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Intergenerational mobility A dream deferred?



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Intergenerational mobility A dream deferred?

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Abstract

This report reviews evidence on intergenerational mobility, which measures the extent to which children's labour market outcomes are independent of the outcomes of their parents. The report first reviews evidence on descriptive questions, documenting that mobility levels vary considerably across countries, and even across areas within countries. Mobility appears to be substantially lower in low-income than in high-income countries, but even among countries of similar income levels large differences can be seen. Moreover, in countries or areas with larger income disparities, children's outcomes tend to depend more strongly on parental outcomes. A key focus is on the underlying drivers of intergenerational mobility: what factors and policies contribute to higher mobility? Recent research has shown that skill gaps tend to open up at a young age and then magnify through childhood. Keeping skill gaps small through childhood therefore appears crucial; for example by promoting maternal and infant health, providing widespread access to high-quality child care, and keeping the schooling system comprehensive and integrated. But the labour market is equally important, as it determines the consequences of these childhood gaps in terms of incomes and standard of living. Recent research shows that mobility differences between countries are partly due to differences in skill inequalities but that at least as much or even more is due to how labour markets *reward* skills and redistribute incomes. Reducing earnings inequalities and fostering employment for all may therefore also reduce intergenerational inequalities. However, *causal* evidence on specific labour-market factors and policies, and how they affect intergenerational mobility, is unfortunately scarce. Existing evidence points to policies that grow the middle class and provide a widespread and more equal access to good paying jobs and attractive employers. To achieve the latter, decreasing the importance of family and social networks and combatting discrimination on the labour market appear crucial.

Preface

In August 2017, the Director-General of the International Labour Organization convened an independent Global Commission on the Future of Work. The Commission will produce an independent report on how to achieve a future of work that provides decent and sustainable work opportunities for all. This report will be submitted to the centenary session of the International Labour Conference in 2019.

The Future of Work Research Paper Series aims to support the work of the Commission by publishing in-depth, original studies on specific topics of interest to the Commission, ranging from explorations of artificial intelligence and the platform economy to lifelong learning and universal social protection. Each paper provides a critical analysis of current and future developments and raises important questions about how to ensure a future of inclusive development with decent work at its heart.

This working paper is a state-of-the-art review of the complex characteristics of intergenerational mobility. It demonstrates that the advantages enjoyed by parents with respect to education, income and occupational class have a significant influence on their children's labour market experience. There are important interaction effects; for example, while a parent's level of education may matter, the associated income effect is blunted in countries with an overall low level of wage inequality. Also, women tend to have experienced greater class mobility than men, although occupational sex segregation remains a barrier to many women. And while many countries have enjoyed increasing class mobility, the gains are overshadowed by rising inequality in some countries and a failure to share income growth across all parts of the distribution.

The striking reappearance of the so-called Great Gatsby curve – showing a negative correlation (likely a circular dynamic) between inequality and income (or education) mobility – suggests a shift away from the golden age of mobility of the mid-20th century back to the era of F. Scott Fitzgerald.

The recommended policy interventions to improve the mobility-equality cycle is backed by a critical review of the evidence. The paper calls for major investments in key areas of foundational public infrastructure, including accessible childcare and properly resourced free schooling. It also argues for better wage returns to those jobs found at the bottom of the skill ladder for those with basic education. Moreover, decent social protection, especially in developing countries, can prevent parents pulling their children out of school to top up family income, and union membership can further improve prospects for intergenerational mobility. Overall, this paper makes a significant contribution to future of work debates both within the Global Commission and beyond. We look forward to further research on this issue.

A final note about Martin Nybom. He is a researcher and associate professor at the Institute for Evaluation of Labour Market and Education Policy and an associated researcher at the Swedish Institute for Social Research at Stockholm University. He works in the field of labour economics, with a particular interest in topics such as inequality, intergenerational mobility, and the labour market effects of skills and education.

Damian Grimshaw
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1. Introduction

How persistent are differences in socio-economic status across generations? The degree of social mobility across generations is central for the understanding of economic inequality. It determines how living standards evolve across generations and how children from more disadvantaged backgrounds fare as compared to their more advantaged peers. The extent of overall mobility in a society obviously matters on the individual scale; for example, as an indicator of the extent to which children are able to succeed regardless of the conditions in which they were born. But mobility can also matter on a broader scale, as it interacts with overall inequality, economic and social development, and political change. Economists have theorized that, in societies with credit constraints or other barriers affecting especially the poor, social immobility and economic stagnation may reinforce each other in a negative cycle (e.g. Galor and Zeira, 1993; Hassler and Rodriguez Mora, 2000; Erikson and Goldthorpe, 1992). Low mobility can be both a cause and a consequence of higher inequality, and may have adverse consequences for social cohesion and political stability. Greater mobility, on the other hand, is often associated with a more inclusive pattern of development.

This report reviews evidence on the extent of intergenerational mobility (or inversely, persistence) in countries across the world and how it has evolved over time, and reviews key factors that contribute to higher mobility.¹ The focus is on mobility as it relates to the world of work and thus on outcomes related to the labour market. The topic of intergenerational mobility is broad and by nature interdisciplinary. Therefore, the report draws on evidence from various different disciplines, although leaning more towards sociology and, above all, economics.

We first need to clarify what we mean by intergenerational mobility and how we can measure it. First, there is an important distinction between absolute and relative mobility. *Absolute mobility* measures how well *all* children do compared to their parents, and is thus closely related to overall economic growth and structural change (e.g. in the occupational or class structure). Absolute mobility can be measured by looking at the share of children attaining higher living standards as adults than their parents did (e.g. Chetty et al., 2017). *Relative mobility* (often called “social fluidity” in sociology) instead measures to what extent a person’s economic status is independent from his or her parents’ economic status, abstracting from overall economic development and structural change.² Most existing research concerns the measurement and determinants of *relative* mobility, which will therefore also be the main focus in this paper. A brief discussion of country differences and time trends in absolute mobility will however also be provided.

Second, we can measure intergenerational mobility in terms of several different outcomes; for example, income or earnings, education, occupation, wealth, or health status. Most economists analyse mobility in terms of income or earnings. Such measures follow an inherent scale, are straightforward to compare across time and between countries, and are closely connected to consumption opportunities and living standards. A less attractive feature is that incomes are difficult to measure properly and that reliable panel data is lacking for many countries and time periods. Income has

¹ For previous reviews, see for example Björklund and Jäntti (2009), Black and Devereux (2011), and Corak (2013).

² Relative (intergenerational) mobility is sometimes associated with (in)equality of opportunity. Studies on (in)equality of opportunity, however, form a separate and more normative research literature that explicitly measures the extent to which people’s life outcomes are affected by circumstances they are born into and that are thus “out of their control” (e.g. Ferreira and Gignoux, 2011). While intergenerational measures lack a normative motivation, they are nevertheless the foundation for much causal and policy-relevant work.

traditionally also been a poor measure of women's socio-economic status due to their lower levels of employment. It is also difficult to study income mobility of young adults and thus of more recent cohorts.³

On the other hand, educational outcomes can often be observed for younger adults and thus more recent cohorts, and are comparable across genders. Education data on parents and their children are also available for many different countries, enabling researchers to study mobility also across low- and middle-income countries. However, some caution is necessary when interpreting such results since educational institutions, and the meaning of a degree or a year of education, differ across the world.

Occupational outcomes have long been the basis of mobility analysis in sociology and economic history, and can shed light on some of the non-monetary aspects of peoples' work situations. Additionally, as occupations have long been recorded in censuses, researchers have been able to document mobility trends across very long time periods. Occupational measures share some of the features of educational measures. They vary less over the lifecycle than incomes, so even point-in-time observations can be informative about an individual's long-term status. But they also lack an inherent scale,⁴ and the status or living standard associated with a given occupation can differ across time and countries, making direct comparisons difficult. For example, how does the status of a farmer or teacher today compare to in the early 20th century?

The primary focus in this report is on mobility in terms of direct labour market outcomes such as earnings, occupations and labour market participation. However, in order to say more about intergenerational mobility for a wider group of countries, and facilitate the discussion on the drivers of mobility, evidence on mobility in terms of education and skills is also reviewed. Research demonstrates that education and skills are associated with beneficial labour market outcomes such as earnings, work environment, job satisfaction and career opportunities all across the world (e.g. Hanushek et al., 2015; Albert and Davia, 2005). The report also reviews the evidence on occupational or class mobility, drawing on recent sociological research.

A crucial focus of the paper examines evidence on correlates and causal drivers of mobility. It is impossible to fully explain why, for example, a country like the United States is less intergenerationally mobile than the Scandinavian countries. However, researchers have come quite a way in terms of identifying various factors and policies that have particularly beneficial effects on the prospects of those from disadvantaged backgrounds, and thus also on intergenerational mobility. Various aspects of the educational system are for example seen as primary policy tools to affect mobility, and educational reforms are sometimes explicitly motivated to achieve this outcome. Research has also identified several important correlates of high-mobility societies, such as the observation that high mobility is more common in countries with lower levels of

³ *Point-in-time measures of income, such as one's income in a given year, are often not accurate measures of long-term or lifetime income (for instance, due to temporary unemployment or sickness, or periods involving bonus payments or a lot of overtime work). Using short snapshots of income thus introduces statistical noise into the estimation, leading to a reduction in intergenerational correlations and overstated levels of mobility. In addition, income differences between individuals tend to increase with age. Measures of income mobility that do not abstract from the magnitude of income differences are therefore sensitive to the age at which incomes are measured. Today, researchers typically aim to measure income as multi-year averages around midlife, such that these problems are reduced.*

⁴ *Occupation is by nature a categorical variable: we cannot directly conclude whether one occupation is superior to another, they are simply different. However, occupations can be transformed into hierarchical (i.e. cardinal) variables such as "occupational prestige" (Treiman and Ganzeboom, 1990), or used to form social classes by aggregating occupations that share certain characteristics into larger groups ("macro classes", as in Erikson and Goldthorpe, 1992). One can also use a larger number of finer groups, or "micro classes", as in Jonsson et al. (2009).*

inequality. Examining correlates of mobility is useful as it enables us to also consider factors at the macro level and in the domain of the labour market, and ultimately relate these insights to observed mobility differentials across countries.

A couple of small but growing research areas unfortunately fall outside the scope of this report. Recent evidence on intergenerational *wealth* transmission has produced some interesting findings – for example that wealth persistence appears to depend strongly on bequests and inheritance (Adermon, Lindahl and Waldenström, 2016) – but it is restricted to only a handful of high-income countries and has less direct implications for the labour market. Moreover, recent research on *multigenerational* correlations based on data on three or even four generations has found that standard parent–child associations probably understate the transmission of advantages (e.g. Clark, 2014). However, we currently know little, if anything, about the causal drivers of such multigenerational persistence.

2. Intergenerational mobility across countries and time

How persistent are differences in socio-economic status across generations, and do rates of persistence vary between countries? These questions are interesting from a purely descriptive perspective, but country comparisons can also provide insights into causal mechanisms. For example, researchers often study whether countries with low inequality and high mobility share certain institutions and policies. But countries vary in countless aspects, which complicates the relationship between mobility differences at the national level and particular factors. With that caveat in mind, it is still useful to review the evidence on mobility differences across countries.

To paint a global picture of intergenerational mobility we use the World Bank’s Global Database on Intergenerational Mobility (GDIM), as well as previous reviews and articles from the academic literature. The GDIM is based on a rich collection of household and social surveys and contains estimates of absolute and relative mobility in education of men and women in 148 different countries.⁵ It also provides estimates of income mobility for about half of those countries. Many of those estimates are however associated with substantial uncertainty and it is thus important to also use other sources when reviewing income mobility.⁶

2.1. Relative mobility across countries

Relative mobility is commonly analysed using (linear) parent–child regression relationships, or correlations, of various socio-economic status measures.

⁵ See Narayan et al. (2018) for the full report by the OECD as well as a more detailed description of the data.

⁶ Available data for most countries around the world are not sufficiently rich to address the concerns outlined in footnote 3.

We thus consider a regression

$$y_{i,child} = a + by_{i,parent} + e_i, \quad (1)$$

where $y_{i,child}$ denotes the status of the child and $y_{i,parent}$ of the parent. For educational mobility, years of education is often used as the status variable, while for income mobility one tries to approximate long-run income using multi-year income averages. The slope coefficient b captures to what degree education or income differences between parents are associated with differences among their children. It shows how strongly child outcomes depend on parental outcomes *on average* in a population. A high b implies high intergenerational persistence and low mobility, and vice versa.

Education

We first turn to the GDIM data's measures of educational mobility in order to get a global perspective. Table 1 shows average relative intergenerational persistence in years of education by country groups, using the World Bank's income classification (low, lower middle, upper middle, and high income).

Table 1. Average intergenerational persistence in education across country groups

Stratified by:	All	Daughter	Son	Mean years of education	Standard deviation	countries
High income	0.32	0.33	0.32	14.16	2.84	36
East Asia & Pacific	0.37	0.36	0.38	10.52	3.72	16
<i>Lower middle income</i>	<i>0.37</i>	<i>0.36</i>	<i>0.38</i>	<i>9.34</i>	<i>3.93</i>	<i>11</i>
<i>Upper middle income</i>	<i>0.38</i>	<i>0.37</i>	<i>0.37</i>	<i>11.62</i>	<i>3.26</i>	<i>5</i>
Europe & Central Asia	0.43	0.46	0.41	12.25	3.02	20
<i>Lower middle income</i>	<i>0.36</i>	<i>0.38</i>	<i>0.35</i>	<i>11.84</i>	<i>2.80</i>	<i>7</i>
<i>Upper middle income</i>	<i>0.47</i>	<i>0.50</i>	<i>0.43</i>	<i>12.48</i>	<i>3.13</i>	<i>13</i>
Latin Am. & Caribbean	0.43	0.43	0.43	9.66	4.02	16
<i>Lower middle income</i>	<i>0.52</i>	<i>0.54</i>	<i>0.49</i>	<i>7.71</i>	<i>4.50</i>	<i>5</i>
<i>Upper middle income</i>	<i>0.40</i>	<i>0.39</i>	<i>0.41</i>	<i>10.54</i>	<i>3.79</i>	<i>11</i>
Middle East & N. Africa	0.39	0.42	0.36	9.76	4.53	10
<i>Lower middle income</i>	<i>0.39</i>	<i>0.47</i>	<i>0.33</i>	<i>9.24</i>	<i>4.84</i>	<i>6</i>
<i>Upper middle income</i>	<i>0.38</i>	<i>0.34</i>	<i>0.39</i>	<i>10.53</i>	<i>4.07</i>	<i>4</i>
South Asia	0.50	0.53	0.46	7.38	4.63	8
<i>Low income</i>	<i>0.57</i>	<i>0.59</i>	<i>0.53</i>	<i>5.80</i>	<i>5.45</i>	<i>2</i>
<i>Lower middle income</i>	<i>0.54</i>	<i>0.60</i>	<i>0.49</i>	<i>7.04</i>	<i>4.44</i>	<i>5</i>
<i>Upper middle income</i>	<i>0.11</i>	<i>0.11</i>	<i>0.12</i>	<i>12.19</i>	<i>3.94</i>	<i>1</i>
Sub-Saharan Africa	0.50	0.51	0.47	6.38	4.44	41
<i>Low income</i>	<i>0.54</i>	<i>0.55</i>	<i>0.51</i>	<i>4.82</i>	<i>4.55</i>	<i>22</i>
<i>Lower middle income</i>	<i>0.47</i>	<i>0.48</i>	<i>0.42</i>	<i>7.38</i>	<i>4.52</i>	<i>13</i>
<i>Upper middle income</i>	<i>0.40</i>	<i>0.40</i>	<i>0.41</i>	<i>9.94</i>	<i>3.81</i>	<i>6</i>

Note: The table shows average intergenerational persistence in education across countries stratified by region and region-income level. The country-specific estimates are based on a regression such as equation (1) of child years of education on the maximum of parents' years of education, for child cohorts born around 1980. A higher estimate thus means higher persistence or lower mobility. Column "All" is for all children, while the next two columns are for sons and daughters separately. The subsequent columns show the group mean of mean years of education, as well as the group mean of the standard deviation in education. All means are unweighted such that each country receives equal weight. The underlying country-specific estimates come from the World Bank's Global Database on Intergenerational Mobility (GDIM).

These data show that intergenerational persistence in education is on average substantially higher in low-income than in high-income countries. The average rate of persistence in the low-income countries of South Asia and sub-Saharan Africa is 0.57 and 0.54, respectively, meaning that an additional year of parental education is on average associated with just over half a year of additional education for their children. The corresponding global average for high-income countries is 0.32, such that children in those countries inherit only about a third of their parents' educational advantage.⁷

Even within the group of low-income countries, however, there are notable differences across countries. The rate of persistence is above 0.60 in countries like Ethiopia, Mozambique and Nepal, but lower than 0.45 in Malawi, United Republic of Tanzania, and Uganda. The variation is similarly large within the group of high-income countries. Hungary, Portugal and Uruguay stand out as high-persistence countries, while Israel, Republic of Korea, the Nordic countries and the United Kingdom show up on the other end. The global averages for lower and upper middle-income countries are rather similar, at 0.43 and 0.41, and thus in-between the low- and high-income countries. High persistence countries within these groups include, for example, Angola, Guatemala and Romania, while Lesotho, the Philippines and South Africa stand out as having unusually low persistence and high mobility. However, although the data set is intended to be comparable we should exercise caution when comparing country-specific estimates, as sample sizes and survey qualities can vary substantially across countries.

Table 1 also shows some notable variation across regions of the world. Among lower middle-income countries, persistence is higher in Latin America, South Asia, and sub-Saharan Africa, but relatively low in East Asia, Europe & Central Asia, and the Middle East & North Africa. Across upper middle-income countries, differences are smaller and centred around 0.40.⁸ Table 1 also shows estimates for sons and daughters separately. Gender differences are generally small, but in some cases such as in the low and lower middle-income countries of South Asia and the Middle East & North Africa, daughters tend to have higher persistence than sons.⁹

There are a couple of main insights as regards educational mobility at the global level. First, mobility in education appears to be substantially higher in high-income than in low-income countries, with middle-income countries situated somewhere in-between. Second, educational mobility varies substantially, especially across developing countries. In particular, educational mobility seems substantially lower in South Asia and sub-Saharan Africa than in other developing regions.

Income

We next turn to relative mobility in incomes. Since such estimates are data demanding, the evidence pertains mostly to high-income countries. The most common measure of

⁷ Those classified as high-income countries include Australia, Austria, Belgium, Canada, Chile, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Iceland, Israel, Italy, Japan, Republic of Korea, Latvia, Lithuania, Netherlands, Norway, New Zealand, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland, Taiwan (China), United Kingdom and United States.

⁸ An exception is South Asia with an estimate of 0.11, although this is based on only a single country (the Philippines). These small differences separate this group of countries from the comparatively more heterogeneous low- and high-income country groups. The main reasons for these different patterns however remain unclear.

⁹ In South Asia the average estimates for all countries (including also one upper middle-income country) are 0.53 for daughters and 0.46 for sons. The difference is stronger for lower middle income countries (0.60 for daughters; 0.49 for sons). But also in upper middle income countries in Europe and Central Asia there is a small gender difference (0.50 for daughters; 0.43 for sons). These differences, although statistically uncertain, might indicate that girls' schooling is seen more as a "luxury investment" not affordable for all families in these countries.

income persistence is the intergenerational elasticity of income (IGE), which is given by b in equation (1) but now with $Y_{i,child}$ and $Y_{i,parent}$ denoting (logarithmic) lifetime incomes of the child and the parent, respectively. The IGE captures to what degree differences in income between parents are associated with income differences among their children.¹⁰

Table 2 shows estimates of the IGE (see table notes for details). As in table 1, higher estimates imply higher persistence (lower mobility), and vice versa. Column 1 lists estimates from Corak (2013), which are reasonably comparable across countries. For some countries, however, substantial improvements on previous studies have been made since then; those estimates are listed in column 2.¹¹ To expand the set of countries further, column 3 shows estimates from the GDIM. These estimates are summarized as averages across country groups, since country-specific estimates from the GDIM are volatile and often not sufficiently reliable. In addition, columns 4 and 5 show measures of fluidity in social class based on occupations.

Table 2 shows that income mobility appears higher in European countries than in the United States, possibly with the exceptions of Italy, Spain and the United Kingdom. But there is also notable variation across Europe. For example, income persistence appears to be particularly low in the Nordic countries, thereby indicating high levels of mobility. Although these estimates have been adjusted somewhat in recent years as better data have become available (see column 2), they are still amongst the lowest in Europe. Recent evidence suggests that Japan is less mobile than the Nordic countries but more mobile than the United Kingdom and United States. Australia and Canada seem to have levels of income mobility that are only marginally lower, or even similar to, those in the Nordic countries. Existing estimates for Germany suggest mobility levels in a similar range, although they are based on a smaller data sample.

Evidence for countries such as Brazil, China, South Africa and a few other middle-income countries generally indicates income mobility levels that are similar to or even lower than the mobility found for the United States. The GDIM data provide a wider account of income mobility in low- and middle-income countries. While these estimates are often based on different methods than those for most high-income countries,¹² the general pattern is one of (much) lower mobility than in high-income countries. The average IGE in high-income countries in the GDIM data is 0.35, but around 0.50 or higher in the low- and middle-income groups. Income persistence seems particularly high in Latin America, the Middle East and North Africa, and sub-Saharan Africa, while the Asian regions are instead on par with the United Kingdom and the United States.

How do these patterns of (relative) educational and income mobility across countries compare to each other? First, there is a positive association between level of development and mobility both in terms of income and education, with low-income countries having the lowest mobility. Second, there is a positive relationship across countries between mobility measures based on income and education, especially across high-income countries (see also Hertz et al., 2007).

¹⁰ Using logarithms rather than levels enables us to interpret the IGE in percentage rather than absolute differences. For example, an IGE of 0.50 means that the child from parents who have 10 per cent higher income than the mean in their generation can expect to have about 5 per cent higher income than the mean in their own generation.

¹¹ Schnitzlein (2016) for Germany; Nilsen et al. (2012) for Norway; Suoniemi (2017) for Finland; Landersø and Heckman (2017) for Denmark; Murray et al. (2017) for Australia; Chen, Ostrovsky and Piraino (2017) for Canada; Piraino (2015) for South Africa; and Yuan (2017) for China.

¹² For many countries in the GDIM database estimates of the IGE are obtained using so-called two-sample instrumental variables (TSIV), since the incomes of parents and their children are typically not observed in the same data set. TSIV-estimates of the IGE are generally believed to become somewhat higher than standard estimates (based on ordinary least squares). We should thus take the GDIM estimates with a grain of salt, although the methods are unlikely to explain the entire difference vis-à-vis high-income countries.

Table 2. Persistence in income and occupation/social class

Country / Source	Income (IGE)			Social class	
	(1)	(2)	(3)	(4)	(5)
	Corak (2013)	Recent	GDIM	Ludwinek et al. (2017)	Erikson & Goldthorpe (1992)
United Kingdom	0.50			0.74	0.8
Italy	0.50			-	0.12
France	0.41			0.93	0.16
Spain	0.49			1.04	
Germany	0.32	0.32-0.39		0.95	0.13
Sweden	0.27			0.92	-0.17
Norway	0.17	0.28-0.34		-	
Finland	0.18	0.24		0.70	
Denmark	0.15	0.27		0.64	
Brazil	0.58			-	
United States	0.47			-	-0.20
Switzerland	0.46			-	
Japan	0.34			-	-0.20
Australia	0.26	0.28-0.41		-	-0.23
Canada	0.19	0.32		-	
South Africa		0.60			
China		0.50			
<i>High income</i>			0.35		
<i>East Asia & Pacific</i>			0.50		
<i>Europe & C. Asia</i>			0.47		
<i>Latin Am. & Car.</i>			0.90		
<i>Mid. East & N. Afr.</i>			0.82		
<i>South Asia</i>			0.49		
<i>Sub-Saharan Afr.</i>			0.69		

Note: Columns 1-3 show estimates of the intergenerational income elasticity (IGE), i.e. the slope coefficient from a regression of child on parent log lifetime incomes. A higher IGE means higher persistence or lower mobility. Column 1 is based on Corak (2013). Column 2 provides some updated estimates that are based on; (i) nationally representative data; (ii) directly observed incomes of fathers and sons; and (iii) approaches that address measurement error due to attenuation and lifecycle bias. The sources are Schnitzlein (2016) for Germany; Nilsen et al. (2012) for Norway; Suoniemi (2017) for Finland; Landersø and Heckman (2017) for Denmark; Murray et al. (2017) for Australia; Chen, Ostrovsky and Piraino (2017) for Canada; Piraino (2015) for South Africa; and Yuan (2017) for China. The estimates of class mobility in column 4 are based on approximations from Ludwinek et al. (2017), and those in column 5 from Erikson and Goldthorpe (1992). The estimates summarize relative mobility in broad social classes, with the origin classified according to the occupations of parents. Estimates are scaled with respect to a reference class (=1 in column 4 and =0 in column 5), with higher values reflecting less social fluidity.

Country differences in educational mobility however do seem smaller, and a couple of outliers are worth noting. For example, the United Kingdom and the United States have comparatively low levels of income mobility but do quite well in terms of educational mobility. This highlights the importance of the interplay between educational mobility and labour markets for income mobility. Similar levels of intergenerational persistence in education can have different consequences depending on the “returns” to those

educational advantages. In countries with high returns to education and more earnings inequality, such as the United States, moderate persistence in education can render high persistence in incomes. Conversely, in low-inequality countries the impact of parental background will be less consequential for labour market outcomes. As an illustration we can think of an extreme case in which there are no or very small earnings returns to education. In this context, even if children from high-income families have much higher education than their peers, such that educational mobility is very low, there will be no persistence in incomes and thus perfect income mobility.

Occupation and social class

We finally look at mobility in terms of occupations and social class. Patterns of occupational persistence may relate to certain channels of intergenerational transmission. For example, the observation that individuals tend to work in similar occupations or even the same firms as their parents (Corak and Piraino, 2011) might be due to the transmission of skills or job preferences, but also due to the importance of social networks or direct nepotism (Jonsson et al., 2009; Munshi, 2011).

We draw primarily on a recent report by Ludwinek et al. (2017) that covers a set of European countries, and a review by Erikson and Goldthorpe (1992). They employ measures of relative mobility (or “social fluidity”) based on the probability that individuals originating from different occupation-based social classes end up in other classes regardless of changes in the class structure over time. Such relative mobility rates thus capture the chances that individuals arrive at different class destinations than their parents (i.e. their “origins”) and thus indicate the extent of social fluidity (see Breen, 2004). These estimates are summarized in the final two columns of table 2. The lower an estimate is, the weaker is the association between origin and destination and thus the higher is social fluidity.¹³

While the number of countries here is quite small and restricted to high-income societies, the patterns of mobility in social class differ quite markedly from those in terms of educational or income mobility. It seems that only the high mobility in the Nordic countries is consistently captured by all mobility measures.¹⁴ For example, the Anglo-Saxon countries, some of which tend to do poorly in terms of income mobility, all record fairly high rates of social fluidity. The estimates in Ludwinek et al. (2017) also distinguish between men’s and women’s social fluidity. While gender differences vary across countries, women on average appear to have experienced higher rates of mobility in social class in recent cohorts.¹⁵

The observation that cross-country mobility patterns measured by class and occupations often tend to differ quite a bit from those measured in terms of income or education is consistent with previous work, such as Blanden (2013). A number of reasons may

¹³ All estimates are with respect to a set reference point and thus lack any independent interpretation. Social classes in Ludwinek et al. (2017) are defined using the European Socioeconomic Classification which is based on decades of work by Robert Erikson, John Goldthorpe, and colleagues (e.g. Erikson and Goldthorpe, 1992). The schemes combine the Marxist ownership approach with the Weberian market-based approach to form classes in terms of assets and resources (e.g. education, income, wealth, social capital), and one’s relationship to the means of production (employer, self-employed or employee).

¹⁴ Note that class mobility in Sweden appears less “exceptional” than that in the Nordic neighbours and closer to the average across countries.

¹⁵ Closely related to the discussion of gender differences in class mobility is theoretical and empirical research looking at how occupational gender segregation can suppress overall rates of class mobility as well as women’s access to on-the-job training and good paying jobs (Escriche, 2007; Blau, Brummund and Liu, 2013). A decrease in occupational gender segregation in recent decades might have contributed to women’s increased rates of class mobility.

contribute to this divergence.¹⁶ Notably, differences in the extent of mobility by income and social class could also be explained by the extent to which income *not explained by* social class is transmitted across generations. Blanden (2013) argues that the transmission of income inequality *within* social classes and occupations is essential, which could explain why countries like the United Kingdom and the United States on are relatively immobile on the basis of income but perform better in terms of social class mobility. For example, educational and occupational opportunities might be fairly equal in those countries, while parental status is highly important for access to good jobs, promotions, and good employers *given* your education or occupation.

2.2. Time trends in relative mobility

How have levels of intergenerational mobility changed over time, and do such trends differ across countries? We here review some recent research on such topics, with a focus on relative mobility and the period covering the second half of the 20th century up until today.¹⁷

The easiest and probably most robust way of studying mobility over time across a wide range of countries is to focus on education. The recent World Bank report (Narayan et al., 2018) based on the GDIM data shows evidence of a trend of decreasing relative advantage of children from well-educated families over time, in both high-income and developing countries. For cohorts born between 1940–50 and 1980, the association between child and parental years of schooling fell from around 0.50 to 0.45 in low- and middle-income countries and by even more in high-income countries. These patterns indicate that while parental education is still a strong predictor of child education, this relationship has weakened over time, implying a tendency towards increased relative mobility.

Although educational mobility on average has made progress over time in developing countries, the improvements differ in magnitude across countries and indeed are not always present. Regional breakdowns show that positive changes are largely concentrated to East Asia, Latin America, and the Middle East and North Africa. In contrast, relative educational mobility stagnated or even declined somewhat in Eastern Europe & Central Asia, South Asia, and sub-Saharan Africa.

Earlier sociological work used other data sources and studied earlier parts of the 20th century. In a review of educational inequalities across a set of developed countries, Shavit and Blossfeld (1993) find that while educational attainment increased across all social classes, the relative advantage associated with a privileged origin remained quite stable in most countries. In contrast to Shavit and Blossfeld, however, Breen et al. (2009) find that educational mobility rose in most countries of Western Europe over a similar time period. Indeed, most other studies from the last couple of decades also appear to support the notion of increasing educational mobility by social class.¹⁸

For high-income countries, there is also growing evidence on more recent time trends in mobility in incomes and occupations or social class, although in most cases only

¹⁶ Aspects regarding data quality and measurement issues could of course also contribute.

¹⁷ We briefly comment on time trends in absolute mobility in the next subsection. There is a fascinating literature on more historical mobility trends spanning multiple centuries, often using innovative data sources and methods, which we do not comment on here. See for example Long and Ferrie (2013); Clark (2014); and Modalsli (2015).

¹⁸ See for example the discussion and references in Breen (2010).

for men. For Europe, evidence on trends in income mobility is only available for a handful of countries. Income mobility appears to have declined in the United Kingdom for cohorts born between the 1950s and 1970s (Blanden et al., 2004; Nicoletti and Ermisch, 2007). Blanden and Machin (2008) however argue that income mobility is likely to have stabilized for more recent British cohorts, based on indirect evidence on relationships between parental income and intermediate outcomes (degree attainment, test scores, skills). Lefranc (2018) studies French cohorts born between 1931 and 1975 and documents a V-shaped trend in persistence; first falling rapidly but then returning back close to initial levels.¹⁹ When adjusting for changes in cross-sectional earnings inequality the trend is however much more stable, suggesting that the changes are mainly driven by labour market inequality.²⁰ Evidence from the Nordic countries (Pekkarinen, Salvanes and Sarvimäki 2017; Markussen and Roed, 2017; Björklund, Jäntti and Lindquist 2009; Pekkala and Lucas, 2007) suggests that income mobility increased in the 20th century, coinciding with a fall in earnings inequality and the rise of their welfare states.²¹ Recent evidence for China also points to the connection between time trends in income mobility and inequality, suggesting that mobility declined in conjunction with an increase in inequality for cohorts born between the early 1970s and late 1980s (Fan, Yi and Zhang, 2018).

The evidence for the United States is less conclusive, but indicates a decline in mobility around 1980 followed by a subsequent stabilization. Chetty et al. (2014b) find no changes in mobility across cohorts born in the 1980s. Lee and Solon (2009) study earlier cohorts and find no dramatic changes in income mobility, although more modest changes cannot be rejected. Davis and Mazumder (2017) argue that income mobility indeed declined sharply for cohorts born around 1960 compared to those in the 1940s. They explain this trend by the fact that the former entered the labour market largely after the large rise in inequality that commenced around 1980, while the latter entered the labour market before this inflection point. Evidence on time trends for most other countries is either even less conclusive or entirely lacking. To detect changes in income mobility, which may be only gradual, we require large representative data sets for many families that are comparable over time. Unfortunately most countries still lack such data sources.

A more long-standing sociological literature has studied trends in occupational or class mobility over time, although again mostly for high-income countries. Studying data spanning from the 1970s to the 1990s, Breen and Luijkx (2004) find that class mobility increased in many European countries, except in the United Kingdom. Similarly, Ludwinek et al. (2017) find that class-based social fluidity improved in most European countries for cohorts born 1946–64. Modalsli (2015) documents a dramatic increase in occupational mobility in 20th-century Norway, which was primarily driven by an equalization of the chance of ending up in white-collar occupations by social origin. Gil-Hernandez, Marqués-Perales and Fachelli (2017) study trends in class mobility in Spain, finding substantially higher rates of social fluidity for cohorts born in the second half than in the first half of the 20th century. An important result is that women saw disproportionately large improvements in fluidity, channelled by educational expansion and improved access to non-manual jobs, whereas the fluidity of men changed only marginally.

¹⁹ Due to a lack of direct intergenerational income data, Lefranc (2018) relies on a two-sample instrumental variables approach to estimate the IGE.

²⁰ To adjust for changes in cross-sectional inequality he follows the standard procedure of looking at the (intergenerational) correlation instead of the regression coefficient (i.e. the IGE).

²¹ The evidence for Sweden is based on sibling rather than parent–child correlations. The sibling income correlation is also a measure of the relative importance of family background for incomes, but broader in scope than the intergenerational correlation.

Only a few studies of trends in occupational or class mobility exist for middle-income countries. For example, Torche and Ribeiro (2010) analyse intergenerational class mobility in late-20th century Brazil, finding increasing rates of social fluidity over time. Two mechanisms account for this growing fluidity: a decline in the “class returns” to schooling, and a weakening of the direct influence of class origins on class destination, net of schooling. For China, Zhou and Xie (2017) find evidence of a decline in social fluidity following the transition from state socialism to a market economy, as the link between origin and destination in social status strengthened. Despite this recent decline, however, they argue that social fluidity in China is still higher than in most developed market economies.

Table 3. Broad summary of evidence on 20th-century trends in relative mobility

Country group	Educational mobility	Income mobility	Occupational/class mobility
High-income countries	Increases in most countries	Differing trends: increases in the Nordic countries; little change or a decrease in the US and the UK; inconclusive or stable elsewhere	Increases in most countries
Middle-income countries	Increases in most countries	Very little evidence. Decrease in China.	Little evidence. Increase in Brazil, but decrease in China.

All these studies paint a quite diverse picture of trends in social mobility, although with some general patterns. Table 3 provides a broad summary. Mobility in terms of education or occupations seems to have increased across most but not all countries since the mid-20th century. While the referenced countries certainly differ in several respects, these trends typically coincided with their intermediate or final stages of industrialization as well as expansions of education systems towards higher educational attainment. As revealed by studies of income mobility, however, the effect of such improvements in educational and class mobility depends crucially on labour market trends and, in particular, trends in earnings inequality. Countries such as the United Kingdom and the United States, for example, continue to perform well in terms of class and educational mobility, but substantial increases in earnings differentials dwarf such fluidity and lead to high, and possibly increasing intergenerational income persistence. A mirror-image type of example is the 20th-century experience of the Nordic countries.

2.3. Absolute mobility across countries and time

As mentioned in the introduction, *absolute* mobility is about how well *all* children of a generation do as compared to their parents. The extent of absolute mobility can be analysed by looking at the share of children that attain higher living standards as adults than their parents did (e.g. Chetty et al., 2017). As such, we could in theory have complete absolute mobility *and* little or no relative mobility if the overall growth in living standards is sufficiently broad-based but the positions of the income distribution are

strongly persistent. In practice, however, it turns out that absolute and relative mobility levels seem to go hand in hand.

The GDIM data shows evidence on absolute mobility in education, by computing the shares of the child generation attaining higher education than their parents (Narayan et al., 2018). Absolute mobility in educational attainment is generally higher in high-income than in developing economies. But among low- and middle-income countries the extent of absolute mobility varies substantially. For example, in many low-income countries in sub-Saharan Africa less than half of younger adults today have more education than their parents, while the corresponding fraction in parts of East Asia is around 80 per cent.

The same data source also sheds light on the development of absolute mobility *over time* across both high-income and developing countries. In developing countries, the average share of children ending up with higher educational attainment than their parents rose from around 40 to around 50 per cent between the (child) cohorts born 1940 and 1980.²² For high-income countries, the fraction of children out-educating their parents plateaued at almost 65 per cent among the cohorts born in the 1950s but has since then decreased to below 60 per cent. Thus, absolute mobility in education remains higher in high-income than in developing countries, but the differences seem to have declined over time.

An interesting global trend is also that of girls catching up or even out-pacing boys in terms of education (e.g. Narayan et al., 2018). Girls in high-income countries have since decades ago moved ahead of boys in absolute mobility, and they are rapidly closing the gap in developing countries. These trends suggest a not-too-distant future when upward mobility relative to parents will be greater among girls than among boys in the developing world.

On average, there also seems to be a positive relationship between absolute and relative mobility: countries with a higher share of adult children who are more educated than their parents also tend to be countries in which their education is less dependent on the education of their parents. This is consistent with the notion that absolute and relative mobility complement and reinforce each other.²³

We know less about absolute mobility in income, occupations or social class. A recent study for the United States, however, documents time trends in the share of children who earn more than their parents (Chetty et al, 2017). According to this measure, the rate of absolute mobility fell from approximately 90 per cent for children born in 1940 to 50 per cent for children born in the 1980s. In an attempt to understand this trend, the authors find that most of the difference can be explained by the changing distribution of growth across income groups, while a decline in average rates of growth had less effect. The American experience thus suggests that high rates of absolute mobility requires income growth that is spread broadly across the income distribution.

Studies of absolute mobility in terms of occupations and social class generally find secular improvements in upward mobility over the 20th century (e.g. Breen, 2010).

²² Parental education is measured as the maximum educational attainment of the parents. In their measure of absolute upward mobility Narayan et al. (2018) however also exclude parents with tertiary education, thus effectively excluding those who are most likely to either be at a similar or lower educational attainment than their parents. This probably overstates the rate of upward mobility to some extent.

²³ See for example Narayan et al. (2018) for lengthy discussions of this relationship. It is unclear whether there is a direct causal link between, for example, relative mobility and (broad-based) economic growth and thus absolute mobility, or whether some other (omitted) factor drives both relative and absolute mobility (e.g. openness, technological change, institutions, etc.).

This is unsurprising, as virtually all labour markets have seen a dramatic rise in the share of the manufacturing and white-collar sectors, while especially the farming sector has declined in importance. A large increase in the number of white-collar jobs should almost mechanically lead to increasing absolute mobility. Whether this change also leads to upward mobility in terms of incomes and living standards crucially depends on the evolution of within-sector earnings growth and disparities. Further studies of time trends and country differences in absolute mobility in incomes as well as in finer class or occupation categories are essential in order to learn more about recent changes in upward mobility.

3. Drivers of intergenerational mobility

What factors and policies have been identified as important drivers of intergenerational mobility? Taking a broad approach, this section reviews evidence on macro- and micro-level correlates of mobility, mediators or “pathways” of intergenerational associations, and causal evidence on what impacts relative mobility.

3.1. Cross-sectional inequality and intergenerational mobility

The observation that countries with higher income inequality tend to have lower intergenerational income mobility has received much attention in recent years, and the relationship has even been given its own name – the “Great Gatsby curve” (e.g. Björklund and Jäntti, 2009; Corak, 2013; Blanden, 2013).²⁴ Similar patterns are also found for a larger set of countries for relative mobility in education: lower mobility is associated with both higher education inequality during adolescence and higher income inequality during adulthood (Narayan et al., 2018). Moreover, these associations appear to be substantially stronger in developing than in high-income countries. The negative correlation between inequality and mobility can also be observed across regions *within* countries. Chetty et al. (2014a) find that higher income inequality is associated with lower intergenerational mobility across areas in the United States. Güell et al. (2018), Fan, Yi and Zhang (2018), and Corak (2017) all find similar patterns across regions of Italy, China, and Canada, respectively.

The Great Gatsby curve – that inequality and income (or education) mobility tend to be negatively correlated – is consistent with theoretical models of intergenerational transmission (e.g. Becker and Tomes, 1979; Solon, 2004). For example, parents may invest more in their children’s human capital when returns to skills are higher. If some parents are not able to finance such private investments, or if the returns

²⁴ Alan Krueger, former Chairman of the Council of Economic Advisers, coined this term in a speech at the Center for American Progress, 12 January 2012.

to investments vary with parental background, inequality will lead to lower mobility. However, progressive government subsidies of education or other skill investments may partly counteract this mechanism. Inequality may also affect mobility via segregation, as higher inequality tends to increase residential segregation (Durlauf and Seshadri, 2017). Cross-country evidence indeed indicates that countries with higher educational mobility tend to have lower levels of spatial segregation by education (Narayan et al., 2018).

But our knowledge remains limited about whether this statistical association between inequality and mobility can be interpreted causally, and if so, in what direction the causality primarily goes. In fact, it is plausible both that higher inequality can suppress mobility and that lower mobility reinforces inequalities. Theoretical arguments, such as those outlined above, can support both these channels, but most of the empirical evidence remains descriptive (e.g. Erikson and Goldthorpe, 1992; Corak, 2013). While the empirical association between inequality and intergenerational mobility is robust, the mechanisms underlying it are not yet so well understood.

3.2. Correlates and pathways of mobility

The step from the Great Gatsby curve to policy conclusions is therefore a long one. However, research has provided plenty of hints as to where to search for key factors underlying observed mobility differences, often with an objective to broadly distinguish the importance of early life factors from differences in the labour market. For example, a couple of recent studies attempt to account for country differences in intergenerational mobility using various decomposition methods. Blanden et al. (2014) use harmonized data from the United Kingdom and the United States to examine several pathways by which parental status is related to offspring status, including education, labour market attachment, occupation, marital status and health. In the United States, primarily because of the higher earnings returns to education and skills, the pathway through offspring education appears relatively more important, while in the United Kingdom the occupation pathway forms the primary channel of intergenerational persistence.

In a similar study, Björklund, Jäntti and Nybom (2017) find stronger associations between parental income and measures of child health and school performance in the United Kingdom than in Sweden. The country difference in overall income mobility is, however, almost entirely driven by the education channel. To this end, country differences in the earnings returns to these skills (i.e. earnings inequalities) are at least as important as the differences in the link between parental income and skills. Studies have also decomposed intergenerational associations in within-country settings. Blanden, Gregg and Macmillan (2007) find that educational inequality by family background – meaning that children from high-income families on average have better educational achievements than children from low-income families – is an important explanation of intergenerational persistence in United Kingdom. Similar types of inequalities in informal (cognitive and non-cognitive) skills and labour market attachment are also found to be important drivers. All these factors, with a particular emphasis on the education and labour market attachment channels, are also able to explain roughly 80 per cent of the decrease in mobility found in the late 20th-century United Kingdom.

With a sufficiently large number of estimates of intergenerational mobility across countries, or across areas within countries, such estimates can also be related to a host of country or area “macro” characteristics. While such associations do not provide a causal explanation, they are useful for informing future research and policy discussions

on the potential drivers of mobility. In the influential study of regional variation in the United States, Chetty et al. (2014a) find that high mobility areas tend to have less residential segregation, less income inequality, better primary schools, greater social capital, and greater family stability. Güell et al. (2018) provide a similar analysis of Italian provinces, finding that higher social mobility is positively associated with a variety of “good” economic outcomes, such as higher value added per capita, higher employment, lower unemployment, higher schooling and higher openness.

Corak (2013) also provides a descriptive yet structured discussion of the joint drivers of earnings mobility and inequality. The approach is rather broad, with the general argument that families, labour markets, and public policies all interact in shaping opportunities and determining the extent to which adult outcomes such as earnings are related to family background. He argues that the polarized labour markets in countries such as the United States are likely to hamper mobility even more in the future. In particular, the rising income shares of the top 1 per cent, their access to exclusive and high-quality education, and the substantial intergenerational transmission of employers at the very top (see also Corak and Piraino, 2011) may all lead to an increasing rate of transmission of economic advantage at the very top.

In the context of economic transition in China, Fan, Yi and Zhang (2018) document regional trends in intergenerational (income) mobility, and also explore correlates of these regional trends. For example, they find that a declining share of the primary industry (raw materials, agriculture, etc.), a falling poverty rate, and an increasing rate of internal migration are associated with improved mobility within regions. However, increases in the share of private enterprises, gross regional product per capita, public education expenditures, and university enrolment rates are *negatively* correlated with regional mobility shifts. Some of these findings are perhaps surprising. However, the same regions that experienced larger increases in economic growth also saw larger increases in the return to education, increasing roles for private education, and so on, which are argued to disproportionately benefit those from advantaged backgrounds. Public education expenditures are similarly argued to have had a regressive effect since they are strongly decentralized and lack any element of means testing.

3.3. Causal determinants of mobility

The previous two subsections looked at factors associated with intergenerational mobility from descriptive studies. In particular, a strong case was made that income inequality correlates negatively with mobility. While such evidence can point out fruitful directions for further research, it cannot credibly establish causal links and lacks direct policy implications. In this subsection we turn to causal evidence on factors and policies that either directly affect mobility, or indirectly by primarily benefiting children from low-income families. We first summarize the evidence on pre-market factors related to the early environment and the educational system. We then review evidence on labour market factors.

Education and other pre-labour-market factors

There are a couple of theoretical explanations as to why early childhood would be crucial for intergenerational mobility. First, the idea of “dynamic complementarity” – that learning at an early age facilitates learning at later stages – suggests that early skill investments are crucial for future learning and for keeping skill gaps between socio-

economic groups as small as possible (Cunha and Heckman, 2007; Heckman, 2007). Second, the quality and consequences of skill investments may depend more on family background in early childhood, when parents tend to be more directly involved and are typically the alternative mode of care.

Accordingly, there is a vast amount of evidence documenting generally positive effects of various early interventions, including both child care (or pre-school) and policies to monitor and improve maternal and child health early in life. Butikofer, Løken and Salvanes (2018), for example, find large positive effects of a reform that introduced mother and child health-care centres with universal access during a child's first year in Norway in the 1930s. The effects were especially strong for children from low socio-economic backgrounds. For the same country, Carneiro, Løken and Salvanes (2015) find that the introduction of four months of paid maternity leave in the 1970s had substantial positive effects on children's high-school completion and wages, again with the strongest effects found for the least advantaged children. However, subsequent increases in the amount of paid leave had no effect on child outcomes and had regressive redistribution properties (Dahl et al., 2016).

Targeted child-care programmes, such as the *Head Start* or *Perry Preschool Projects* in the United States, have also been shown to improve the skills and educational opportunities of participating children, especially those from disadvantaged families (see Elango et al., 2015). Importantly, those gains seem to also last into adulthood by improving labour market and other long-term outcomes of participating children. Even when such policies do not have substantial effects on average, they appear to often have an equalizing effect. Both Havnes and Mogstad (2011) for Norway and Cornelissen et al. (2018) for Germany find that public child care is especially beneficial for children from low-income families or families that are the least likely to use child care in the absence of subsidies. Interestingly, Havnes and Mogstad (2011), studying long-term outcomes, find that the expansion of universal child care in the 1970s positively affected the earnings of those from disadvantaged backgrounds more than 30 years later but had little effect on those from high-income families. Accordingly, Havnes and Mogstad (2015) also show that the same child-care expansion directly decreased aggregate measures of intergenerational income persistence for affected individuals. These results demonstrate that the provision of universal child care can have positive effects on intergenerational mobility. However, the impact on intergenerational mobility will depend on the quality of the child care, and specifically how the quality varies with parental background. If children from poorer families attend care of worse quality, public or universal child care may not provide an equalizing effect (Esping-Andersen et al., 2012).

The provision of public education may also increase intergenerational mobility. Public expenditures on education as a share of GDP are negatively correlated with income inequality across countries, while the share of private expenditures appears positively correlated (Blanden, 2009; Ichino, Karabarbounis and Moretti, 2011). Theoretically, public expenditures may enhance mobility by crowding out private expenditures, reducing the importance of private resources for skill investments. The provision of public education, especially at higher levels of education, may also increase mobility by alleviating *credit constraints*. This argument is based on the idea that capital markets are often imperfect and families with fewer resources are unable to borrow to finance their children's schooling, even when their children are expected to benefit from going to school. Such credit constraints appear important in developing countries (e.g. Attanasio and Kaufmann, 2009; Solis, 2017; Cáceres-Delpiano, Giolito and Castillo, 2018), while the evidence from high-income countries is more mixed (Carneiro and Heckman, 2002; Restuccia and Urrutia, 2004; Lochner and Monge-Naranjo, 2012). However, public

education subsidies might also have unintended consequences, if they fail to attract students from low-income families and instead mainly benefit high-income students who would have educated themselves anyway. The subsidies then merely work as a monetary transfer to high-income families without much of an effect on social mobility. While this is unlikely to be the case for basic levels of education, it could be an issue for higher education (see e.g. Fan, Yi and Zhang, 2018).

Researchers have also examined *how* schools affect intergenerational mobility. First, some recent studies have looked at the impact of various school inputs and resources for child outcomes. For example, Chetty, Friedman and Rockoff (2014) find that teacher quality matters but not in a way that particularly benefits low-income families. Fredriksson, Öckert and Oosterbeek (2013) document large positive effects of lowering the class sizes in primary school on long-term labour market outcomes in Sweden. While most students seem to benefit from smaller classes, the effects in terms of employment are especially large for students from low-income families.

Another type of analysis looks at the structure of the educational system. In particular, research has examined if early streaming – the separation of children by ability into different school streams at an early age – harms intergenerational mobility. Extensive evidence on this question is available from school reforms that changed the age at which students were separated into different school types. For example, Pekkarinen, Uusitalo and Kerr (2009) find that the Finnish comprehensive school reform of the 1970s, which postponed streaming from age 11 to 16, increased intergenerational mobility in income. Evidence from similar reforms in the United States (Oreopoulos and Page, 2006), Sweden (Meghir and Palme, 2005; Holmlund, 2008) and Germany (Lange and von Werder, 2017) likewise suggests that early streaming decreases intergenerational mobility. Additionally, cross-country comparisons from international achievement tests show that early streaming is associated with increased educational inequality (Hanushek and Wößmann, 2006).

The labour market

As is clear from the previous subsection, childhood is crucial for fostering social mobility. If all children get a good and healthy start in life, and the schooling system manages to keep skill gaps between socio-economic groups small, then the prospects as adults will be less dependent on the individual family background. However, no society has yet managed to fully equalize educational and other skill opportunities, and we may thus expect that the functioning of the labour market will always matter to some extent. For example, if socio-economic skill gaps are small but earnings inequalities very large, we can still have high intergenerational persistence in incomes and living standards. It is therefore necessary to recognize the importance of schools and the early environment while at the same time paying attention to how and through which mechanisms the labour market may leverage the gaps that arise in childhood.

A recent example is the study by Landersø and Heckman (2017), which finds that despite fairly similar socio-economic skill gaps in Denmark and the United States, differences in earnings mobility between the two countries arise on the labour market. Björklund, Jäntti and Nybom (2017), who study Sweden and the United Kingdom, find larger skill gaps in the United Kingdom, and that this skill gap is leveraged by differences in the labour market returns to skill. These observations are consistent with the “Great Gatsby curve” – the general pattern that countries with higher earnings differentials by skill and more inequality tend to have lower mobility.

Recent evidence with a more causal interpretation also suggests that economic growth and the existence of good paying jobs for those with basic education can foster both absolute and relative mobility (Butikofer, Dalla-Zuanna and Salvanes, 2017). This study also clarifies that growth can have different effects on mobility, depending on its sources. In this case, the growth came from the discovery of large oil fields outside the Norwegian coast, and the labour market surged especially for people with intermediate skills and no higher education. But these are all very broad observations at the macro level. The evidence on how more specific labour market factors and policies affect social mobility is scarcer.

Various targeted policies that increase the employment and earnings of low-income families may also have beneficial intergenerational effects. For example, Bastian and Micheltore (2018) find that the earned income tax credit (EITC) in the United States, which primarily targets low-income, single mothers, has spillover effects both on children's schooling outcomes and their subsequent employment and earnings. The authors argue that the primary channel through which the EITC improves these outcomes is via increases in pre-tax family income, suggesting that the main driver is parental employment rather than increases in net family income conditional on parental employment. It is thus unclear whether other policies that support low-income families financially would be equally beneficial.

Fostering employment opportunities for all can be expected to help improve intergenerational mobility, especially in countries where the pay and other work conditions of low-skill jobs are decent. As suggested by Bastian and Micheltore (2018), positive parental role-modelling through parental employment may be important to avoid cycles of unemployment within certain families. Another pathway to improve life outcomes is through entrepreneurship or self-employment. Recent evidence has found that the home environment explains a substantial share of intergenerational associations in self-employment, and suggests that parental role-modelling is an important mechanism (Lindquist, Sol and Van Praag, 2015). Related research has found that parental resources, and especially parents' own self-employment experience and business success, are important factors for young individuals' transition to self-employment (Dunn and Holtz-Eakin, 2000). Accordingly, policies that better provide pathways to self-employment for all, including role models and financial capital, might be useful in order to equalize opportunities to self-employment.

The social safety net, including, for instance, unemployment, health, and disability benefits, can also impact intergenerational mobility. On the one hand, a broad coverage and reasonable levels of replacement from such benefits can help those with a weaker position on the labour market to maintain their consumption and living standards in recessions and in times of personal difficulties. Especially in developing countries, they may also foster human capital investments in children, as older children may otherwise be forced to act as the family's "insurance" by being pulled out of school in order to work. On the other hand, recent evidence also finds that the dependence on such benefits can be causally related within families, possibly through the creation of certain norms within families (Dahl, Kostol and Mogstad, 2014). If parents' receipt of social benefits causally increases the likelihood that their children receive such benefits, too high benefit levels or too liberal monitoring of them could also create intergenerational cycles of welfare dependence and harm social mobility.

These arguments relate to previous research on the importance of social and family networks. Such networks are generally important for finding jobs, and almost by

definition provide children from advantaged backgrounds with easier access to good jobs compared to their more disadvantaged peers. A study using Canadian data shows that the likelihood that an adult child works for the same employer as the father is large, and disproportionately large among those with fathers who earn the highest incomes (Corak and Piraino, 2011). Policies that decrease the importance of family or other networks for access to good jobs should thus be expected to increase mobility, all else being equal.

The impact of networks on labour market outcomes and intergenerational mobility is compounded by labour market (or other) discrimination based on inherited characteristics. Significant effort among researchers has gone into trying to identify the extent of discrimination using decomposition techniques, correspondence studies and laboratory experiments, or by focusing on occupations or jobs where actual productivity is more easily observable. While most such studies concern the United States and other high-income countries, they almost uniformly find that minorities and women are victims of significant wage discrimination.²⁵ It is plausible to suppose that the extent of discrimination would be at least as large in many developing countries around the world.

Anti-discrimination laws and other policies to combat unequal treatment and pay on the labour market among ethnic groups are thus almost certain to improve mobility, at least if those policies are well designed. Suppose, say, that one ethnic group is persistently discriminated against and earns 20 per cent lower wages than the majority group. Since ethnicity is transmitted across generations, this will directly and almost mechanically feed into intergenerational persistence. Alleviating such discrimination could therefore have large effects on intergenerational mobility, especially in countries with large minority groups (see e.g. Chetty et al., 2014a).²⁶ Ethnic or other discrimination can also lead to and interact with residential segregation in affecting labour market outcomes and intergenerational mobility. In case of both network effects and discrimination, the resulting inefficient allocation of talents to jobs is more likely to exist in labour markets where competition is limited, such as when there is a high degree of monopsony power or labour market frictions. Policies that increase employer competition and lower frictions on the labour market are thus expected to decrease the role of discrimination and foster intergenerational mobility, all else being equal.

Recent evidence also points to the potential importance of unions for intergenerational mobility, both at the individual and the aggregate level. Freeman et al. (2015), using US data, find that children whose parents belong to trade unions have higher incomes as adults than those of otherwise comparable non-union parents, especially when the parents are low-skilled. Similarly, they find that children from communities with higher union density have higher average incomes relative to their parents *compared to* offspring from communities with lower union density. While these findings do not necessarily all have a causal interpretation, they do indicate a strong link between membership of trade unions, the size of the middle class, and intergenerational mobility.

²⁵ See for example Altonji and Blank (1999); Bertrand and Mullainathan (2004); Darity and Mason (1998); Goldin and Rouse (2000); and Lang and Lehmann (2012).

²⁶ *Exactly how large those effects would be depends on the amount of variation in outcomes within racial or ethnic groups relative to the variation between those groups (see e.g. Appendix D in Chetty et al., 2014a).*

4. Conclusions and policy implications

Research on intergenerational mobility has provided us with a large body of interesting descriptive and causal evidence. Recent insights on the descriptive side include (i) the observation that mobility appears lower in low- and middle-income countries than in high-income countries; (ii) that mobility differences still can be large between countries with similar income levels, such as the low mobility observed for the United States and the high rates of mobility in the Nordic countries; (iii) that the extent of mobility varies not only across countries but also across areas within countries; and (iv) that mobility levels are negatively correlated with income inequality on both the national and sub-national levels. However, it remains unclear whether it is the inequality as such that causes lower mobility or whether other common features of high-inequality countries such as certain policies and institutions are the main drivers. It is most likely a combination of both.

An important focus of this paper is the underlying drivers of intergenerational mobility – what policies are effective in order to promote mobility and hopefully more equal opportunities? Indeed, much of the recent evidence does indicate that policies can affect the life chances and opportunities of children. For example, an important insight in recent research has been that skill gaps tend to open up very early in life, and then continue to grow through childhood due to a learning-begets-learning mechanism. It is therefore likely that the most efficient mobility-enhancing policies are those that improve the conditions and skills of disadvantaged children as early in life as possible. Accordingly, early interventions such as health-improving policies for infants and mothers, and quality child care, have been found to be especially beneficial for children from low-income families. Comprehensive schooling systems also seem to promote mobility, while the separation of children into different school tracks according to their abilities and ambitions appears to diminish mobility.

The labour market is the arena that determines the consequences of these early skill or other gaps in terms of incomes and standard of living. Even small skill gaps by parental background can be harmful for mobility in a highly polarized and unequal labour market, and vice versa. For example, recent research has shown that mobility differences between countries are partly due to differences in skill inequalities but that at least as much or even more is due to how labour markets *reward* skills and redistribute incomes.

However, research has provided less *causal* evidence on labour market factors and policies, and how they affect intergenerational mobility. Evidence from Norway indicates that economic growth in a form that generates mainly high-quality middle-class jobs can increase both relative and absolute mobility. This specific example concerns the Norwegian oil boom in the 1970s, which spurred the demand for workers without an academic education. It is possible that the ongoing development in many middle-income countries, with a rapid growth of middle-class manufacturing jobs, may have similar positive effects on mobility. Evidence from the United States also emphasizes the role of the middle class, suggesting that unions may be important for the size of the middle class as well as for intergenerational mobility, both at a macro and micro level.

It is also plausible that discriminatory practices on the labour market harm mobility. Ethnicity is generally inherited, and if some groups are systematically privileged then

group inequalities are almost certain to persist across generations. Policies to combat such discrimination are thus likely to improve mobility, be they in the form of well-designed anti-discrimination laws or policies that increase employer competition and lower frictions on the labour market.

Closely related is the discussion on the importance of social and family networks for labour market success. Evidence has shown that a large share of jobs are found through such networks, and that those at the very top of the income ladder tend to take advantage of such opportunities the most. While the existence of social and family networks can indeed be a good thing for matching on the labour market, they are unlikely to be beneficial for social mobility. Through the lens of mobility, it may thus be advisable to try to promote other and more equal channels of job finding and to decrease the importance of such networks, especially for the most attractive jobs and employers.

Parents also act as important role models, and research suggests that having an employed parent is causally linked to employment and other labour market outcomes of children from low-income families. Similar results have been found as regards self-employment: parental role-modelling and other resources are important drivers of young individuals' transition to self-employment. In order to keep the doors to both wage- and self-employment open for all, it thus appears crucial to provide all children irrespective of parental background with access to both role models and other necessary (e.g. financial) resources. More broadly, the creation of employment opportunities for all is likely a key to improve intergenerational mobility, especially in countries where the pay and other work conditions of low-skill jobs are decent. In countries with more dispersed and polarized labour markets, policies to improve the conditions of low-skill jobs should be of equal importance.

There are important differences in intergenerational mobility across the world today. Some countries do relatively well, while in others mobility remains a "dream deferred". In particular, developing countries and some middle-income countries have very low rates of intergenerational mobility. To promote mobility and opportunities in such countries it is useful to look at what has worked historically in today's high-income countries, especially the more highly mobile ones such as the Nordic countries and Canada. Keeping skill gaps small through childhood appears crucial. Promoting maternal and infant health, improving access to child care of good quality, and keeping the schooling system comprehensive and integrated are examples of policies that have been successful in this regard. But the labour market is equally important. Most evidence suggests that it is important to promote policies that grow the middle class and provide a more widespread access to good paying jobs and attractive employers. To achieve the latter, the evidence suggests that decreasing the importance of family and social networks for finding good jobs and combatting labour market discrimination may be crucial. On a broader scale, it appears important to reduce earnings inequalities and foster employment for all in order to reduce intergenerational inequalities. Small disadvantages in childhood can otherwise become highly consequential in terms of incomes, living standards and quality of life.

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