination, when affirmative action measures force the inclusion of women in certain contexts, the most competent women are appointed at the expense of the less qualified men. Thus, the overall quality may increase. In fact, by reducing the inefficiency losses associated with discrimination, these measures may generate efficiency gains. Even men will be better selected if the pool of candidates enlarges and the competition becomes tougher.

Positive incentives arise if a more balanced leadership induces more women to compete. In an enlarged pool of talents, one is more likely to select appropriate candidates. Thus, a virtuous positive cycle of quality may begin.

In a recent theoretical paper with Conde-Ruiz and Ganuza (2017), we show that quotas may increase the incentives to invest in human capital by the discriminated group (women). This is because the accuracy of individual productivity signals depends on the representation of each group in the evaluation committee: the larger the proportion of one group in the evaluation committee is, the more precise the estimation of productivity of this group is, and then the higher the return of the human capital investment is. Workers who are perceived as being highly productive today are more likely to be involved in future evaluation processes. Thus, if for some exogenous reason one group is initially poorly evaluated, this translates into lower investment in human capital of individuals of such a group, which leads to lower representation in the evaluation committee in the future, generating a persistent discrimination process. This discrimination trap is inefficient because of the lack of investment in human capital by the talented workers (with relative low investment cost) of the discriminated group. Quotas may be effec-

tive to deal with this discrimination trap and restore an efficient equilibrium.

On the empirical side, the relationship between gender equality and the quality of representatives is not easy to establish, because it suffers from the typical endogeneity concern: does the presence of women increase quality? Or does the quality of institutions promote the presence of women? The introduction of gender quotas, both in politics and in business – an exogenous increase of women's empowerment – allows the testing of the causal impact of wom-

en's empowerment on quality. Again, these empirical studies challenge the "common wisdom" according to which measures forcing an increase in women's empowerment have negative consequences on quality.

In the context of politics, in a paper with Baltrunaitė, Bello and Casarico (2014), we analyse the temporary adoption of gender quotas in municipal elections in Italy in 1993-1995. The quota requires that neither sex could represent more than 2/3 of the total candidate list. A quasi-experimental set-up emerges, as some municipalities voted in the period in which the quota was in force (treatment group) and some others (control group) did not. Using a difference-in-differences estimate, the paper shows that gender quotas have positive effects on the quality of the elected politicians, measured by years of schooling. Interestingly, the effect comes from having more educated men. In other words, men are better selected in presence of gender quotas. Similarly, Besley et al. (2017) show that the introduction of gender quotas in Swedish local elections produces "the crisis of the mediocre man".

In the context of business, in a paper with Ferrari, Ferraro and Pronzato (2017), we show that the introduction of mandatory gender quotas on boards of directors of listed companies in Italy is associated with a higher quality of board members. Board gender quotas were introduced in Italy in July 2011 and implemented from August 2012, with a first required threshold of 20%. The measure is temporary, and it will expire after three board elections. Sanctions are substantial and culminate in the final dissolution of the board. The paper collects 4627 CVs of board members (men and women) elected in the years 2007-2014 to obtain information on age, gender, state of birth and residence, type of board, position within the board (president, vice-president, CEO, administrator/advisor, auditor), education (university and graduate level), university, field of education, and kinship with other members of the board.

Each firm elects a new board every 3 years. In 2013, firms were randomly allocated into three groups: those

with a board elected under the quota law (i.e. in 2013), those with a board elected before the approval of the law (i.e. in 2011) and those with a board elected in the phase-in period, i.e. when the law was approved but not yet implemented (i.e. in 2012). Table 1 shows differences in average board characteristics among the three groups: quotas increase the share of women, even more than the required 20% threshold. Quotas are associated with more graduate board members, in particular among men. The share of elderly members decreases in boards elected after the quota. These results are particularly meaningful in the Italian context, where female appointments before the quotas were mainly driven by family representation on the board rather than by meritocratic considerations.

These results are confirmed if we follow two cohorts of firms – the first one with board elections in 2007, 2010 and 2013 and the second one in 2008, 2011 and 2014 – and compare outcomes for each firm before and after the introduction of board gender quotas (see Ferrari et al., 2016)

THE PERFORMANCE

A second major outcome of the introduction of gender quotas is the performance of the organisation. Are gender quotas good or bad for performance?

The existing literature provides mixed results. In Norway, Ahern and Dittmar (2012) show that gender quotas are associated with a reduction of firm values, mainly because changes are costly and less experienced people entered the board. However, Eckbo et al. (2017) show different results: the quota does not represent a costly constraint. The Italian case provides different evidence: using an instrumental variable identification strategy, where the introduction of board gender quotas is an instrumental variable for the share of women on boards, Ferrari et al. (2016) shows that gender quotas are not associated with a different performance, measured by the number of employees, profits, ROA, Tobin's Q, and assets. This is probably

Table 1

Board Gender Quotas in Italy. Board Characteristics in 2013

Board Characteristics in 2013		Pre-Reform (Elections in 2011) (1)	Phase-In (Election in 2012) (2)	Post-Reform (Election in 2013) (3)
share of women		10.5	14.6 ***	28.6 ***
more than 20% of women		3.3	4	17.1 ***
% female president		4.9	6	7
% female CEO		1.7	9.1	3.6
% university degree	All	82.8	84	85.7
	Women	77.4	84.6	85.6
	Men	83.2	83.3	85.5
% graduate degree	All	3.9	4.7	7.4 ***
	Women	9.5	6.8	9.6
	Men	3.5	4.6	6.9 ***
% study abroad	All	2.6	3.4	2.4
	Women	3.8	5.4	4.4
	Men	2.6	3.1	1.7
% degree in economics	All	57.7	58.8	56
	Women	42.1	51	54
	Men	58.7	58.7	55.9
% degree in law	All	9.8	9.7	11.2
	Women	9.7	13.2	13
	Men	9.7	9.2	11
field diversity	All	0.7	0.6	0.6*
% older than 60	All	39.8	36.3	35.6
	Women	18.4	17	12.3
	Men	42	38.8	45.6
% older than 70	All	21.4	15.6**	12 ***
	Women	5.9	3.1	4.3
	Men	23	17.2**	15.2 ***
% family ties within the board	All	4.5	7.5**	6.1
	Women	12.7	14.1	5.2*
	Men	4.2	6.9 **	6.5
average number of positions	All	1.3	1.3	1.3
	Women	0.8	0.8	0.8
	Men	0.8	0.8	0.8

Note: T-test of the differences between the average members' characteristics in 2013 with respect to the pre-reform status quo. *p<0.10, **p<0.05, ***p<0.01

Source: Ferrari, G., Ferraro, V., Pronzato C. and Profeta, P. (2016).

because the period of observation is too short. When in fact short-term outcomes are considered, for example stock market returns, gender quotas are associated with positive effects: gender quotas reduce the variability of stock prices.

During the financial crisis, Christine Lagarde said that if Lehman Brothers had been Lehman Sisters, we would have observed less dramatic consequences of the financial crisis. Then, she qualifies that “Brothers and Sisters” is the more efficient leadership. This very suggestive view, which refers to the literature on diversity management, has become very popular. Yet it still needs to be tested empirically, since, as we explained before, it is very hard to identify the causal effect of women on outcomes (see Adams, 2016 on this point).

THE AGENDA

By increasing female representation in decision-making positions, gender quotas may also be related to the introduction of new topics of discussion, less-explored issues and to re-orient expenditures and/or investments towards categories which were traditionally neglected. In sum, we can observe the emergence of a new agenda.

If the new agenda has a positive economic impact, this is another channel through which gender quotas are associated with beneficial economic effects.

In public policy decisions, for example, women leaders take responsibility for social issues, welfare, health, and education more than men, and expenditure in education is particularly relevant for growth-enhancing effects. Research that assesses the causal role of women on setting the policy agenda and the consequent effects on economic outcomes, however, is scarce and mainly limited to developing countries (Chattopadhyay and Duflo, 2004 and Clots-Figueras, 2011 for India; Brollo and Troiano, 2016 for Brazil). For developed countries, the (little) existing evidence is not conclusive. Funk and Gathman (2015) find that in the Swiss direct democracy, women support the allocation of larger expenditures on health and environmental protection. Ferreira and Gyourko (2014) instead find that having a female mayor in the United States does not change policy outcomes, such as the size of local government, the composition of municipal spending, employment or crime rates.

In a recent study with Baltrunaite, Casarico and Savio (2017), we show that the increase of women in Italian municipal councils due to a new policy (which combines gender quotas on candidate lists with double preference voting conditioned on gender) is not associated with a change of the size of local spending, while we find mild evidence of a change in the expenditure allocation. We find some preference in expenditure for the protection of the environment, which is in consistency with a female's stronger long-term orientation.

CONCLUSIONS

The 2030 Agenda for Sustainable Development launched by the UN and adopted in 2015 includes the following fundamental goal: to “achieve gender equality and empower all women and girls”. The European Commission states that “Gender equality is a fundamental right, a common value of the EU, and a necessary condition for the achievement of the EU objectives of growth, employment and social cohesion” (EU Commission).

Women's empowerment is a critical issue, one where progress has so far been slow and where room for improvement is large. More attention has to be concentrated on gender issues, both by researchers and policy-makers. Gender quotas are not a magic recipe, able to solve the gender gap problems. However, the

introduction of gender quotas, even temporary, may be useful to push women's empowerment without substantial economic costs. In certain circumstances, they may also be associated with beneficial outcomes: better quality of the representatives, better performance and an enriched agenda.

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Motherhood Postponement and Wages in Europe

INTRODUCTION

Nowadays it is not unusual for women to have their first child in their thirties. Figure 1 shows the trend in mean age at first birth in a sample of European countries. Starting from the 1980s, in almost all countries there is a sharp increase in the age of first motherhood. Multiple factors have been advanced to explain this trend. Education is surely an important one. Women's educational levels have been increasing at a faster pace than those of men in the last decades. Female education has a twofold delaying effect on age at first birth. The first is an "incapacitation effect", because enrolment in and completion of education are activities generally incompatible with childrearing. The second is an "aspiration effect", because one reason why individuals invest in their human capital (including inter alia on the job training) is to reap economic returns in the labour market (Becker 1994). It may be the case that these returns are maximised for women if they delay motherhood. Consistent with this view, two main reasons for postponing having children have been stressed in the economic literature: the *career planning motive* and the *consumption smoothing motive* (Gustafsson 2001). The career planning motive posits that women have their first child when motherhood is likely not to represent an obstacle any more to their full realisation in the labour market. This typically happens when they are at the apex of their careers or have little prospect of further promotion. The salience of this motive depends of course on the level of gender discrimination existing in the labour market and on the absence of labour market institutions favouring the full conciliation of family and work. The consumption smoothing motive is strictly related to the previous one, as it states that women give birth when children are unlikely to negatively impact household consumption levels, i.e. households dispose of enough income and wealth to smooth consumption. A slightly different interpretation of this motive is that women (and parents in general) wait to have children until they are sure to have enough resources to grant them the best life opportunities, or in more technical terms when they have the financial resources to invest in child quality (Becker and Lewis 1973). The rising competitiveness of the economic environment and the slower economic growth prevailing in most developed countries compared to the past may indeed require greater investments in child quality.

Besides labour market reasons for postponing the first birth, it must be noted that economic, demographic and sociological literature has stressed many other factors (see Sobotka 2004), such as, just to mention a few, the diffusion of contraception (giving increasing power to women), changes in sexual habits and social norms, and the development of assisted reproduction technologies, which potentially enable women to become mothers at older ages with respect to the past while focusing on their careers in their 30s and 40s.

The remaining article develops as follows. In the next section, we stress our main contribution to the existing literature. Then we describe our empirical strategy and the data used in the empirical analysis. The main findings are commented on in the results section, and summarised in the conclusion.

EXISTING LITERATURE

The existing literature generally shows a positive association between postponement of first childbirth and labour market outcomes (see Bratti 2015, for a review). Delaying motherhood positively affects both women's labour incomes (e.g., Miller 2011; Karimi 2014; Herr 2016; Leung et al. 2016) and labour force participation (e.g., Troske et al. 2013; Bratti 2014; Mølland 2016).

While evidence on the "postponement premia", i.e. the increase in wages or employability associated with late motherhood, is already widespread for a number of countries, our contribution to the existing literature is twofold. First, we provide comparative evidence for a large set of European countries using harmonised data from the European Union Statistics on Income and Living Conditions (EU-SILC) survey. Second, and most important, we make an attempt to relate country-specific estimates of "postponement premia" to indicators summarising the policy and cultural contexts prevailing in the different EU countries.

EMPIRICAL STRATEGY

We use EU-SILC data, described in the following section, to estimate country-specific "postponement premia" using the following equation

$$y_{ijt} = \alpha_0 + \alpha_{1j}A1B_i + \alpha_2X_{it} + D_{jt} + \epsilon_{ijt} \quad (1)$$

where y_{ijt} is an outcome variable referring to women's labour market performance (gross hourly wage); $A1B_i$ is a woman's age at first birth; X_{it} is a vector of control variables including age, level of education grouped in three categories (low, medium and high); migrant status and age of the youngest child. (We also estimated models controlling for current partners' presence, level of education and age, and results were only marginally different.). D_{jt} are country-year fixed effects, which capture, among others, differences in business cycles; ϵ_{ijt} is an idiosyncratic error term. Our parameters of interest are the country-specific estimates of "postponement



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premia” (α_{1j}). Equation (1) is estimated using Ordinary Least Squares (OLS). A positive (negative) sign on α_{1j} means that postponement of first birth has a positive (negative) effect on wage in country j . We expect “postponement premia” to be positive, at least in countries in which family and work are scarcely compatible. In particular, postponing motherhood may generate a double dividend on mothers’ careers. First, women delay a potential source of gender discrimination in both hiring and career promotion. We label this effect as the pure “career planning effect”. Second, starting childbearing later will probably entail a lower number of children (in demography the so called “postponement effect”, see Bratti and Tatsiramos 2012), also improving labour market outcomes via reduced fertility (see, for instance, the discussion in Miller 2011). In equation (1) we do not control for the number of children and estimate the gross “postponement premia” capturing both effects.¹

Although the recent literature has emphasised endogeneity issues related to pregnancy postponement (i.e. delayers may have unobservable characteristics also affecting labour market outcomes, such as “work orientation”) potentially biasing the OLS estimates (Miller 2011; Bratti and Cavalli 2014), our main interest lies in relating the estimates of the “postponement premia” to country-level policy and cultural features. In order to do so, we estimate the following equation

$$\hat{\alpha}_{1j} = \beta_0 + \beta_1 \text{Characteristic}_j + u_j \quad (2)$$

where $\hat{\alpha}_{1j}$ is the OLS estimates of the “postponement premia”; Characteristic_j is a summary indicator of a country’s policy or cultural orientation during the estimation period; and u_j an error term. In each estimate of equation (2), only one country characteristic is included at the time to avoid multicollinearity problems. We maintain that, conditional on country-year fixed effects controlled for in equation (1), countries’ features are less likely to be correlated with unobservable individual characteristics, which then enter the error term of the second-step of our analysis (u_j). The estimates are weighted by the inverse of the standard errors of s – using Weighted Least Squares (WLS) – since the dependent variable is generated by a regression. The sign and magnitude of the estimate of the parameter β_1 indicates whether “postponement premia” are on average positively or negatively affected by some specific countries’ attributes.

DATA

The data used for the estimation of equation (1) are a pooled sample of the cross-sectional version of EU-SILC from 2004 to 2014.² The EU-SILC currently covers the

EU28 members and adjacent countries such as Norway, Switzerland and Iceland. It collects information on all members of the sampled households, and contains detailed information on the respondents’ current economic and social conditions, with the main focus on income, poverty, living conditions and social exclusion. As this survey is not designed for demographic analysis, fertility data (age at first birth) had to be reconstructed from household information, relying on the “own child method” (OCM) (Bordone et al. 2009; Coleman and Dubuc 2010; Klesment et al. 2014) matching children and mothers within households. One drawback is that information is limited to children still living in the household, thus we have no information on dates of birth of children who have already left the parental home and do not belong to the surveyed household anymore. To overcome this limitation we focus on young women, so that their children are more likely to be still living in the parental household. We also decided not to consider teenage mothers, as they represent quite a different category of women. Thus, our working sample is composed of all mothers, aged between 18 and 45, at the time of the survey, for whom we observe having their first child between age 18 and 40.

We only include mothers who are currently working as employees, excluding self-employed mothers, and mothers whose income comes exclusively from dependent work, excluding employees who also have self-employment incomes.

To explain country differences in the impact of age at first motherhood on subsequent labour market outcomes (equation 2), we consider three main groups of indicators: the first one is composed of indicators which describe the social and economic conditions faced by women; the second one reflects culture and values of the analysed countries; the last one contains composite indexes which put together different dimensions related to gender equality and family-friendly policies. When possible, we consider the average value of the indicators over the years 2004-2014. If not possible, we consider the average value over the available years.

A) SOCIO-ECONOMIC INDICATORS

- *Strictness of employment protection*. It expresses the rigidity of the labour market in terms of costs related to individual dismissals in regular contracts [Source: OECD Indicators for Employment protection].
- *The unadjusted Gender Pay Gap (GPG)*. It is calculated as the ratio between the average gross hourly earnings of female paid employees and the average gross hourly earnings of male paid employees, multiplied by 100 [Source: The Structure of Earnings Survey, Eurostat].
- *Part-time jobs diffusion*. It is calculated as the share of women of age 20-64 working on a part-time basis [Source: LFS, Eurostat; available in the years 2007-2014 only].

¹ We also estimated models including the number of children. The “postponement premia” are generally smaller in size, showing that part of the labour market advantage of giving birth later is mediated by lower fertility.

² <http://ec.europa.eu/eurostat/web/microdata/european-union-statistics-on-income-and-living-conditions>.

- *Parental leave arrangements.* It is the total number of paid weeks to mothers, including both maternity and parental leave [Source: CESifo database; available in the year 2015 only].
- *Early formal childcare availability.* It is calculated as the proportion of children younger than three years old enrolled in formal childcare [Source: EU-SILC, Eurostat; available years 2005-2014 only].

B) CULTURE AND VALUES INDICATORS

- “Pre-school children suffer with working mothers / Being a housewife is as fulfilling as working / When jobs are scarce men should have the priority over women.” We calculate the percentage of male and female respondents who agree and strongly agree with the above statements [Source: own elaboration from the European Value survey; available in year 2008 only].
- *Age norm.* It is calculated as the percentage of respondents stating that the ideal age to become a mother is after 30 [Source: own elaboration from the “Timing of life” section of the European Social Survey; available in year 2008 only].
- *Leave - sharing.* It is calculated as the percentage of respondents to the question: “Consider a couple who both work full-time and now have a new-born child. Both are in a similar work situation and are eligible for paid leave. How should this paid leave period be divided between the mother and the father?” who respond “The leave should be used entirely by the mother” or “The leave should be used mostly by the mother” [Source: International Social Survey Programme; available in year 2012 only].
- *Religious participation.* It is calculated as the percentage of respondents attending religious services at least once per week. [Source: European value survey; available in year 2008 only].

C) COMPOSITE INDEXES

- *The family-friendly society index “Target field index”.* It summarises five sub-indicators: high birth rate, high female employment, high level of education, low poverty of families and gender equality; it takes values from 0 to 100 [Source: CESifo; available in year 2009 only].
- *The family-friendly society index “Fields of action index”.* It summarises three sub-indicators: “financial support”, which describes the degree of transfers, tax allowances or continuation of payments for families; “infrastructure”, which describes the coverage of formal childcare; and “time”, which describes the work-life balance, the efficiency of the educational system and tax system for the work-life balance; it takes values from 0 to 100 [Source: CESifo; available in year 2009 only].
- *The Gender Development index (GDI).* It measures gender gaps in human development achievements

by accounting for disparities between women and men in three basic dimensions of human development – health, knowledge and living standard – using the same component indicators as in the Human Development Index (HDI). It is a direct measure of gender gap showing the female HDI as a percentage of the male HDI [Source: UN; available years 2005-2014 only].

Obviously, many indicators are correlated among each other, and groups of countries may share similar values of these indicators. Countries with high availability of formal childcare are also the ones where part-time jobs are more diffused. In contrast, countries with longer parental leaves are the ones where fewer part-time jobs are available. These correlations identify different family-work strategies: the diffusion of the part-time option is related to the necessity to return to the labour market relatively early since formal childcare hardly covers a full-time work-day, and the mother is willing to spend time with the young child; on the other hand, where parental leaves are longer, mothers are supposed to be working full time once they are back to their jobs.

It is interesting to observe the relationship between objective measures and values. Countries with high level of agreement with the statements “mothers should mainly look after children”, “pre-school children suffer if mother works”, “if jobs are scarce, men should take them” are the countries with lower availability of formal childcare and with fewer part-time job opportunities. We also observe a positive correlation between more people agreeing with “being a housewife is as fulfilling as ...” and high levels of employment protection. Countries with higher employment protection are generally “dualist” and women are less likely to be in the protected sector and more likely to have less protected and less satisfying jobs.

Values may be the causes but also the consequences of different institutional settings: If women want to be at home and look after children, they are less likely to demand childcare services; if women do not face high availability of childcare and the possibility to work, this may tend to reinforce their beliefs.

We can cluster the countries in four groups, which roughly correspond to different European geographical areas: a first group of Nordic countries with medium levels of employment protection, part-time diffusion and leave length but the highest availability of formal childcare and the lowest attachment to “traditional” values; a second group of Continental European countries with lower employment protection and short leaves, higher availability of part-time jobs and childcare and low attachment to traditional values; a third group of Eastern European countries with medium employment protection, little part-time and childcare, longer leaves; a fourth group of Mediterranean countries with high employment protection, medium level of childcare, part-time and leave length, and strong attachment to traditional values.

RESULTS

In Figure 1 we plot the coefficients associated with the “postponement premia” in each country. With the exception of very few countries, having the first child at a later age is associated with a positive and statistically significant wage premium. In more detail, we see that the countries where the premium is negative or non-significant are mostly Nordic countries (Sweden, Iceland, Norway, Denmark) and a few Eastern European ones (Slovenia, Slovakia, Estonia, Lithuania). In all the Continental and Southern countries, the premia are always positive.

The three countries with higher premia belong to three different clusters: Germany (Continental), Poland (Eastern) and Portugal (Mediterranean). Nevertheless they share some common features in terms of country indicators: Poland and Portugal are Catholic countries; with relative low shares of part-time jobs, and very traditional values. Portugal, in addition, has very strict employment protection legislation, and Poland a very low share of childcare availability. We can expect that in those countries reconciliation of family and work is quite hard, and that there is “pressure” from social norms on focusing on childrearing after having a child, which could lead highly educated and/or motivated women to wait longer to become mothers so as not to waste their human capital and to enjoy higher re-entering wages after a maternity leave. This is also true for other countries which show positive though slightly lower premia, such as the Mediterranean European ones – Italy, Spain, Greece and Cyprus – and the more Catholic and traditional Ireland, Romania and Malta. Germany, on the other hand, has very long paid maternity leaves but low enrollment of children under age three in childcare and also one of the highest gender wage gaps.

In Table 1 we report the coefficient of the second model, where we regress the premia estimated in model (1) on indicators of countries’ policies and culture. We do as many regressions as the number of chosen indicators including one indicator at a time. A positive sign means that higher values of the indicators are

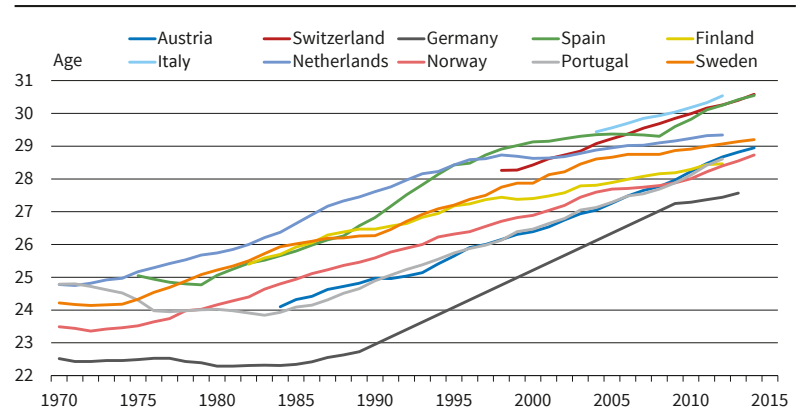
associated with higher premia for waiting longer to become a mother. In the Table, each cell corresponds to a different regression. In Figures 3 and 4, we report the cross plots between the wage premia and the statistically significant indicators.

When considering objective indicators, we see that the proportion of children aged between zero and three attending formal care and the length of maternity and parental leave have a negative association with the wage premia, suggesting that in countries which offer more family-friendly services (more childcare and more paid parental leave), the premia to have a child at older ages is lower, or the other way around, the penalty to become mother at younger ages is less.

When we focus on the indicators capturing culture and values, we see that three of them, namely the proportion of individuals agreeing that a pre-school child suffers if the mother works, the proportion of individuals agreeing that if jobs are scarce men should have the

Figure 1

Mother’s Mean Age at First Birth

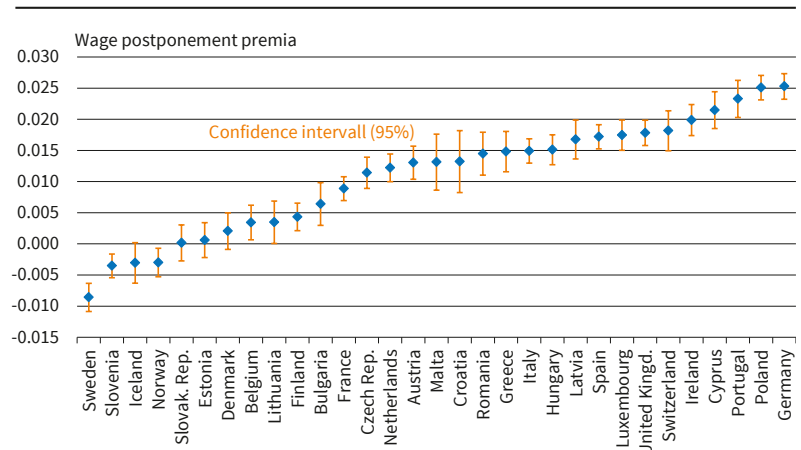


Source: Human Fertility Database (HFD); authors’ calculations.

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Figure 2

Effect of Maternal Age at First Birth on (log) Gross-Hourly Wages



Source: EU-SILC data; authors’ calculations.

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priority, and the proportion of individuals attending religious services at least once a week are positively correlated with the premia, and thus a higher value of these indicators raises the premia to become mother at a later age. Countries with higher values of these indicators can be considered as “more conservative” and indeed they are mostly Mediterranean countries (Italy, Portugal, Cyprus, Greece and Malta) and/or the most Catholic ones (Ireland and Poland). Of course these cultural values are associated with other objective indicators (e.g., negatively with proportion of children enrolled in childcare).

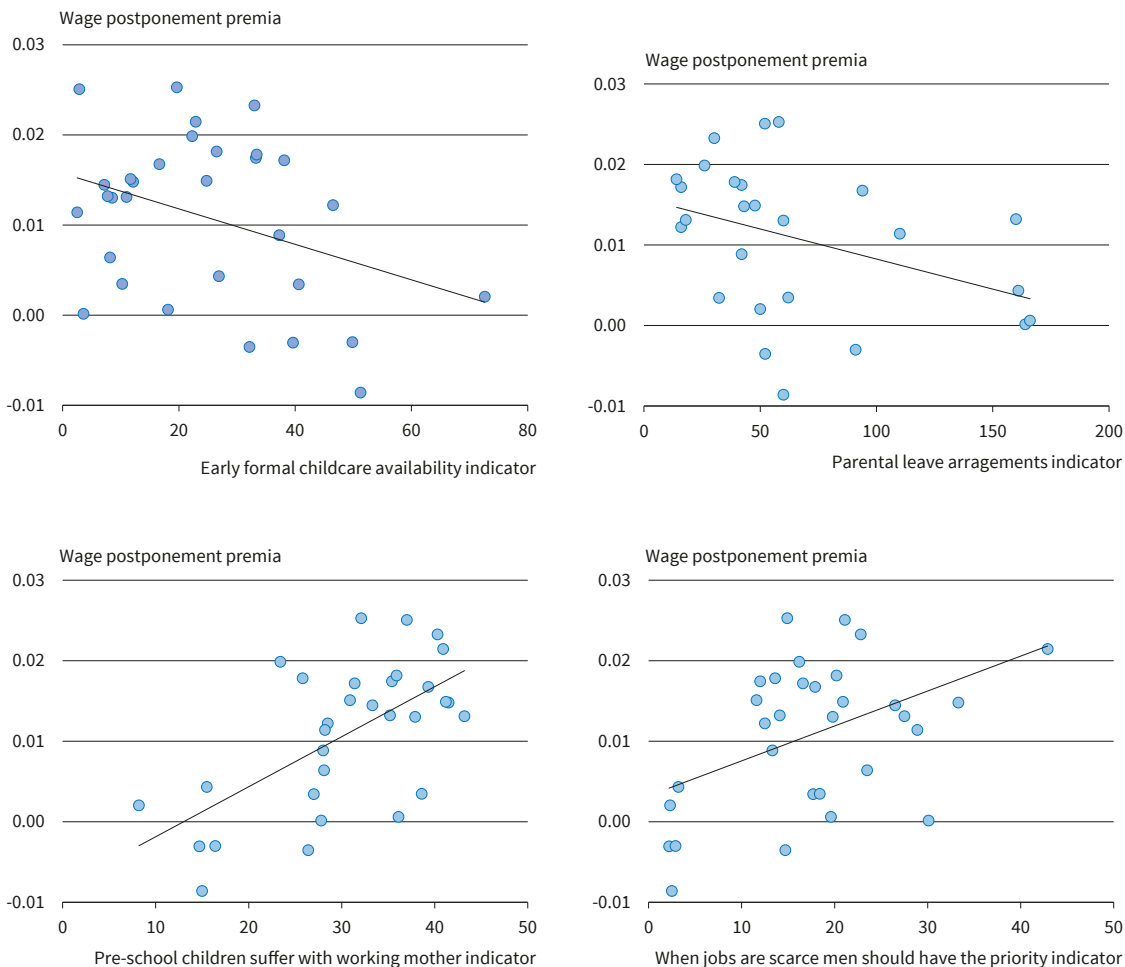
Finally, when focusing on composite indices we see that both the fields of action index and the target fields index are positively associated with the premia. Thus, higher values of the indices, representing more family-friendly societies, are associated with lower premia for late-age mothers. Similarly the Gender Development Index, whose higher values represent a more gender equal society based on health, knowledge and living standards, is negatively associated with the premia.

CONCLUSION

Given the several challenges that women with children face in the labour market, late motherhood may represent a way for women to delay the labour market costs of having children. This article represents a first attempt to investigate the differences in the labour market returns from motherhood postponement in Europe (“postponement premia”) using highly comparable EU data. Our analysis shows a high variability in the “postponement premia” related to wages. In some countries delaying the birth of the first child by one year may produce an increase in wages as high as 2.5% (Germany or Poland), while in other countries the effect can be negative. We provide some evidence that these premia are related to the policies and institutions in place in the different countries. Namely, the wage gains from postponing motherhood are larger in countries lacking family-friendly policies and in more traditional societies, and smaller in countries promoting higher gender equality.

Figure3

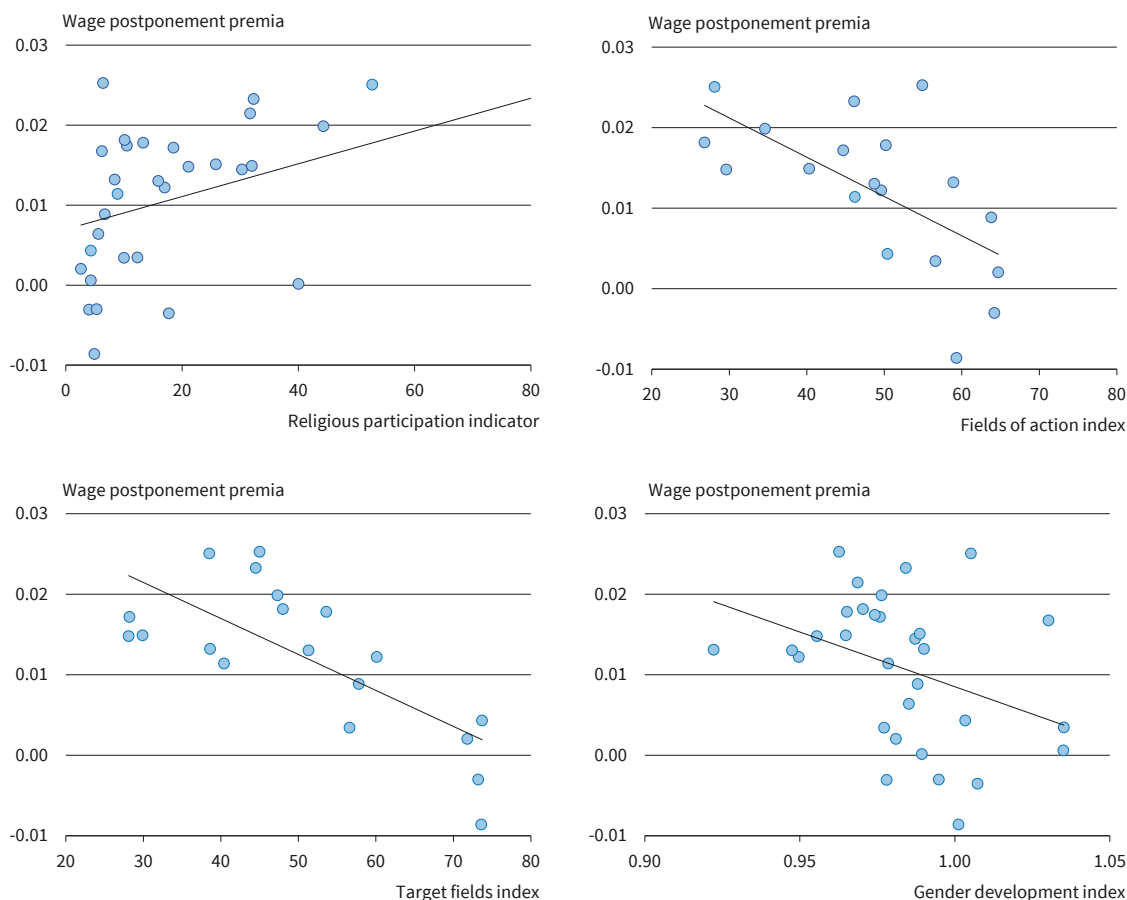
Cross Plot of Wage “postponement premia” and Countries’ Policy/Values Indicators



Source: Authors’ computations.

Figure 4

Cross Plot of Wage “postponement premia” and Countries’ Values/Gender Indicators



Source: Authors' computations.

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Table 1

Regression of Wage “Postponement Premia” on Countries’ Characteristics

Indicators	Estimates	Observations
Strictness of employment protection	0.00123 (0.34)	26
Unadjusted Gender Pay Gap	-0.0000899 (-0.32)	31
Part-time jobs diffusion	-0.0000116 (-0.12)	30
Parental leave arrangements	-0.0000837* (-2.13)	26
Early formal childcare availability	-0.000223* (-2.31)	31
Pre-school children suffer with working mother	0.000662*** (4.31)	31
Being housewife is as fulfilling as working	-0.0000734 (-0.45)	31
When jobs are scarce men should have the priority	0.000462* (2.72)	31
Age norm	0.000324 (1.01)	21
Leave - sharing	0.0000674 (0.45)	20
Religious participation	0.000248* (2.52)	31
Target fields index	-0.000455*** (-4.50)	19
Fields of action index	-0.000516** (-3.45)	19
Gender Development Index	-0.160* (-2.30)	31

t-statistics in parentheses, + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001.

Note. “Estimates” are the estimated coefficients from a regression of country-specific postponement premia on the indicators listed in column 1, obtained using WLS (weighted by the inverse of the standard error of the generated dependent variable). The number of observations may differ across regressions depending on the availability of the indicators.

Source: Authors’ computations.

Yvonne Giesing and Nadzeya Laurentsyeva The EU Blue Card – Time to Reform?¹



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CEPS.

EUROPE'S NEED FOR QUALIFIED WORKERS

The demographic change and the need for expertise in certain sectors as well as high emigration rates in some regions have led to skill shortages and unfilled vacancies in Europe. While governments have increased efforts to improve the education system and to raise the labour market participation of women and other groups with traditionally lower economic activity, the demand for qualified labour cannot be fully met by the domestic workforce. The EU thus needs to attract a significant number of foreign qualified workers in the coming years to ensure the competitiveness and innovativeness of domestic firms.

At the same time, EU member states differ in their industry structures, economic conditions, as well as in the design of the welfare systems. Hence, there are differences in both the attractiveness of the EU countries for potential migrants and the demand for immigrants from the local firms. Arguably, national migration policies can efficiently address country-specific issues. What is, then, the added value of a supranational scheme such as the Blue Card?

The common answer is: making the EU, as a whole, more attractive for global talent flows.² Most high-skilled migrants consider several destination options when they make the decision to emigrate. The EU member states “compete” with the classic immigration countries such as Australia, Canada, the United States, the UK, as well as with emerging China. A transparent, flexible, efficient and salient immigration system would be one factor that can make the EU more alluring to high-skilled immigrants. Moreover, if the EU member states coordinate their efforts to promote the single scheme for high-skilled workers, it should be on aggregate less costly compared to the case when each country pursues its own policy.

Another advantage of the single EU scheme is potentially higher mobility of the high-skilled immigrants within the

EU. On the one hand, access to a larger labour market serves as an additional advantage of the EU scheme from an immigrant’s point of view. On the other hand, there are also potential gains for the EU countries. A large literature has emphasised the importance of high-skilled mobility as one of the drivers for knowledge flows and thus innovativeness (e.g. Braunerhjelm et al., 2015; Kaiser, 2015). Moreover, many EU firms operate in several countries and require their employees to work from multiple locations. Yet, the mobility of non-EU high-skilled immigrants is limited when their work permits are tied to a particular employer and when they have to comply with different national regulations.

INTRODUCTION OF THE EU BLUE CARD

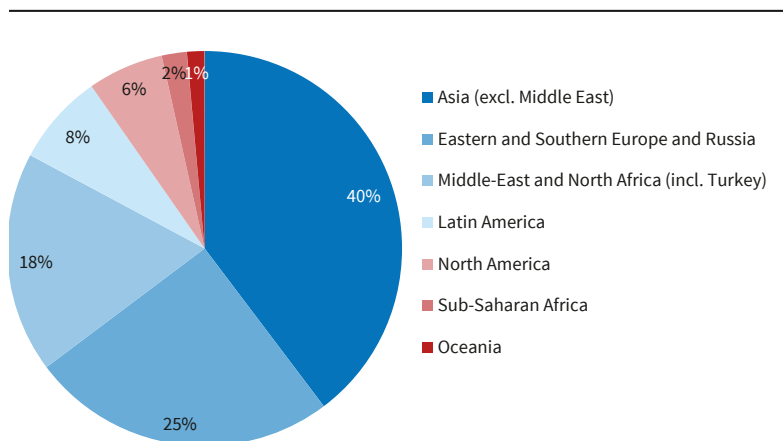
The Scheme

The EU Blue Card allows high-skilled non-EU citizens to work and live in an EU member state for up to three years with the option of renewal. EU member states integrated the EU directive into their national legislation up to June 2011, and since 2012 most member states have started to issue Blue Cards.³

To be eligible for the Blue Card, applicants need to have a binding job offer with a salary of approximately 1.5 times the countries’ average gross annual salary. In addition, applicants need a relevant higher professional qualification, valid travel documents and health insurance. Blue Card holders have the right to bring their close family with them and to move freely within the EU. After 18 months of working in one EU member state, Blue Card holders can move for work to another EU member state and request the Blue Card in this new country. After five years of residence in one or several member states, Blue Card holders can apply for a long-term EU residency.

³ Denmark, Ireland and the UK do not participate in the EU Blue Card scheme.

Figure 1
Blue Card Holders by Nationality, 2015



Source: Eurostat.

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¹ The authors would like to thank Larissa Nagel and Jonathan Öztunc for their data research assistance.

² Council directive 2009/50/EC <http://eur-lex.europa.eu/legal-content/en/TXT/?uri=celex%3A32009L0050>.

While the EU Commission has set the general rules and eligibility requirements for the Blue Card, the member states had some leeway in the national implementation. Consequently, the salary threshold of 1.5 times the national average has been set higher in some countries. Furthermore, certain countries have coupled it with a labour market test that checks if there would be an equally qualified EU citizen to fill the position. The definition of what it means to be high-skilled also varies across EU member states, and certain countries have introduced quotas or upper limits on immigrants.

Nationalities of Blue Card Holders

The number of granted Blue Cards has been steadily increasing from a total of 3,664 in 2012 to 17,106 in 2015. The top three countries of origin of Blue Card holders in 2015 were India, China and Russia. Asia is the region with the largest number of Blue Card holders. Eastern and Southern Europe and Russia come second. Countries in Latin and North America, Sub-Saharan Africa and Oceania account for less than a fifth of applicants.

The origin of Blue Card Holders varies strongly in the different EU member states. Table 1 shows an overview of the three largest origin countries of EU Blue Card holders in every EU member state. Of the Central and Eastern European EU members (Bulgaria, Czech Republic, the Baltics, Austria, Poland, Romania), the highest numbers of Blue Cards are given to Ukrainian and Russian nationals. Western Europe (Germany, France, Italy, Luxembourg) attracts many Blue Card holders from India and the US.

Low Number of Granted Blue Cards

The total amount of Blue Cards, however, has remained small. As Table 2 shows, most countries issued less than 100 Blue Cards in 2015, and Belgium, Estonia, Greece, Croatia, Cyprus, Hungary, Malta, Netherlands, Portugal, Slovenia, Slovakia, Finland and Sweden granted fewer than 100 Blue Cards over the total four years (2012-2015). Germany stands out for having granted more than 40,000 Blue Cards. There are several reasons for this: the lower effective wage threshold, the booming economy and the large amount of conversion from previous student visas. This generally very low number of granted Blue Cards especially compared with national immigration schemes points to the fact that the Blue Card scheme has failed to facilitate high-skilled immigration into the EU.

Competing National Schemes

One of the reasons why member states have granted a low number of Blue Cards is that they have national policies in place to attract high-skilled migrants. These policies are very different in the various European countries. Some member states provide working permits for people with specific skills or working in specific sectors, for instance in IT, healthcare or engineering. Most member states facilitate the admission for high-skilled workers through fast-track visa procedures, exemptions from labour market tests, information campaigns or other incentives. Other member states (Bulgaria, Cyprus, Estonia, Greece and Romania) have restricted

Table 1

Granted EU Blue Cards per Participating EU Country for the Countries of Origin with the Three Highest Absolute Numbers

Country	Highest number of Blue Cards	Second highest number of Blue Cards	Third highest number of Blue Cards
Belgium	Turkey 4	Morocco, United States, India 3	Serbia, Russia, Egypt, Mexico, Iran, Pakistan, 1
Bulgaria	Ukraine 36	Russia 8	China 5
Czech Republic	Russia 63	Ukraine 57	United States 9
Germany	India 3030	China 1182	Russia 1167
Estonia	Ukraine 12	Russia 5	Turkey, Moldova 1
France	United States 117	India 62	Canada 52
Croatia	South Korea 8	Serbia 5	Macedonia, Bosnia and Herzegovina, Russia 4
Italy	United States 31	Russia 30	India 22
Latvia	Ukraine 49	Russia 16	China 7
Lithuania	Ukraine 54	Russia 30	Belarus 22
Luxembourg	India 52	United States, China 51	Russia 46
Hungary	India, Pakistan 4	United States 3	Serbia, Algeria, Brazil, South Korea 1
Netherlands	Trinidad and Tobago 8	Russia, India 2	Belarus, Ukraine, South Africa, Canada, Mexico, Taiwan, Oman, Australia, 1
Austria	Russia 41	Brazil 19	India 17
Poland	Ukraine 272	Russia 33	India 17
Romania	Ukraine 30	India 16	United States, Russia 14
Slovenia	Ukraine 4	Serbia 3	Belarus 2
Finland	United States 3	China, India, 2	Russia, South Africa, Mexico, Chile, Japan, South Korea, Singapore, Australia 1

Source: Eurostat.

Table 2

Granted EU Blue Cards per Participating EU Country

Country/Year	2012	2013	2014	2015
Belgium	0	5	19	19
Bulgaria	15	14	21	61
Czech Republic	62	72	104	181
Germany	2,584	11,580	12,108	14,620
Estonia	16	12	15	19
Greece	0	0	0	0
Spain	461	313	39	4
France	126	371	602	659
Croatia	n.a.	10	7	32
Italy	6	87	165	237
Cyprus	0	0	0	0
Latvia	17	10	32	87
Lithuania	n.a.	26	92	128
Luxembourg	183	236	262	336
Hungary	1	4	5	15
Malta	0	4	2	0
Netherlands	1	3	8	20
Austria	124	108	128	140
Poland	2	16	46	369
Portugal	2	4	3	n.a.
Romania	46	71	190	140
Slovenia	9	3	8	15
Slovakia	7	8	6	7
Finland	2	5	3	15
Sweden	0	2	0	2
Total	3,664	12,964	13,865	17,106

Source: Eurostat.

the number of high-skilled migrants. Such variation in the national policies reflects differences in the demand for immigrants within the EU.

Table 3 shows that the number of residence permits issued for work reasons in all EU countries is much larger than the number of issued Blue Cards. This suggests that while member states have a need for migrant workers, they are more likely to use national schemes in comparison with the Blue Card. In 2015 in Belgium, 50,085 national permits were issued compared to 19 Blue Cards; in France, 226,630 compared to 659 Blue Cards; in Sweden, 110,623 compared to two Blue Cards. Thus, in all countries, the amount of national work permits issued is much larger than the amount of Blue Cards granted. There are a number of possible reasons why the Blue Card Scheme is used so rarely and they are outlined in the following sections.

The Salary Threshold

While the EU Commission has set the general rule that the salary threshold should be around 1.5 times the average gross annual salary, member states were free to determine the exact amount. Romania, for instance made use of the possibility to set a higher threshold and put it at four times the national average gross wage.

Furthermore, member states have to publish the relevant salary thresholds to be transparent. A review of the European Commission, however, has determined that the salary threshold information is not clearly communicated and cannot be easily found on national websites or the EU Immigration Portal. It is thus difficult for potential Blue Card applicants and for firms to assess their chances of success.

Germany, Estonia, Hungary and Luxemburg have effectively adopted the possibility to have a lower threshold (1.2 times the average gross annual salary) in sectors with skill shortages. In 2017, Germany, for instance, has a general threshold of €50.800. However, for work in shortage occupations, defined as scientists, mathematics, engineers, doctors and IT- skilled workers, a salary of €39,624 is sufficient.

The Job Offer Prerequisite

To be eligible for the Blue Card, applicants need to have a binding job offer. In most member states it has to be of at least a one-year duration. This ensures that the immigration is tightly matched with labour market needs and that no immigration into the welfare system is possible. This good intention, however, creates a significant barrier for potential high-skilled workers. First, many companies require a valid work permit at the time of the application or give priority to applicants who already possess a valid work permit. Second, it is difficult to apply for work when you are not in the country and can attend an on-site interview on short notice. This strict requirement of a binding job offer might thus be one of the reasons why the Blue Card is not granted in high numbers and why national schemes might be preferred in many cases.⁴

Labour Market Test

Twelve member states have included a labour market test in their procedures. This requires a check by the foreign or employment office to examine if the position could also be filled by a national or an EU citizen. While this test aims at preventing adverse labour market consequences for locals, it introduces additional administrative burdens and might cause a time delay.

THE NEED FOR REFORM

The high salary threshold, the job offer prerequisite and the labour market test have created additional hurdles for high-skilled immigrants to work in the European Union. In addition, from the perspective of firms, national schemes look more advantageous. As a consequence, the number of granted Blue Cards has been significantly lower compared to national work permits to high-skilled individuals. Therefore, the EU Commission has brought forward a proposal to reform the EU

⁴ Many national schemes include a job search visa for high-skilled applicants and do not require a binding job offer.

Blue Card and simplify it in order to increase its relevance.

Proposed Changes

In June 2016, the European Commission suggested a number of proposals to revise the Blue Card Directive.⁵ We group these proposals by the goals they aim to achieve.

1. Attracting More High-skilled Non-EU Citizens Through the Blue Card Scheme

The current proposals aim at increasing the number of high-skilled immigrants by relaxing the salary threshold, stating clearer education and qualifications criteria, and improving the immigrants' rights.

The new *salary threshold* is set at the level equivalent to or at the highest 1.4 times the average national salary. Hence, there is scope for national adjustment of the salary threshold within the indicated range. In addition, a lower threshold of at least 80% of the average national salary can be applied toward workers in short-staffed occupations or recent foreign graduates. Lowering the threshold should increase the number

of foreigners qualified for the Blue Card, not by increasing the demand from immigrants but by making hiring of foreigners more attractive for the EU firms.

Further, according to the proposal, to qualify for a Blue Card, a non-EU applicant has to possess either a tertiary degree (at least bachelor or equivalent) or to have relevant professional skills with at least three years of experience. It becomes obligatory to recognise professional experience as an alternative to education qualifications.

The proposal also extends rights of the Blue Card holders. First, it grants the right to self-employed activity in parallel with the Blue Card job. Second, it foresees a shorter period to obtain the EU long-term residence: three years (instead of five) if residing in the same country. Third, family reunification is facilitated: family members can receive their residence permits simulta-

Table 3

First Residence Permits Issued for Work Reasons per EU Country

Country\Year	2012	2013	2014	2015
Belgium	47,278	42,463	43,823	50,085
Bulgaria	6,418	6,436	8,795	9,595
Czech Republic	42,123	45,544	35,458	68,804
Denmark	24,812	31,311	35,886	46,153
Germany	184,070	199,925	237,627	194,813
Estonia	2,530	2,496	3,222	3,984
Ireland	26,818	32,780	36,728	38,433
Greece	16,252	18,299	22,451	37,464
Spain	223,318	196,244	189,481	192,931
France	199,480	214,346	220,599	226,630
Croatia	n.a.	3,320	3,334	3,433
Italy	246,760	243,954	204,335	178,884
Cyprus	11,715	11,455	13,841	15,569
Latvia	5,620	7,615	9,857	6,357
Lithuania	3,696	4,601	7,252	5,178
Luxembourg	3,804	4,169	4,289	4,918
Hungary	13,282	16,833	21,188	20,751
Malta	4,526	6,795	9,895	9,984
Netherlands	51,162	64,739	69,569	72,355
Austria	37,852	34,308	40,062	51,282
Poland	146,619	273,886	355,521	541,583
Portugal	32,590	26,593	29,764	29,021
Romania	10,125	11,160	10,294	11,289
Slovenia	9,092	8,271	9,891	11,417
Slovakia	4,210	4,416	5,510	9,279
Finland	20,263	21,122	21,552	21,797
Sweden	90,248	99,122	107,947	110,623
United Kingdom	631,940	724,248	567,806	633,017

Source: Eurostat.

neously with the issue of the Blue Card. In addition, member states cannot restrict labour market access for family members, although a labour market test can be conducted.

The changes regarding the salary threshold and the qualifications criteria are supposed to increase the pool of applicants qualifying for the Blue Card scheme, while clearer rules and improved rights should increase the attractiveness of the EU as a destination.

2. Reducing Costs for EU Employers

Apart from a lower wage threshold, several other proposals aim at reducing costs of hiring a foreign employee. For instance, labour market tests are now allowed only in the case of serious disturbances, such as high levels of unemployment. Maximum processing time is reduced from 90 to 60 days. The revision also assumes the reduction of the minimum contract duration from 12 to six months, thus making it more feasible for firms to have a trial contract first.

⁵ http://ec.europa.eu/home-affairs/sites/homeaffairs/files/what-we-do/policies/european-agenda-migration/proposal-implementation-package/docs/20160607/directive_conditions_entry_residence_third-country_nationals_highly_skilled_employment_en.pdf.

3. Enhancing Mobility

The revision proposal addresses both short-term mobility related to business activities and mobility within EU member states. The Blue Card holders shall be allowed to carry out a business activity in another member state during a maximum of 90 days within a 180-day period without fulfilling additional bureaucratic requirements. This modification should be useful for firms operating in several EU member states and requiring high intra-firm mobility.

Mobility within the EU is facilitated by shortening mandatory residence in the previous member state from 18 to 12 months. The proposal also simplifies procedures and conditions to fulfil when applying for the Blue Card in another member state.

A particular amendment extends the Blue Card to high-skilled beneficiaries of international protection (not asylum seekers or beneficiaries of temporary protection) residing in member states and having the right to work. The goal is to improve labour market opportunities for high-skilled recognised refugees. Under the existing regulation, recognised refugees are restricted to residing in the country that provides protection. Hence, they face a limited choice of vacancies and have a lower chance of finding a position matching their specific skills.

4. Competing With the National Schemes

Finally, the proposal suggests making the Blue Card scheme mandatory for the member states. This implies abandoning the national schemes that target the same group of high-skilled individuals.

WILL THE REVISED SCHEME ACHIEVE ITS GOALS?

The main goal of the revised Blue Card is to attract more high-skilled individuals to work in the EU. This goal could be achieved by increasing the supply of high-skilled individuals willing to work in the EU rather than everywhere else, adjusting to the demand of the EU firms, or eliminating matching frictions between the local firms and foreign job applicants. Because the new Blue Card is supposed to replace the national schemes, an important question to ask is whether the single EU policy can address the above issues better than the national regulations.

Will the EU Become More Attractive for High-Skilled Individuals?

Compared to the original directive, the new scheme expands the employment options of the Blue Card holders by allowing self-employment and enhancing mobility. Furthermore, the scheme eases immigrants' access to the long-term EU residence and facilitates family reunification. Harmonising these conditions across all EU member states makes it easier

for foreign applicants to navigate the regulatory framework, to consider a larger labour market and to focus on economic rather than legal or bureaucratic aspects when choosing their destination within the EU. In addition, the proposals reduce dependence of immigrants on their first employer in the host country. Together, these changes could increase the supply of potential non-EU immigrants with good job opportunities.

New provisions regarding the young graduates might also stimulate new inflows. Reducing the wage threshold for this immigrant group (who often lack professional experience to obtain a high wage) is likely to increase their employment chances in the EU. Together with the amendments to the Student Directive,⁶ this proposal will help to retain promising young professionals and to attract more foreign students to study in the EU rather than in the US or in the UK.⁷ Consequently, the supply of highly educated people will increase.⁸ While this policy can also be conducted at the national level, coordination within the EU might be more efficient, in particular, to facilitate job search in EU member states different from the country of study.

Will the New Scheme Become More Attractive for Firms?

The public discussion about the competitiveness of the Blue Card revolves primarily around the decision-making of migrants. However, the local firms play a similarly important role: They search for candidates, issue a job offer and bear the bureaucracy-related costs. While the EU firms report shortages of skilled workforce, the additional costs of hiring a foreign employee are often so high that firms prefer to search longer for an EU-national or to outsource tasks abroad. In this way, the proposals to abandon the labour market test and to reduce the processing time can make it more attractive for firms to hire immigrants. Firms that operate internationally will also benefit through better mobility possibilities for non-EU employees.

The revised directive also harmonises and relaxes the existing wage thresholds across the EU member states. Under the old Blue Card scheme, wage thresholds indeed represented binding constraints for many firms. Yet, in most countries, firms could (and did) alternatively hire immigrants under the national rules, which better corresponded to the local demand. Therefore, even though the proposal lowers the threshold, it would be hard to attract additional flows of high-skilled migrants relative to the benchmark case, when each EU member state applied its own (presumably optimal) rules. Abandoning the national schemes without

⁶ Which allows graduates to look for employment in the host member state for at least nine months.

⁷ Kato and Sparber (2014), for instance, illustrate that the availability of high-skilled visas affects the attractiveness of the US universities for foreign students.

⁸ In case of the US, for example, 45% of new H-1B (professional) visas in 2014 went to applicants already present in the US (most of them recent students) (Kerr et al., 2016).

enough flexibility under the Blue Card could lead to suboptimal outcomes.⁹

Will the New Scheme Reduce Matching Frictions?

Matching frictions exacerbate migration costs for non-EU job seekers and hiring costs for EU firms. The toughest constraints are the requirement of the job offer and a minimum duration of a contract, which lead to high costs for both a migrant and a firm in case of a poor quality match. The new proposal slightly reduces these costs by shortening the required minimum contract duration to six months. However, the need of a job offer will remain an important constraint. In case the national schemes are abandoned, the new scheme would put some countries (those that allow for temporary job-search visas) at a disadvantage.

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⁹ In the US, for instance, the wage threshold for H-1B visa applies locally: firms are required to pay the visa holder the higher of the prevailing wage in the firm for the position, or the prevailing wage for the occupation in the area of employment.

Judith Saurer¹

The Acquisition of Citizenship in the OECD countries

Citizenship is a key matter for immigrants and their host countries alike. For the latter, the question is when and under which conditions it is appropriate to grant citizenship to the immigrant population. For the immigrants, however, the question arises as to whether it is worthwhile to fulfill these requirements and apply for citizenship. Since granting citizenship is considered a part of integration policy in most countries, economic literature focuses mainly on the effect of citizenship in closing preexisting socio-economic gaps between immigrants and natives. Studies by Chiswick (1978), Brantsberg et al. (2002), Gathmann and Keller (2014) and many other authors find positive effects on the integration of immigrants on the labour market. Recent literature also focuses on the specific integration policy of granting birthright citizenship – granting children of immigrant descent citizenship at birth in the host country. Avitabile et al. (2015) and Felfe et al. (2016) find positive socio-economic effects of granting birthright citizenship on children and their families.

ACQUISITION OF CITIZENSHIP

Table 1 shows absolute numbers of naturalisations and naturalisation rates in 2014 for the OECD countries. There are substantial differences between the countries. Some of the countries have only a low number of granted citizenships given the size of their foreign population, like Austria, Estonia and the Slovak Republic, with less than 1 percent of the foreign population being granted the citizenship of the host country. Other countries like Hungary, Poland and Sweden grant over 6 percent of their foreign population the citizenship of the host country. Typical immigration countries like the US, Australia and New Zealand have a similar naturalisation rate of three percent.

There are several ways to grant citizenship to foreigners, with an important distinction to be made between granting citizenship to children and granting citizenship to adults. For children we can differentiate between *jus sanguinis* (right by blood) and *jus soli* (right by soil). Naturalisation requirements for adults mostly depend on the time spent in the host country and vary quite substantially across countries.

ACQUISITION OF CITIZENSHIP FOR CHILDREN OF MIGRANT DESCENDANTS

All countries in the world have a *jus sanguinis* provision. This means that children who have at least one parent holding citizenship of that country are automatically granted citizenship. There are exceptions in some countries if parents are not married and only the father holds the citizenship of the country. Other countries, like Italy, also grant citizenship if only the grandparents hold Italian citizenship.

The other much-discussed way for children to acquire citizenship is the '*jus soli*' approach, which literally means law by soil and indicates that a child is granted citizenship of the host country just by being born in the country. This practice is most commonly found in traditional immigration countries like the US or Canada. Some countries, like Germany or Greece, however, attach further conditions to granting citizenship based on *jus soli*. Usually these are related to a minimum duration of stay of the parents in the host country varying between five and eight years. Other countries, like Hungary, Italy, Poland and Iceland, only

Table 1
Naturalisations in the OECD Countries in 2014 for Foreign Born Population

	Naturalisation in absolute numbers	Naturalisation rates
Austria	7570	0.7
Belgium	18727	1.5
Czech	5114	1.2
Denmark	4747	1.2
Estonia	1614	0.8
Finland	8260	4.0
France	105613	2.5
Germany	108422	1.4
Greece	29462*	3.8
Hungary	8745	6.2
Ireland	21090	3.8
Italy	129887	2.6
Luxembourg	4991	2.0
Netherlands	32578	4.0
Poland	3792**	6.8
Portugal	21124	5.3
Slovak	233	0.4
Slovenia	1262	1.1
Spain	93714	1.9
Sweden	43510	6.3
UK	125653	2.5
Iceland	595	2.6
Norway	15336	3.2
Switzerland	33325	1.8
Turkey	9216***	5.3
Australia	162002	2.5****
Canada	114573*	5.9
Japan	9277	0.4
New Zealand	28757	2.7****
USA	653416	3.0

* Data from 2013. ** Data from 2012. *** Data from 2011. **** Percentage of foreign-born population.

Source: International Migration Outlook 2016, OECD.

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Table 2

Naturalisation Provisions for Immigrant Children in the OECD Countries

	Jus sanguinis	Jus soli	Conditions jus soli	Since
Austria	x			
Belgium	x	x	Parents live 5 years in Belgium within 10 years before birth	2013
Czech Republic	x	x	Only if parents have no citizenship	
Denmark	x			
Estonia	x			
Finland	x			
France	x	x	At least one parent is born in France	
Germany	x	x	At least one parent has legally resided for 8 years in Germany	01.01.2000
Greece	x	x	Parents live 5 years in Greece	
Hungary	x	(x)	Only if the child would be without any citizenship	
Ireland	x	x	Link to Ireland --> 3 out of 4 years in IR; or one parent is British	01.01.2005
Italy	x	(x)	Only if the child would be without any citizenship	15.08.1992
Luxembourg	x			
Netherlands	x			
Poland	x	(x)	Only if the child would be without any citizenship	
Portugal	x	x	Of one parent is born in Portugal and lives there	
Slowak Republic	x	(x)	Only if the child would be without any citizenship	
Slovenia	x			
Spain	x	x	Either parent born in Spain	
Sweden	x			Jus sanguinus: 01.04.2015
UK	x	x	One parent lives in the UK or works in the British armed forces	British Armed Forces: 13.01.2010
Iceland	x	(x)	Citizenship at 18 years old	
Norway	x			
Switzerland	x			
Turkey	x	(x)	Only if the child would be without any citizenship	
Australia	x	x	One of the parents has to reside permanently in Australia, or the child receives citizenship when it was born there at age 10.	20.08.1986
Canada	x	x		
Japan	x	(x)	Only if the child would be without any citizenship	
New Zealand	x	x	One of the parents lives in NZ permanently	01.01.2006
USA	x	x		

Source: Own collection of data from governmental websites.

grant birthright citizenship if the child would not have any other citizenship.

In the last couple of years several studies have analysed the effect of jus soli citizenship on the integration of parents and their children who received citizenship. The authors of the studies document positive effects of birthright citizenship on the length of stay and integration efforts of immigrant children’s parents (Avitable et al., 2013, 2014; Sajons, 2014). Far less understood are the direct consequences for immigrant children themselves. A first study by Felfe et al. (2016) finds positive effects on the introduction of birthright citizenship on the children and their educational efforts.

NATURALISATION OF ADULTS

Adults can also obtain citizenship of a host country. Normally they have to fulfill several requirements before being granted citizenship. All OECD countries have a minimum duration of stay requirement, which varies across countries from five to 12 years (for spouses, refugees and associate countries there are potential reductions in the required length of stay). This ensures that individuals have at least some links to

the host society and that they are willing to stay in the country for a longer period of time.

The proof of language proficiency is an important part of most naturalisation requirements. Host countries want to make sure that the new members of the society speak the host countries’ languages at least rudimentarily. However, there are differences in the language level they require. Some countries ask for a European A2 certificate, others a B1 or a B2 certificate.

A further requirement that many countries impose on applicants to gain citizenship is being self-supportive. Five countries (Slowak Republic, Turkey, Japan, New Zealand and the U.S.) conduct language tests during their naturalisation processes. This precondition also varies across the OECD countries. Some countries require that applicants live on their own income, others allow for subsidies. Likewise, the time that individuals have to be self-supportive before applying for citizenship varies across countries: between three out of five or eight years. The requirement of being self-supportive can give the host country the confidence that individuals do not apply for citizenship in order to obtain social transfers.

A further important issue is whether countries allow dual citizenship. If dual citizenship is not allowed, the applicant must renounce his/her previous citizenship when applying for the citizenship of the host country, which might impose both monetary and non-monetary costs on the applicant. Countries do not only regulate whether they allow dual citizenship or not, but also which nationals of which countries might be allowed to keep a second nationality. For example, in the European Union, citizens of most of the countries are allowed to keep their citizenships when obtaining the citizenship of another European Union member country. For example, while Germany does not allow dual citizenship in general, it allows it for citizens of EU member states.

POLICY CONTEXT

Holding citizenship is seen as the final step in an immigrant’s integration process. However, as the literature shows, it also has the potential to further integrate immigrants in the host country through several channels. First, citizenship is a basis for political and professional equality and thus for successful long-run integration in the host country. Hence, it is likely to enhance immigrants’ future labour market opportunities and increase their families’ likelihood of staying in the host country (Sajons, 2010). As a result, immigrants may decide to invest in host-country-specific human capital by, for instance, increasing their use of the local language, developing a network of native friends or adopting cultural habits (Avitable et al., 2013; Sajons, 2012). Second, the educational investment decisions of immigrant parents into their children might also differ, by adopting the decisions of natives. In addition, children themselves may put forth more effort in school and form closer ties to their native peers once they are aware of the benefits of citizenship. Third, citizenship may reduce discrimination by peers or local decision makers (e.g., teachers or school principals) and employers.

Obtaining citizenship offers the opportunity for the foreign-born population and their offspring to become a more integrated part of the host society. Giving more immigrants the opportunity of becoming citizens in a host society and fostering their integration process at relatively little cost is ultimately a policy decision.

Table 3
Naturalisation Provisions for Adults in the OECD Countries

	Length of stay	Self-Supportive	Language	Dual citizenship
Austria	10 years	x	B1	x
Belgium	10 years	x	A2	x
Czech Republic	5 years	x	B1	x
Denmark	9 years	x	B2	
Estonia	8 years	x	B1	
Finland	5 years		B1 (Finnish or Swedish)	x
France	5 years	x	B1	x
Germany	8 years	x	B1	x
Greece	7 years	x	A2	x
Hungary	8 years	x	B1	x
Ireland	5 out of 9 years	x		x
Italy	10 years	x		x
Luxembourg	7 years	x	A2/B1	x
Netherlands	5 years	x	B1	
Poland	10 years	x	B1	
Portugal	6 years	x	A2	x
Slovak Republic	8 years	x	test	x
Slovenia	10 years	x	B1	x
Spain	10 years	x	A2	x
Sweden	5 years	x		x
UK	5 years		B1	x
Iceland	7 years	x		x
Norway	7 years	x	x	
Switzerland	12 years		A2/B1	x
Turkey	5 years	x	test	x
Australia	4 years		B1	x
Canada	4 out of 6 years		A2	x
Japan	5 years	x	test	
New Zealand	5 years		test	x
USA	5 years		test	x

Source: Own collection of data from governmental websites.

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*Martina Burmann and Madhinee Valeyatheepillay*¹
Asylum Recognition Rates in the Top 5 EU Countries

An unprecedented number of 1.26 million² first-time asylum applications were registered in the EU28 countries in 2015. Although the latest figure in 2016 fell to about 1.20 million, the asylum claims remain at a high level. This high influx of asylum seekers was not dispersed equally across the EU 28 countries, with some countries taking in more than others. The unfair burden sharing also becomes evident when a broader range of economic indicators, such as population size, level of GDP and development spending are accounted for (Toshkov and de Haan, 2013). When considering the top five EU-28 countries in terms of absolute number of asylum applications from January 2015 to December 2016, the highest number of asylum applicants was registered in Germany at 1,164,070, followed by Italy, Hungary, Sweden and France (Figure 1).

As a standard procedure, the asylum claims are then processed to decide whether an individual qualifies for recognition in the destination country. Depending on the outcome of the decision, asylum applicants can be granted one of four different types of protection, namely refugee status, subsidiary protection according to the Asylum Qualification Directive, protection based on humanitarian grounds or temporary protection. The first type of protection, namely refugee protection, is granted based on the 1951 Geneva Convention, which stipulates that a refugee is a third-country national who, owing to a “well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group or political opinion,” is unable

or unwilling to return to his country (UNHCR, 2010). The second type of protection, subsidiary protection, is provided if asylum seekers do not qualify for refugee status but fear the risk of suffering from serious harm in their country of origin and cannot take up the protection of their country of origin due to that threat. The third type of protection, humanitarian protection, is based on humanitarian reasons under the national law concerning international protection by administrative or judicial bodies: for example, this may include ill health reasons or unaccompanied minors. Finally, temporary protection is “a procedure of exceptional character (...) in the event of a mass influx or imminent mass influx of displaced persons from third countries” especially if there is also “a risk that the asylum system will be unable to process this influx without adverse effects for its efficient operation, in the interests of the persons concerned and other persons requesting protection” (Eurostat, 2015).

The EU28 countries must comply with the 1951 Geneva Convention when granting asylum to refugees. Moreover, since 1999, the EU has aimed at establishing a Common European Asylum System (CEAS) to harmonise policies on qualification for refugee status or subsidiary protection, and on minimum procedures (Hatton, 2016). This article considers the four types of protection mentioned above, namely the refugee recognition rate based on the 1951 Geneva Convention and other positive decisions, including subsidiary, humanitarian and temporary protection for first-instance decisions from the five most important origin countries in the top five EU28 countries for 2015 and 2016.

REFUGEE RECOGNITION RATE

The refugee recognition rates in 2015 varied substantially by country of citizenship. In most of the five EU countries considered, asylum seekers from war-torn countries, such as Syria, Iraq and Afghanistan, have much higher chances of being recognised as a refugee than asylum seekers from Kosovo and Albania, countries which have recently been listed as safe countries of origin in some EU countries. This is consistent with the observation that origin-specific recognition rates vary depending on political oppression, interstate armed conflict, human rights violations and politicide (Neumayer, 2005).

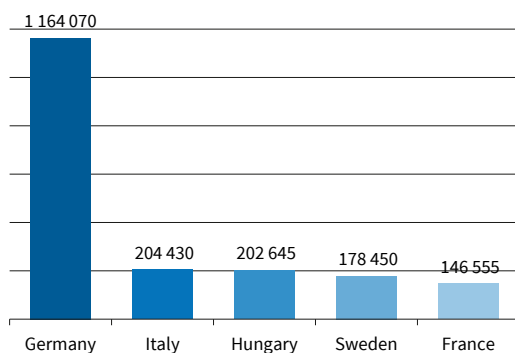
Figure 2 shows that the recognition rate for citizens of the same country of origin varies substantially between different European destination countries even though all EU countries abide by the Geneva Convention and the Common European Asylum System when it comes to determining who gets refugee status. While the majority of Syrian asylum seekers (97%) were deemed refugees according to the Geneva Convention in Germany in 2015, the refugee recognition rates for Syrians in Sweden and Hungary was only 10% and 6% respectively. Similar variations are also visible for the

¹ ifo Institute (both).

² The data from this article has been obtained from Eurostat.

Figure 1

Top 5 EU28 Countries with the Highest Number of First Time Asylum Applications
 January 2015 to December 2016



Source: Eurostat (2017b); own calculations.

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other origin countries considered in this report. When analyzing these differences in recognition rates across European countries more systematically, Toshkov and de Haan (2013) find that there is some evidence for convergence over time. Nevertheless, Figure 2 shows that large differences in recognition rates still prevail, which are not likely to be explained solely by systematic differences between applicants in different EU countries.

In 2016 a nearly similar trend emerged, with Syrians and Iraqis having the highest recognition rates across most of the five EU countries (Figure 3). Afghans had a lower recognition rate in 2016 as compared to 2015; in Germany for example, this is mostly due to a controversial debate led by the German government that part of the country is ruled to be safe enough for deportees to return to. In an attempt to reduce the number of asylum seekers from Afghanistan, Germany offers incentives for voluntary returns. According to the German Federal government, about 12,500 Afghans were required to leave as of November 2016.³ Nonetheless, the deportation mostly failed as 11,543 of the 12,500 Afghans obtained a temporary suspension of deportation due to serious illness or missing passports. Although from January to March 2015, Hungary had the second-highest number of asylum applicants in the EU after Germany at 32,810, the country decided to considerably reduce the number of asylum seekers.

³ For further detail, refer to Deutsche Presse Agentur (2016).

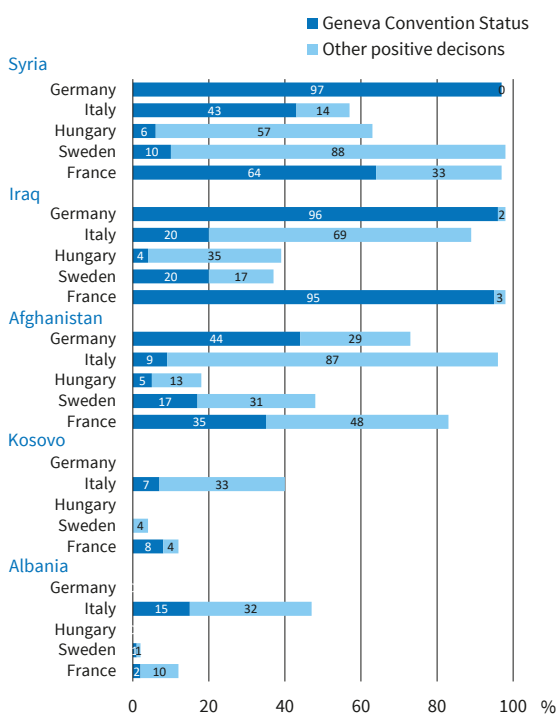
While the refugee recognition rate in Hungary was already low for all nationalities considered in 2015, it further decreased by about 50 percent for Afghans, Iraqis and Syrians in 2016. In response to the high influx of refugees, Hungary made legislative changes in their asylum laws to make the country less attractive to asylum seekers from entering their territory. Since September 2015, the country has rejected all asylum requests at their border and built a fence along the border with Serbia to deter asylum seekers from entering their territory. In a further attempt to significantly reduce asylum claims, the country announced that those who are denied entry may have to cover their own detention costs.

Refugee recognition rates have also evolved over time. While 97.4% of Syrians were recognised as refugees in Germany in 2015, this percentage fell to 57.2% in 2016 (Table 1). In March 2016, the Federal Office for Migration and Refugees (BAMF) changed its policy allowing most Syrians only subsidiary protection. While full refugees receive a three-year residence permit initially, subsidiary protection offers only a one-year residence permit that can be extended. The trend towards more subsidiary protection was also noticeable in France, Hungary and Sweden. Moreover, this trend was not only observed for Syrians but also for Iraqis and Afghans.

OTHER POSITIVE DECISIONS

Figure 2

Refugee Status and Other Positive Decisions, 2015



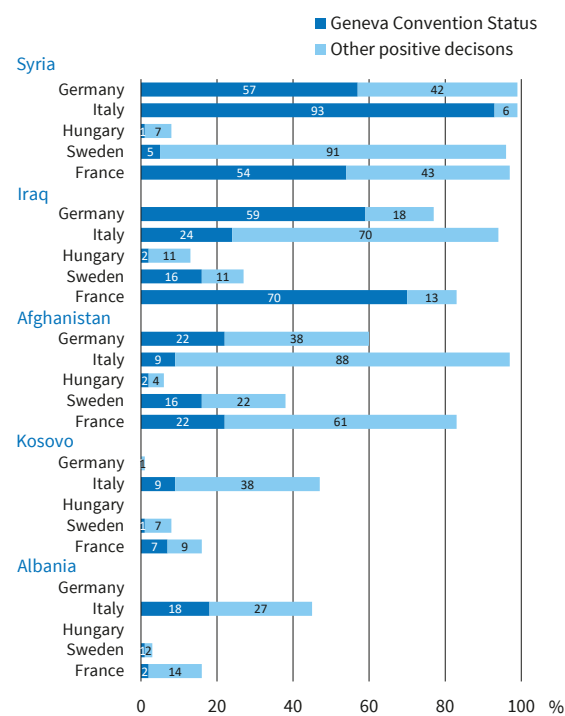
Note: Percentages present the share of Geneva Convention Status or other positive decisions in total decisions.

Source: Eurostat (2017a); authors' calculations.

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Figure 3

Refugee Status and Other Positive Decisions, 2016



Note: Percentages present the share of Geneva Convention Status or other positive decisions in total decisions.

Source: Eurostat (2017a); authors' calculations.

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Table 1

Refugee Recognition Rates in 2015 and 2016

	France		Germany		Hungary		Italy		Sweden	
	2015	2016	2015	2016	2015	2016	2015	2016	2015	2016
Afghanistan	34.9%	21.7%	43.8%	21.8%	5.5%	1.9%	8.9%	9.2%	17.1%	15.6%
Albania	1.9%	2.4%	0.0%	0.0%	0.0%	0.0%	14.9%	17.8%	0.6%	1.5%
Iraq	95.2%	69.6%	95.7%	58.6%	4.3%	1.8%	19.8%	24.2%	19.5%	16.0%
Kosovo	7.5%	6.7%	0.0%	0.0%	0.0%	0.0%	7.4%	8.6%	0.0%	1.1%
Syria	64.0%	54.0%	97.4%	57.2%	5.7%	0.5%	42.7%	92.8%	10.1%	5.5%

Source: Eurostat (2017); authors' calculations.

Other positive decisions include subsidiary protection, protection for humanitarian reasons and temporary protection. When considering the other positive decisions, the trend remains similar across the five EU28 countries with Syrians and Iraqis having the highest recognition rates among most origin countries considered (Figure 2 and 3). If other positive decisions and refugee status are aggregated, Syrians had a near 100 percent recognition rate in 2016 in most EU countries considered, with the exception of Hungary where the recognition rate was only 8 percent. Although the refugee recognition rate for Afghans experienced a drop in most destination countries, Italy, France and Germany have increased the other positive decisions attributed to them.

CONCLUSION

Despite the EU working towards CEAS, status determination procedures, such as time taken for examination of a claim and procedural guarantees provided to applicants, differ between member states. In general, the procedures are complex as well as lengthy. Hence, the different treatment of applicants in each country contributes to the variation in the recognition rate across the EU28 countries. The recast Asylum Procedures Directive, adopted in 2013, which aimed at harmonization of national procedures for granting and withdrawing international protection, has proven to be insufficient to address these problems.

The European Commission recently proposed completing and reforming the CEAS in an attempt to harmonise asylum recognition rates across the EU. The coming years will show how successful this policy is and if this, in turn, discourages secondary movements to other EU countries.

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Daniela Wech¹ Promoting Longer Working Lives in Europe

INTRODUCTION

In view of an ageing population, the statutory retirement age has been increased or is going to be increased in many European countries. However, as far as the sustainability of pension systems is concerned, the timing of the effective exit from the labour market is crucial. This often occurs quite a long time before individuals reach the statutory retirement age. Raising the effective retirement age is therefore of highest importance from a sustainability perspective. There are several ways to promote longer working lives. This article deals with incentives for hiring older workers, measures to promote the health and well-being of workers and partial retirement schemes as approaches to enabling people to work longer.

DEMOGRAPHIC CHALLENGES AND THE RETIREMENT AGE

In European countries, two demographic trends have developed in recent decades. Firstly, fertility rates have decreased significantly. While the average fertility rate in Europe was around 2.6 in 1960, it was only about 1.6 in 2013 (DICE Database 2017b, Eurofound 2016c). Secondly, life expectancy has increased substantially in Europe: in 2013, average life expectancy was almost 81 years – representing an increase of around eight years since the 1960s (Eurofound 2016c). The combination of these two demographic trends implies that the old-age dependency ratio – defined below as the ratio of people of retirement age (65 years and older) to people of working age (15 to 64 years old) expressed per 100 persons [of working age] (Eurostat 2017b) – has increased considerably. Since both trends are projected to continue for the decades ahead, the old-age dependency ratio will increase further in the future.

Figure 1 shows the historical development and future projection of the old-age dependency ratio in Europe. In 1960, the ratio was almost 15; at the beginning of the 1980s, it reached a value of around

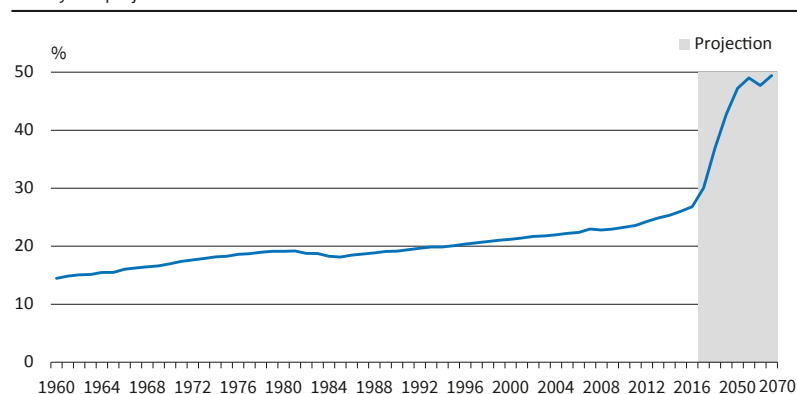
19. After slightly decreasing during the first half of the 1980s, the ratio constantly increased until 2007. It decreased marginally in 2008, before rising steadily to a value of almost 27 in 2016. The old-age dependency ratio is forecast to exceed 35 in 2030; in the very long run, it is even projected to converge to a value of 50. The substantial increase in the old-age dependency ratio has far-reaching implications for pension systems that are financed by current contributions to old-age insurance systems made by the working-age population. Since this channel of funding is very widespread in public pension systems in Europe, the demographic changes pose considerable challenges to the sustainability and adequacy of pension systems (Eurofound 2016a). An increase in the old-age dependency ratio means that there are fewer people of a working age to finance the old-age income of retirees. An old-age dependency ratio of almost 15 in 1960 implies that there were around seven people of working age per retiree.² A projected old-age dependency ratio of 50 in 2080 implies that the ratio of people of working age to retirees is projected to be only two to one.

There are two ways to maintain a certain level of old-age income: increasing contributions to pension systems and raising the retirement age. Since the demographic changes are of a significant magnitude and since there are also reasonable upper limits for pension contributions, an increase in the retirement age is the focus of policymakers. In many European countries, the statutory retirement age has already been increased or is going to be increased in the near future (DICE Database 2014, European Commission 2015). However, the aspect that is relevant with regard to the sustainability of pension systems is not the statutory retirement age, but the effective retirement age. In Europe, the average age of exit from the labour market is significantly below the statutory retirement age (DICE Database 2017a, European Commission 2015).

² The inverse old-age dependency ratio is defined as 100 divided by the old-age dependency ratio.

Figure 1

Old-Age Dependency Ratio in Europe
History and projection



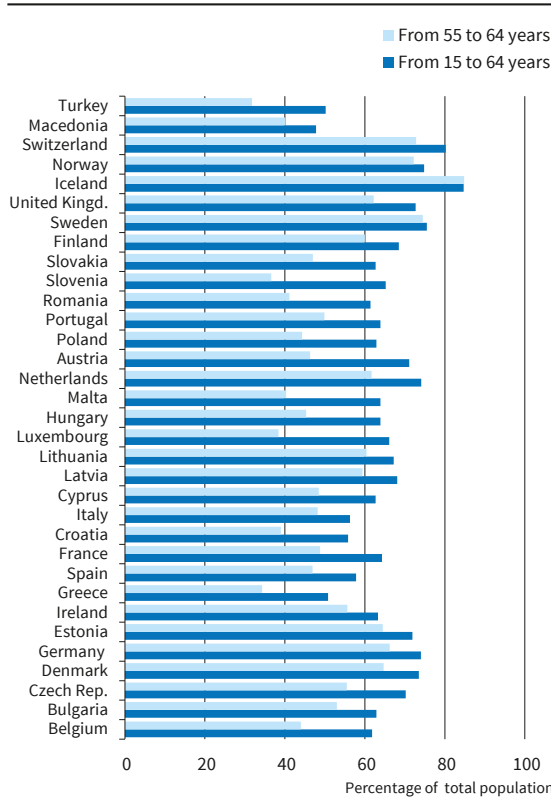
Source: Author's calculation based on DICE Database (2017b).

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Figure 2

Employment Rates by Age Group, 2015



Source: Eurostat (2017).

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LABOUR MARKET PARTICIPATION OF OLDER WORKERS

Figure 2 shows a comparison between the employment rate of the total working-age population (15 to 64 years) and that of the older working-age population aged between 55 and 64 years. It becomes obvious that in most European countries, the labour force participation of older people is considerably lower than that of the total population of working age in 2015. The difference was largest in Slovenia, where it was over 28 percentage points; it was also particularly large in Luxembourg, Austria, Malta and Romania with values of over 20 percentage points. On average, the difference between the two employment rates amounted to around 13 percentage points. Iceland was the only country in which the employment rate of those aged between 55 and 64 years was marginally higher than that of the total working-age population (+0.1 percentage points). In Sweden, the labour force participation rate of older people was only one percentage point lower than that of the total population of working age.

Figure 3 shows the main reasons retirees indicated in a survey conducted in 2012 for not participating in the labour market any more (Eurostat 2012). It becomes evident that a very large number of people did not retire because they had reached the maximum retirement age or eligibility for a pension. On average across

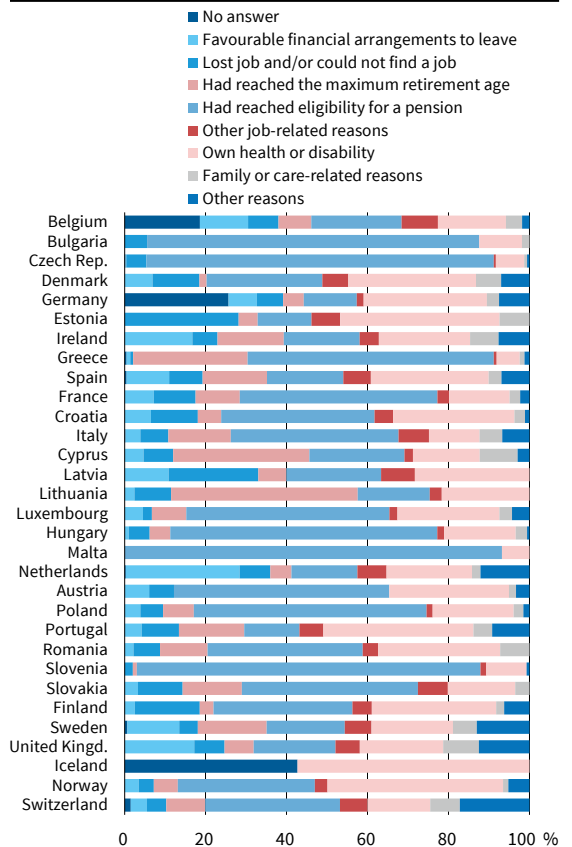
European countries, eight percent of respondents reported having lost their job and/or having been unable to find a job. Over 22 percent of survey participants reported that their own health or disability were crucial to their exit from the labour market. This share was even larger than 30 percent in several countries (for example, in Portugal, Norway and Estonia).

PROMOTING RECRUITMENT OF OLDER WORKERS

Given that a significant share of people stated that their retirement was due to the fact that they had lost their job and/or were not able to find a job, actively promoting the hiring of older employees is an important measure to raise the effective retirement age in Europe. Incentives for companies to employ older workers include financial subsidies like a reduction in social security contributions (Eurofound 2016c). In Poland, for example, firms that hire people aged 50 years or older benefit from reduced social security contributions; they also have to pay sickness benefits for a shorter period of time (Polish Ministry of Family, Labour and Social Policy 2008). In Spain, companies hiring workers aged above 45 years have to pay lower social security contributions. In Greece, the employment of older people is also promoted, among other things by setting disincentives for dismissing older employees.

Figure 3

Main Reason Why Pension-Recipients Exit the Labour Market, 2012



Source: Eurostat (2012).

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Companies that make employees aged between 55 and 64 years redundant have to pay a share of their social security contributions for a certain time period after their dismissal. Apart from financial incentives, there are also other support measures in place in several countries. In Germany, unemployed workers above the age of 50 are offered specific support services to help them to successfully reintegrate into the labour market. Spain has introduced similar support measures: people above the age of 45 years are given priority access to job training programmes. In addition to providing financial incentives to companies and support measures to older workers, a number of countries (like Germany, Spain and the Netherlands) have started to promote public consciousness of the work values of older employees and the contribution that their work makes to society. These strategies include various information campaigns targeting employers and the general public (Eurofound 2016c).

PROMOTING HEALTH AND WELL-BEING OF WORKERS

The percentage of respondents who reported retiring because they had lost their job and/or were not able to find a job was much lower than the share of those individuals who attributed their exit from the labour market to their own health or disability (eight percent compared to 22 percent, see the section on the labour market participation of older workers). For this reason, it is of the highest importance to create working conditions and a work environment that enable people to work longer. While in general, the number of work accidents has been reduced due to an improvement in occupational safety in Europe in recent decades, musculoskeletal and psychosocial risks have increased (Eurofound 2016c). In order to tackle these risks, several risk prevention measures have been implemented in various countries. In Germany, for example, companies have to conduct a risk assessment that covers physical as well as psychological risks. In Belgium, companies have to conceive an annual plan for addressing workplace adaptation and risk control measures. Greece is another example of a country in which risk assessments and prevention measures are obligatory. Several countries have also introduced measures to promote the gradual reintegration of workers who have been sick for a longer time period. In Germany, employers are obliged to offer employees who have been sick for over six weeks the opportunity to discuss measures to facilitate their reintegration within the framework of an occupational rehabilitation management (Bundesministerium für Arbeit und Soziales 2016). Adaptation of work to employees returning to work after a longer period of sickness is stipulated in the Netherlands. In some countries, incentives are set to promote measures to improve working conditions of older employees. In Belgium, for example, stopping older staff from working night shifts is supported. There are also coun-

tries (like Finland and the Netherlands) in which programmes have been introduced to tackle stress and depression at work (Eurofound 2016c). Another aspect to take into account when discussing ways to promote the health and well-being of workers is the reconciliation of working life and private life. Allowing employees to better reconcile working and non-working life has positive effects on their health and well-being, which contributes to a later exit from the labour market. More flexible working time arrangements have been introduced in many countries in recent years (Eurofound 2016c).

PARTIAL RETIREMENT

Introducing partial retirement schemes is another way of promoting longer working lives (Eurofound 2016a). According to a survey conducted in all EU Member States in 2011, almost two thirds of respondents considered partial retirement more appealing than full retirement (Eurobarometer 2012). Findings from the Sixth European Working Conditions Survey indicate that over a quarter of workers aged under 55 years did not have the feeling that they would be able to continue doing their current job until the age of 60 (Eurofound 2016b). If people are not able or willing to work full time until they reach the statutory pension age, partial retirement can contribute to a later exit of workers from the labour market; and thus to the increased sustainability of pension systems. If older employees work a reduced number of hours instead of fully retiring, this can also be beneficial for employers, as the knowledge of older staff remains in the company and can be transferred to younger workers. Partial retirement schemes have been introduced in around half of all EU Member States in recent times (DICE Database 2017c, Eurofound 2016a). The schemes are implemented at the national level, at the sectoral level or at both levels. Most countries have partial retirement schemes in place either at the national level (for example, Austria, Finland, Italy and Spain) or at both the national and the sectoral level (for example, Denmark, France, Germany and Sweden); the Netherlands and the United Kingdom are the only two countries in which schemes have only been introduced at the sectoral level. There are three different ways of financing partial retirement schemes: public funds, employer funds and employee funds. Recently there has been a trend towards reducing or abolishing public funding. In Austria, entitlement criteria have become stricter; in Germany, public funds have been completely removed. In Finland, Norway and Sweden, publicly funded national schemes have finally been abolished after periods of tightening entitlement criteria. Applicants for partial retirement usually must have reached a minimum age or have contributed to the pension system for a minimum period of years. In France, for example, employees in the chemical industry have to be at least 55 years old, and in Italy, contributions need to have been made for a period of 42.5 years for

men and 41.5 years for women in order to be entitled to participate in a partial retirement scheme. In Spain, a combination of these two eligibility criteria is necessary. In most countries, the minimum age has been increased in recent times (Eurofound 2016a). As far as the reduction of working time is concerned, there is often a minimum and a maximum amount. In the French national scheme, for example, the working time of partial retirees ranges between 40 and 80 percent of that of full-time employees; in the Spanish national scheme, it ranges between 25 and 50 percent. There are also schemes in which partial retirees have to work a fixed percentage of the full working time (this share is 50 percent in the German national scheme, for example).

CONCLUSION

Promoting longer working lives is a challenge to all European countries, although the labour market participation of the older working-age population varies considerably across countries (see Figure 2). As population ageing is projected to continue all across Europe, the issue of maintaining the sustainability of pension systems will become even more pressing in the future. Various measures to raise the effective retirement age have been implemented so far in many European countries; it remains to be seen whether they are successful at promoting a later exit from the labour market.

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Carla Rhode¹ An OECD Framework for Financing Democracy

“Money is a double edged sword” (OECD 2016). While political finance enables political participation and facilitates democratic competition, it can become a means for undue influence and policy capture, ultimately undermining the government. Therefore, although money is a necessary component of the overall vibrancy of the political sphere, it is one of the greatest threats for a functioning democracy. In a number of countries, the alarm that political finance is growing from mere support into powerful influence is deeply embedded in the society’s perception of governance and policy making. Accordingly, survey results from the 2013 and 2015 Edelman Trust Barometer find that 52% of respondents distrust the government (OECD 2016). Since confidence in the government is particularly crucial for the realization of difficult policies and the current context of economic recovery requires numerous unpopular choices, restoring trust is at the forefront of the government’s agenda (OECD 2014). To do so, the fine dynamic of political finance must be understood and its regulations optimized.

In an attempt to enhance the regulatory structure, the OECD developed a four-pillar *Framework for Financing Democracy* based on an analysis of selected OECD countries between 2007 and 2015. The framework suggests targeting four main objectives in order to reform political finance structures, namely: promoting a level playing field, ensuring transparency and accountability, fostering a culture of integrity, and ensuring compliance and review (OECD 2016). We will present a closer look at the aim of ensuring a level playing field, since an uneven playing field has been identified as a key inhibitor of democratic competition, and a central component of contemporary authoritarianism (Levitsky and Way 2010).

PROMOTING A LEVEL PLAYING FIELD

To foster a level playing field among parties and candidates, the framework suggests four measures, with two directed at political supporters, and two at political parties and candidates themselves. These four measures and their remaining complications are introduced in Table 1 below.

BALANCING PUBLIC FUNDING

Financial support for political parties and candidates is either of public or of private nature. Historically, in the old democracies of Europe, political funding was traditionally left to private initiative. However, as a result of recent cases of political capture and undue influence, a number of democracies have shown tendencies towards state funding for political activities (Hamilton 2009). Since state-funded democracies are arguably less prone to policy capture, increasing the share of public to private support potentially helps to level the electoral playing field. The OECD’s comparative analysis shows that in over 80% of the studied countries, most of the financial support in politics comes from public funds, with Greece and Turkey having the highest public funding share of 90% (OECD 2016).

In order to optimize the regulatory structures surrounding public funding, three important features must be considered, namely the eligibility threshold,

Table 1:
Framework on Financing Democracy – Objectives, Policy Options, and Complications

Overall Objective	Policy Options and Remaining Complications
Promoting a Level Playing Field	Balancing direct and indirect public contributions <i>Remaining complications include</i> 1) determining the eligibility threshold, and 2) determining the allocation criteria.
	Framing private funding <i>Remaining complications include</i> 1) preventing creative circumvention of regulations, and 2) addressing the increasing complexities due to globalization.
	Applying spending limits <i>Remaining complications include</i> 1) determining the limit, and 2) ensuring that challengers are not at a disadvantage.
	Limiting privileged access to state resources <i>Remaining complications include</i> 1) the undetected illicit use of state resources by incumbents
Ensuring Transparency and Accountability	Requiring disclosure: comprehensive and timely reporting.
	Enabling scrutiny: timely, reliable and accessible reports.
Fostering a Culture of Integrity	Applying the integrity framework in the public sector: codes of conduct, disclosure provisions, and whistleblower protection.
	Promoting standards of professionalism, integrity, and transparency in private donors: appropriate accounting practices, and a code of conduct.
Ensuring Compliance and Review	Assuring independent and efficient oversight: resources, methodologies, and authorities.
	Applying dissuasive and enforceable sanctions: confiscation, fines, and criminal charges.
	Regularly appraising the system: period review, involvement of stakeholders, identifying mitigation strategies. Supporting political parties: helping to comply with regulations, and better understand political finance.

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Source: OECD Report Financing Democracy (2016); authors’ analysis.

the allocation criterion, and the proportion of direct to indirect public funds. To determine the eligibility threshold, 76% of OECD countries use previous party performance as an indicator (OECD 2016). The exact threshold varies among countries, with Germany having a threshold of 0.5%, Turkey having a threshold of 7% (OECD 2016), and the worldwide average being approximately 3.5% (International Institute for Democracy and Electoral Assistance 2014). Nonetheless, the general consensus is that the minimum level establishing eligibility for public funding should be below the electoral threshold, such that new and smaller parties are able to enter the political arena.

Once eligibility has been determined, the allocation of public funding occurs to a large extent based on ‘equal access’ where an equal amount is distributed to all parties, and ‘proportional access’ where an amount is distributed based on past election performance. In isolation, both methods present drawbacks, since mere equal distribution could cause a proliferation of political parties, and mere proportional distribution may result in a replication of past results (OECD 2016). As a result, public funding is commonly determined by a combination of an equal sum distributed to all eligible parties, and a variable sum distributed based on previous electoral performance.

Once eligibility and allocation have been established, public funding can occur both directly and indirectly depending on the form in which public resources are made available. Direct public funding is provided by all OECD countries with the exception of Switzerland, usually in the form of money via bank transfers (The Electoral Knowledge Network 2012). Indirect public funding refers to resources with a monetary value (The Electoral Knowledge Network 2012) which can take a variety of forms, including tax reliefs implemented by 40% of OECD countries (OECD 2016) and free access to public goods and services. For example, political parties in Portugal and the United States are exempt from the income tax, while in Belgium they are provided free advertisement space for campaign posters.

In addition to allocating funds such that they promote a level playing field, earmarking is used to confirm that targeted financial resources are used in accordance with their aim. Earmarking occurs in approximately 43% of OECD countries and entails general usages such as party and campaign activities as well as more specific and meaningful expenditures (OECD 2016). Since a study conducted by UN Women in 2013 indicated that over 80% of females identify access to funding as one of their biggest

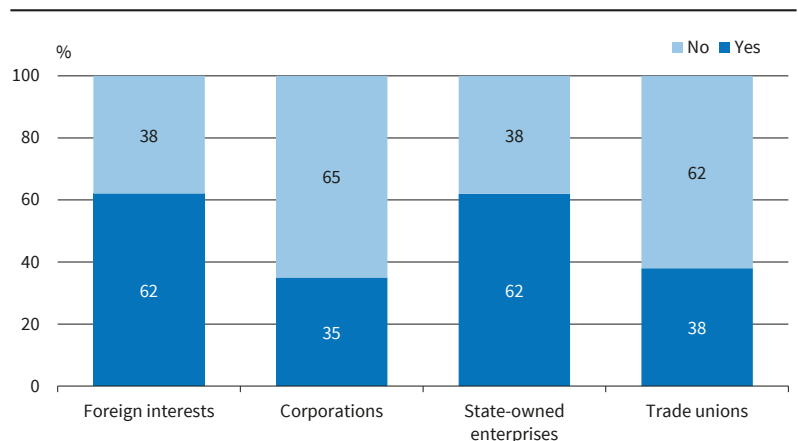
challenges to enter the political sphere, earmarking practices have been used to focus on gender barriers by distributing public funding such that it enforces electoral quotas and promotes the nomination of female candidates (Ballington and Kahane 2014). This can be carried out either via incentive structures: providing additional funding if parties meet such criteria, or via penalty structures: reducing public funding if parties fail to fulfil the conditions (Ohman 2012). In France for example, the maximum allowed difference between the number of male and female candidates in a party is 2%, in Portugal at least 33% of candidates must be female, and in Ireland at least 30% (OECD 2016). In the case of non-compliance, France, Portugal and Ireland implement a penalty in the form of losing a share of public funding, namely a variable portion in France, 25-50% in Portugal, and 50% in Ireland (OECD 2016). Alternatively, Croatia and Georgia implement incentive structures providing additional public funding if a given quota is met. However, research by [Magnus] Ohman (2012) has shown that incentive and penalty structures have a different impact on parties depending on their financial independence and size. Larger and better-funded parties can afford to give up on allocated public resources or forfeit additional funds, and are thus more difficult to regulate. Serbia, for example, promotes female participation by rejecting candidate lists that do not meet the target quota requirements (OECD 2016). However, even this rule becomes misapplied if parties place women in unwinnable positions simply to meet the target quotas.

FRAMING PRIVATE FUNDING

Private funding is recognized as a fundamental right of citizens, an expression of their freedom of speech, and a means of showing support for a political party or candidate. However, if inadequately regulated, it can be misused to promote private interests and potentially divert policies away from public priorities. Especially in

Figure 1

Types of Banned Private Contributions in OECD Countries



Source: OECD (2016); authors' calculations.

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light of the extortionate costs of running, the special interests of financially able individuals are given too much weight. Furthermore, a concern that arises is not only the point at which “money stops being speech and starts becoming power”, but whose money, and thus whose speech should influence the domestic political debate (Weinberg 2012). Therefore, countries have introduced bans and limits on specific sources of private funding including foreign individuals, corporations, state owned enterprises and trade unions.

Placing a limit on the amount of a single contribution is challenging, since a limit which is too high has only little impact, and a limit which is too low invites creative circumvention of the regulation (OECD 2016). While the administration of placing a ban is arguably simpler, the impact is comparable to that of a low limit. Thus, it invites artistic evasions and hidden forms of finance, leaving it hard for enforcement to be effective. Membership fees are one way to conceal donations, for example. They are particularly common in Korea where in 2015 they amounted to 26% of total party income, on average (OECD 2016). Since political parties in Korea must only account for the sum of membership fees, regulatory bodies are unable to detect whether certain members paid unconventionally large fees to hide private donations. Figure 1 shows the share of OECD countries that ban specific types of private contributions.

Donations from foreign individuals may steer regional politics towards foreign interests, reducing the responsiveness of the parties towards their constituents and potentially endangering the country’s sovereignty. While the majority of OECD countries (62% as seen in Figure 1) ban foreign private funds, the exact definition of ‘foreign’ varies between countries. In Mexico, a Mexican citizen may not make donations while living abroad; the United Kingdom permits British citizens living overseas to contribute, as long as they are registered to vote; and in Germany a donation is categorized as ‘foreign’ if it originates from outside the European Union (OECD 2016).

Funding from corporations can lead to undue influence, especially if it makes up a significant share of overall political funding. In Brazil, private funding from corporations corresponds to 75% of overall campaign expenditure, with the 20 largest donors (of 20,000 total corporate donors) contributing more than 30%. Since a very concentrated group of firms donate a substantial amount, Claessens, Feijen, and Laeven (2008) investigate whether signs of political influence can be observed. They find that the dominant contributing firms substantially increased their bank financing, indicating that access to loans and other forms of bank finance present an important channel through which political connections operate. The authors estimate that the economic cost of this rent seeking totals approximately 0.2% of Brazil’s GDP per annum.

Donations from corporations have become more and more complex in the face of globalization. Firms are increasingly connected internationally through

mergers, contracts, and partnerships, such that foreign firms may influence domestic politics through their domestic subsidiary companies (Weinberg 2012). This was seen during the US presidential elections in 2012, where non-US companies circumvented the foreign funding restrictions by using their US subsidiary firms and US employees to donate. The exact numbers are difficult to trace, however a UK defense contractor, the Swiss bank UBS, and the Belgian beer company InBev donated approximately USD 804,960 each (OECD 2016). While donations via subsidiary daughter firms are legally prohibited, these indirect channels of influence are virtually impossible to monitor, and whether a domestic firm is acting independently or under influence from its foreign mother firm is difficult to verify.

APPLYING SPENDING LIMITS

The explosive growth in campaign expenditure has led to spending races between parties, threatening political equality (Balise 2016). In theory, spending limits reduce the overall cost of elections, prevent a spending race, and promote a level playing field (OECD 2016). However, opponents argue that campaign expenditure falls under the fundamental freedom of free speech, and limitations in spending equate to a limitation of political expression (OECD 2016). Furthermore, the Supreme Court in the United States ruled against spending limits based on the argument that challengers require more resources than incumbents, and spending limits establish only a formal equality while actually putting challengers at a relative disadvantage, and thus ultimately limiting political competition (OECD 2016). Samuels (2001) argues that whether spending limits create relative disadvantages depends on the general advantage of an incumbent in terms of reputation and voter base. He suggests that if the general advantage is strong as in the US, spending limits may be detrimental to the chances of the challenger. However, if the general advantage is low as in Brazil, spending limits may not have a differential effect on incumbent and challenger.

Although spending limits remain a controversial topic, the majority of OECD countries (65%) have introduced such limits (OECD 2016). The exact level at which spending limits should be placed remains context-specific among countries. Korea designs the limit in accordance with the socio-economic dynamics of each election, taking the voter population, number of constituencies, and inflation rate into consideration. While Korea limits total expenditure, Brazil, Chile, and Mexico, for example, place spending limits on particular expenditures, such as TV advertisements.

LIMITING ABUSE OF STATE RESOURCES

To ensure a level playing field between incumbent and challenger, incumbents must be restricted in their privileged access to state resources. Abusing government

resources to promote re-election occurs, for example, when state-offices are used for party meetings, official vehicles become means of transportation during campaigning, and advertisement materials are printed in government facilities. Given the prevalence of such incidents in the past, the abuse of state resources is one of the most effectively addressed risks involved in political financing, with 82% of OECD countries banning the illicit usage of state resources (OECD 2016). While most countries oversee the general adherence to the ban, Japan specifically focuses on advertisement expenditure. During election periods, all advertisements are monitored in terms of number and length, including print, radio, and television ads (OECD 2016). The allocation is equalized for all running parties to ensure that no abuse of state resources occurs, and it thus establishes a level playing field amongst them.

Researchers have voiced the concern that limiting the abuse of state resources may create a double advantage for incumbents if it coincides with spending limits. First, incumbents can circumvent the ban on using state resources if they remain undetected as they are close to the source, while challengers have no access to the resources (Pinto-Duschinsky 2013). Second, incumbents can hide campaign expenditure in their legislative duties to circumvent spending limits, while challengers are unable to spend more since they have no access to additional resources (Pinto-Duschinsky 2013).

TOO MUCH LAW, TOO LITTLE ENFORCEMENT

While many countries have reformed their political finance structures, the lack of compliance and enforcement remains a prevalent issue. In isolation, political finance regulations remain relatively ineffective (OECD 2016), their potential being undermined by a lack of political will and capacity (Balise 2016). In response, the OECD framework presents three additional objectives to be addressed simultaneously to the level playing field, namely: transparency and accountability, a culture of integrity, and compliance and review mechanisms.

Transparency and accountability require disclosures in the form of comprehensive and timely reporting. However, since these reports have been described as “works of fiction” in France, “just the tip of the iceberg” in Japan, and “inventions of breathtaking scale” in the United Kingdom (Pinto-Duschinsky 2013), they must coincide with independent and reliable systems of scrutiny. Lord Bew (2013) said that in order to fundamentally affect the system, “changes must be incorporated into the culture of the organization, driven by leadership and positive example”. To foster a culture of integrity, the OECD framework suggests addressing public and private donors separately by introducing codes of conduct, disclosure provisions, and whistleblower protection in the public sector, and by establishing self-regulation and appropriate accounting

practices in the private sector. While these suggestions aim to create incentive mechanisms to promote compliance, the enforcement must be further promoted. The OECD framework suggests an independent and effective oversight body, dissuasive and enforceable sanctions, a constant appraisal of the system, and the provision of support to help political parties comply with the regulations and better understand political finance.

In conclusion, there is no one-size-fits-all model, and differences between countries must be incorporated into the design of a regulatory framework. However, regardless of structure, the institutions responsible for enforcing political finance regulations must have a clear mandate, legal power, and the capacity to conduct effective oversight and enforce sanctions. In an attempt to further develop the political finance structures, countries would potentially benefit from highlighting and sharing effective practices to identify variations of policies and practices that effectively safeguard the integrity of the political process (OECD 2016). Overall, establishing a framework to address the paradox within public funding is a key lever for restoring society’s trust in government, and for forming a foundation for inclusive growth (OECD 2016). As stated by Lord Bew (2013), “society can expect better outcomes when decisions are made fairly and on merit, and not influenced by alternate interests”.

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New at DICE Database

RECENT ENTRIES TO THE DICE DATABASE

In the second quarter of 2017, the DICE Database received a number of new entries, consisting partly of updates and partly of new topics. The list below features some of the topics covered by these new entries:

- Global Natural Resource Reserves
- World Crude Oil Production
- Wind and Solar Electricity Net Generation
- World Happiness Ranking
- Incarcerated Persons
- Fiscal Balances
- General Government Gross Public Debt
- Gender Inequality Index
- Minimum Wage Indicators
- Fertility Rate, Life Expectancy, and Old-Age Dependency
- Exit from Labour Market, Life Expectancy, and Statutory Retirement Age
- UN E-Government Development Index

The interactive graphics application [Visual Storytelling](#) has been further expanded.

Forthcoming Conferences

CESifo Area Conference on the Economics of Education

1-2 September 2017, Munich

The 2017 CESifo Area Conference on the Economics of Education, organised by Eric A. Hanushek (Stanford University, Area Director) and Ludger Woessmann (ifo Institute), aims to bring together official CESifo network members to discuss their recent research and to encourage broader interaction, particularly on both sides of the Atlantic. All CESifo research network members are invited to submit their papers, which may deal with any topic within the broad domain of the Economics of Education. The Jacobs Foundation Lecture will be delivered by Armin Falk (Behaviour and Inequality Research Institute, Bonn).

Scientific organiser(s): Professor Eric A. Hanushek, Professor Dr. Ludger Woessmann

7th ifo Dresden Workshop on Regional Economics

28-29 September 2017, Dresden

The ifo Institute, Dresden Branch, and the Technische Universität Braunschweig are pleased to announce the 7th ifo Dresden Workshop on Regional Economics. The workshop aims to help young scientists to network and to promote the exchange of their latest research results across a range of regional economics, persistency in regional inequality, regional structural change

and place-based policies. Policy relevant contributions, both theoretical and applied, are very welcome. We particularly encourage PhD students and post-doctoral researchers to submit their latest research.

Scientific organiser(s): Christian Ochsner, Katharina Heisig, Julia Sonnenburg

CESifo Area Conference on Energy and Climate Economics

13-14 October 2017, Munich

We invite all CESifo research network members to submit papers dealing with any topic within the field of Energy and Climate Economics. The keynote lecture will be delivered by Carolyn Fischer (Resources for the Future).

Scientific organiser(s): Professor Michael Olaf Hoel

CESifo Area Conference on Behavioural Economics

27-28 October 2017, Munich

The seventh CESifo Area Conference of the Behavioural Economics will be organised jointly with the Collaborative Research Center "Rationality and Competition". All CESifo Research Network members and all CRC members are invited to submit their papers for consideration. The keynote lectures will be delivered by Roland Benabou (Princeton University) and Andrew Caplin (New York University).

Scientific organiser(s): Professor Klaus Schmidt, Professor Dr. Ernst Fehr

New Books on Institutions

Slippery Slope: Brexit and Europe's Troubled Future

Giles Merritt

Oxford University Press, 2017

The European Union Illuminated: Its Nature, Importance and Future

Ali M. El-Agraa

Palgrave Macmillan, 2017

Brexit: Why Britain Voted to Leave the European Union

Harold D. Clarke, Matthew Goodwin and Paul Whiteley

Cambridge University Press, 2017