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SCHOOL OF ECONOMICS AND BUSINESS

MASTER'S THESIS

LEGAL AND ECONOMIC CHALLENGES OF SOCIAL MOBILITY

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LIST OF ABBREVIATIONS

Eurostat Statistical Office of the European Union
OECD Organisation for Economic Co-operation and Development
PISA Programme for International Student Assessment
EU the European Union
IMF International Monetary Fund
GDP Gross Domestic Product
EU/EU-28 European Union
DK Denmark
ES Spain
IT Italy
NL The Netherlands
PT Portugal
SI Slovenia
FI Finland
SE Sweden
UK The United Kingdom

INTRODUCTION

Super-fast economic changes accompanied by the globalization of markets and related technological changes have an essential impact on incomes and therefore the rise of inequality. Seemingly inequality is so profoundly rooted in social and economic structures that is unclear what changes are needed for new institutional framework, policies and economic players, to fight it properly. Traditional law and economics scholarship confronted with an ultimate issue of vastly increased inequality face several, notorious, challenging questions. "What should be done about rising income and wealth inequality? Should the design and adoption of legal rules take into account their effects on the distribution of income and wealth? Or should the tax-and-transfer system be the exclusive means to address concerns about inequality?" Answering these questions should lead towards the evidence giving a realistic solution of how to ensure people better life standard.

Recent trends of social inequality patterns still depend on individuals' background through parental or socio-economic background and corresponding wage outcomes. The role of public policy in coping with social immobility should be re-examined and re-shaped in a way that education would become beneficial to individuals of all abilities, by having opportunity and fairness in focus. Centre of attention of public policy should be on informed and focused social investments providing high-quality early education, resulting in increased equality of opportunity. Therefore, normative criteria of wealth-maximization (Friedman, 1970; Posner, 2011; Becker, 1993) should be defined in a way to provide legal, behavioural and economic arguments for an improved regulatory response. Attempts to define how the law and behavioural economics can resolve the issues of social exclusion, early education, optimal governmental intervention, and their possible success or failure, should be the focus of social mobility discussions.

The importance of poverty and inequality on the existence and stability of social fabric can hardly be overstated. In the last thirty years, the gap between rich and poor has reached its highest level. Such inequality represents a heaven-like environment for all sorts of populisms, extremisms, demand for trade protection, restriction on immigration, union protectionism, numerous anticompetitive measures, useless government subsidies and represents an outmost threat to, as history witnessed countless times, fragile social fabric. In other words, identified high inequality slows down economic growth, destroys the social fabric, adversely affects social mobility and hampers social wealth.

The aim of this master thesis is to investigate which are the factors that can be controlled or regulated by law-makers and would lead to higher social mobility, with focus on higher education as the main tool to tackle inequality (i.e., how does legislation, and level of inclusive and equitable quality education influence social mobility). In other words, would the adoption of optimal legal regulation of education, designed to bring society closer to equality, increase social welfare? The proposed research project seeks to address the following research questions:

1. How should an optimal legal regulation of education look like?
2. Do countries with higher taxes (more redistribution) have more inclusive and equitable quality education?
3. Do countries with more inclusive and equitable quality education have higher social mobility?
4. What kind of policy mix of both legal rules and taxes do countries with high social mobility have?
5. Do individuals who get a quality public higher education and have low-income background achieve higher income levels than their parents?

Assumptions of wealth maximization as a concept of efficiency were defined by Posner (1980) stating that resources are scarce in relation to human wants; and people act rationally to maximize their satisfaction or, in economic terms, their personal "utility". Public choice theory assumptions can be summed up as Schmolke (2015) defined it: "The allocation of resources is determined by the political process, best explained as strategic interaction between all participating groups (voters, public administration and politicians), where every actor seeks to maximize their personal utility as it follows from rational choice theory."

This thesis attempts at contributing to the existing literature in several ways. First, it emphasizes the ex-ante role of law as an essential inequality preventive mechanism. Second, it argues that the shift of the EU lawmakers' regulatory attention from the ex-post policy intervention towards the ex-ante focus on removal of its causes is of vital importance. Third, it employs empirical investigation of the causal relationship between education and income inequality and/or Gini coefficient. Notably, to address specified research questions, this thesis employs a multilevel model. Multilevel models are statistical models of parameters that vary at more than one level. Meaning some variables are clustered or nested within other variables. In our case, model contains measures for individual independent variables as well as measures for countries within which the independent variables are grouped. These models serve as generalizations of linear models (linear regression); however, they can also be extended to non-linear models (Douglas, 2004). The thesis also seeks to examine previously stated research questions by summarizing the recent economic literature on early adulthood, focusing on essential ideas in the literature on family influence, for example, such as Heckman, Urzúa and Vytlacil (2006) and Rubinstein and Weiss (2006) models of schooling choices and post-school on-the-job investment. By providing an empirical strategy to improve previous researches a multilevel model is employed. Findings demonstrate systematic cross-national variation in the association between education and social mobility.

Having said all that it should be emphasized that the *ex-ante* education mechanism should not be regarded as a sole or the only possible regulatory tool to tackle income inequality. Policymakers should identify different sources of market failures/rents/inequalities and apply for each of them its specific, *ex-ante* or *ex-post* (or combination of both) instrument (Tinbergen, 1952). The employed model includes 9 (out of total 27 countries) European Union (hereafter:

EU) member states, Denmark, Spain, Italy, the Netherlands, Portugal, Slovenia, Finland, Sweden, and the United Kingdom (hereafter: the UK), which represents a sample of one third. To ensure diversity in model, three types of countries are included by aggregating the data: 1) countries with high public investments in higher education (e.g., the Netherlands), 2) countries with high private investments in higher education (e.g., the UK) and 3) countries with moderate public and private investments in higher education (e.g., Spain). The model includes variables that influence both the independent (X) and the dependant (Y) variable in regression analysis.

Among all the investigated factors there is potential direct or/and an indirect effect. Namely, the level of education might have an impact on the level of income of an individual, assuming that a rising level of education has a positive spillover effect on both social mobility and level of income. At the same time, it is not implausible for a rising level of educational attainment to decrease social mobility. The first assumption of empirical model conducted in the fifth chapter is that access to high education leads to better employment outcome, and moreover, that education is the most promising channel to social mobility.

While the direct effect of education on income inequality and/or Gini coefficient is thus positive, the indirect one is negative. If some of these effects cancel each other out it is called a suppression effect. In such constellation, the regression would show that education does not affect income inequality and/or Gini coefficient. However, while correct, this result would only tell half of the story. Namely, this thesis omits discussion on whether statistics on income inequality provide clear-cut guidance for the social policy or even a clear picture of income inequality and instead takes the problem of inequality as an indisputable one (Posner, 2011). Moreover, the thesis does not discuss the perplexing issue of whether inequality is at all inefficient and what might be an "optimal" amount of inequality in a given society. Due to the limited scope of the thesis, focus is on the EU Member States.

Moreover, several caveats should be stated. The first one relates to the employed dataset. Namely, the available and employed dataset also partly determines the obtained results and hence represents objective limitation of performed empirical investigation. Secondly, the problem of omitted variables can occur due to misspecification of a multilevel linear regression model as a result of data scarceness. Due to data that is not available some variables are omitted from the regression, which results in whether upward (over-estimating) or downward (under-estimating) effect on explanatory variables. While rich datasets with extensive background characteristics would be helpful in this regard, omitted variable bias remains problematic in multivariate regression analysis. It can also be that some of the variables were left out of the model, due to a failure of theory or data collection. If any of those variables are correlated with the included variables, the estimates for included variables will be biased (Helland & Klick, 2011). Fixed effect method, however, seems very promising in research on social mobility, as many studies in the education and economics literature have implemented this approach (Ehrenberg, Zhang & Levin, 2006; Card & Lemieux, 2000; Heller, 1999; Kane, 1994, 1995,

2004). The key element for fixed effects is access to multiple observations for each unit of analysis, tracking cross-sectional units (in this case countries) over time (Cellini, 2008).

The master thesis is organized as follows. It starts with a review of trends of inequality and policy implications for social inequality. The second chapter is composed of definitions of terms, some historical trends in the evolution of the income distribution and a review of current economic and legal literature. Further, it is focused on inequality and redistribution, income inequalities caused by the financial crisis (with a focus on the crisis in 2008) and implications of law within the inequality challenges.

Chapter 3 gives an overview of inequality trends, job gaps, impact of inequality on economic growth and synthesis of current economic and legal literature findings. Even though the long-term trend in absolute mobility across the decades in social mobility is upwards, the more recent trends in social mobility have been less rosy (Solon, 1999; Chadwick & Solon, 2002; Mazumder, 2005; Bernstein, 2003; Wooldridge, 2005; Wessel, 2005; Scott & Leonhardt, 2005).

In the fourth chapter, the focus is on inequality and education, investigating how educational policies should look like to ensure equitable and inclusive education, what public law regimes and tuition fee systems are among different countries, and how the educational system influences the employment outcomes. Unequal opportunities in education are non- negligable sign of inequalities. Namely, differences in educational attainment may weaken social cohesion and, furthermore, social mobility.

The fifth chapter provides an overview of countries trends and empirical analysis of countries key indicators related to education and inequality. Secondary data from publicly available databases (EU, OECD, IMF, etc.) was used for the empirical analysis. As the empirical analysis will be mainly focused on countries of EU master's thesis will focus on EU initiatives. In the conclusion of the thesis, the results will be discussed, and normative policy implications and suggestions will be formed. Equality is expected to affect incentives, and politicians must choose whether to prioritize equity or economic efficiency (Kandek & Kajling, 2017).

1 THEORETICAL BACKGROUND, DEFINITIONS AND THE REVIEW OF LITERATURE

Social mobility is defined as the ability to move upward or downward social strata depending on one's education, occupation or another social variable (Heckman, 2014). Sociology explains social mobility as a change in social status. Factors influencing the social mobility besides gender, education, and occupation are industrialization, urbanization, transportation, communication and by a psychological approach to social mobility – dissatisfaction (Grusky & Hauser, 1984; Erikson & Goldthorpe, 1992). Social mobility refers to the extent to which, in a given society, individuals' social status changes either within the life-course (intra-generational) or across generations (intergenerational) (Sørensen, 1975). Intergenerational mobility – which implies the simultaneous consideration of the position of parents and their offspring in society – is therefore only one aspect of social mobility. While both intergenerational and intragenerational types of social mobility are intimately related and determine the life chances available to individuals and their families, d'Addio (2007) investigated only intergenerational transmission of advantages and disadvantages. Social mobility can be measured either quantitatively, using measures of economic mobility such as comparison of income between parents and children, or qualitatively, usually measured by the difference in occupational status and level of education between parents and children.

Further social mobility can be measured by social class, education or occupation; however researches usually focus on measures of income or wages (Causa & Johansson, 2009). By working in a different occupation than parents, however obtaining a similar social position, individual faces horizontal mobility. Vertical mobility, on the other hand, is further divided into downward and upward mobility, as explained earlier. In addition, possible changes in vertical mobility can also be achieved through marriage or job upgrading (Warner, 1949; Goodman, 1969). Social mobility, as the ability to move upward or downward the social ladder, refers to a change in the social status of children compared to their parents and is influenced by many factors – education, occupation, gender, etc. Climbing the social ladder can be more or less difficult depending on the characteristics of society. On the one hand, we have the US – 'land of opportunity' – where it is believed that with hard work and dedication anyone can succeed. On the other hand, there are still societies as Indian, where it seems impossible to beat the caste system. People's social position in the cast system is decided upfront, depending on their assignment rather than attainment, and moving between casts is very rare. Those born into the lowest cast, therefore, can never become part of a higher cast (e.g., South Africa, India). Another possible social system is when society is open and has a class system, which enables social mobility. In class systems, social mobility is possible and mainly depends on achieved status such as education, more than ascribed status such as gender or race. This system is typical for developed countries, e.g., the US, Europe, etc. Furthermore, the literature distinguishes between absolute (are you better off compared to the previous time period) (Ringen, 1997, pp. 129–48; Hellevik, 1997; Noble, 2000; Payne & Roberts, 2002) versus relative mobility (are

you better off compared to the rest of society, especially your generation) (Swift, 2000; Swift & Marshall, 1997).

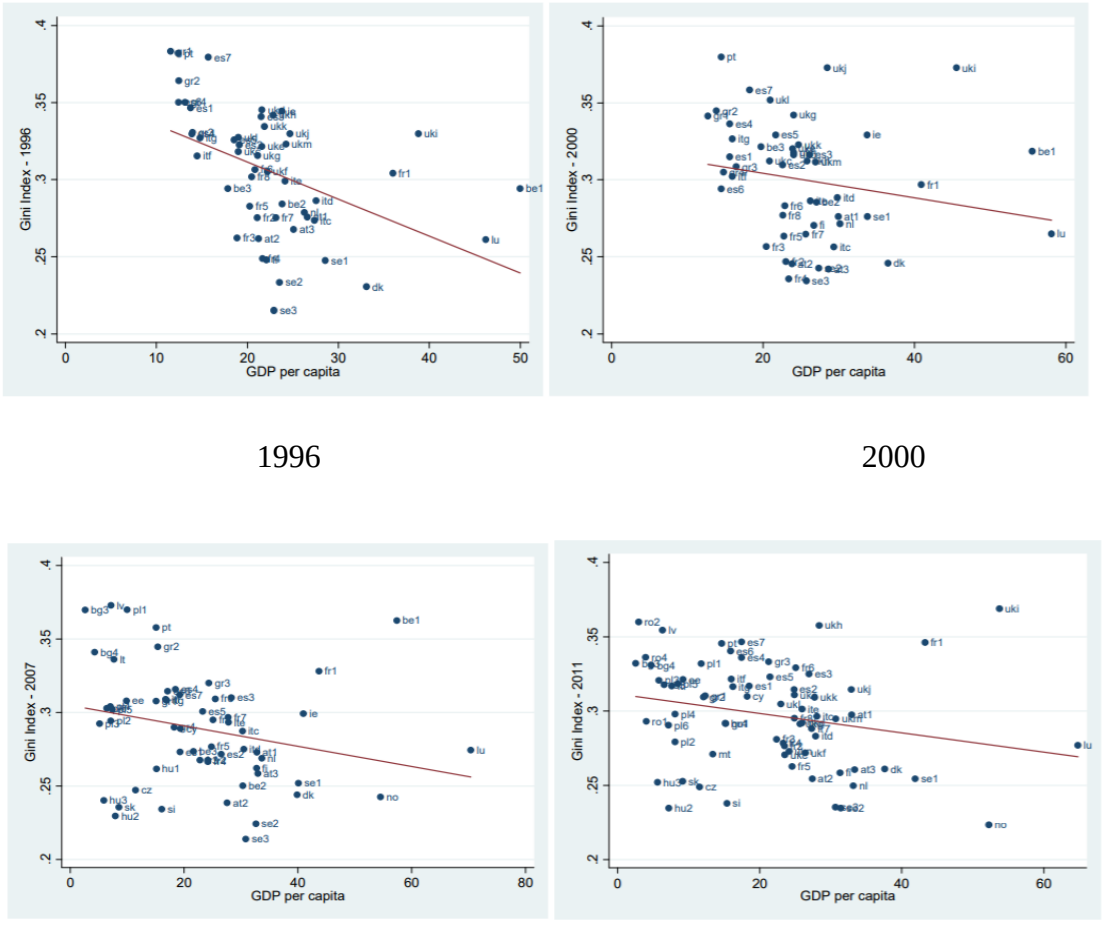
Often there is a distinction between structural mobility and individual mobility, where structural mobility refers to major changes in society that can improve or worsen opportunities of the whole society to move up the social ladder. As mentioned before industrialization was one of the social changes that positively affected a large number of people and improved their socio-economic status. Another factor is better education, allowing people to find higher-level, better-paid jobs compared to their parents. However, it is not always a positive trend when talking about mobility. Factors such as gender, race, religion, occupation, health, etc. influence individual mobility and even in highly developed countries such as the US female, racial minorities and disabled people still have fewer opportunities when talking about upward mobility (Hout, 1988).

Intergenerational mobility and inequality relationship is in theory quite often unclear, due to difficulties to determine causality. On the one hand, rise in inequality among parents will lower possibilities for social mobility, as it is easier for better off parents to provide their children with a quality education that less fortunate parents cannot afford (Bowles & Gintis, 2002a, 2002b; Burtless & Jencks, 2003). However, it is argued by Solon (2004), that inequalities will be diminished to a certain extent by public programs benefits for less advantaged children. Public policy concerns on inequality had aroused public debate on whether the same opportunities for everybody make redistributive policies needless. Furthermore, it can happen that other social groups (e.g., middle class) can benefit from redistributive policies more than the poorest part of society (Peltzman, 1980; Van del Walle & Nead, 1995; Alesina, 1998). For example, in the US those who believe there are equal opportunities for all (so-called – the land of opportunities) are not in favour of government redistribution. Romer (1975) and Meltzer and Richards (1981) made an important contribution in this area with uncovering relationships between income distribution and redistributive policies.

There are several factors linked to the existence of inequality, as Barro (2000) pointed out an assessment of factors of inequality is closely connected to the idea of the Kuznets (1955) curve, further developed by Robinson (1976). It is stated that when an agriculturally oriented country moves to industrialization, both income per capita and inequality increase, and this gives privileged status to small, rich groups of people in urbanized areas. With industrialization initially poor people's income increase which results in a decrease of aggregate inequality, and this relationship between economic growth and inequality is known as the Kuznets inverted-U curve. With technological innovations, the inverted-U pattern will initially rise inequality because of high incomes owned by few who get extra benefits of the innovative technology. More people moving into the sector of the new technology is lowering inequality and expanding overall per capita income. Furthermore, the level of inequality is closely connected to the period of implementation of new technologies (and also other socio-economic and political aspects) and should result in reduced income inequality (Marrero & Rodríguez, 2014).

Other relevant studies analysing the relationship between inequality and economic development are Partridge (2005) for the US, Rodríguez-Pose and Tselios (2008) for Europe and a recent study by Royuela, Veneri and Ramos (2014) for the OECD. In Figure 1 it is shown the relationship between the Gini Index and GDP per capita over the years. It shows that the more developed countries, on average, have lower inequality levels, as predicted by the Kuznets model in the long run. The negative slope of the Kuznets curve may be due to Europe's development to a region, in the worldwide context.

Figure 1: Relationship between inequality (Gini index) and economic development (GDP per capita)



1996 2000

2007 2011

Note: GDP per capita is expressed in thousands 2005 constant price euros per person.

Source: Royuela, Veneri & Ramos. (2014).

The reason why social mobility may be more relevant nowadays than ever before is widening income inequality in advanced economies, as the gap between richest and poorest is at its highest level in decades (IMF, 2015). The one percent of the richest hold fifty percent of the global wealth ($140tn), when on the other side of wealth distribution seventy percent of the world's working age population, hold only two-point-seven percent of the globe's total wealth

(Global Wealth Report 2017). Socio-economic status seems to be sticky at the top as well at the bottom; therefore there is a need for institutional and legislative changes that would make the process of upward mobility achievable to young talents. The main focus of the legislative framework should be on non-discriminatory educational policies (gender and race equality) where everybody has equal opportunities to obtain an education. Efforts towards higher equality are usually costly and include some sort of redistribution; however, lawmakers must decide whether they will prioritize economic efficiency or equality (Kandek, 2017).

Benabou and Ok's (2001) "prospect of upward mobility" (POUM hypothesis) investigates individuals or households who are currently at the bottom of the income distribution, or at least below the average income and have expectations to become richer. This rather 'optimistic' perception of individuals who believe that they can overcome the social barriers, of course, cannot be true for everyone with low incomes. As it is more likely for the poor to stay poor in the future, the poorest in the society will be advocating for the redistribution. It is highly likely that today's policies will persist in future, therefore a certain level of commitment in setting fiscal policies is reasonable, and it is of foremost importance that policy is formed in a way to guarantee a minimum level of redistribution ensuring valuable insurance as one's income may go up or down (Benabou & Ok, 2001). Regardless, whether those below average income earners believe that they will overcome this average in the future, it is justified to conclude that rich expect to become even wealthier. It looks like this intuition behind the prospect of upward mobility is overwhelming or at least mismatching with everyone holding accurate hopes for their future income (Benabou, 1998). Too often people do not have realistic views on their own abilities and apparently want to give an image of 'smartness,' despite the fact this does not influence their economic situation. As Piketty (1998a) notes, the reason why people care about these attributes is that they connect them with a higher possibility for success and it depends on observed social mobility experience.

1.1 Inequality and redistribution

Numerus studies have tried to measure social mobility (see Atkinson, Bourguignon & Morrison, 1992; Corneo & Gruner, 2000) and determine how inequality might affect intergenerational mobility via the demand for redistribution (Ravallion & Lokshin, 2000; Corneo & Gruner, 2001; Croneo, 2002). All these studies concluded that upward mobility significantly affects attitudes towards redistribution. Intergenerational social mobility was found higher in the US (Checchi, Ichino & Rustichini, 1999) in comparison to Italy where redistributive policies are more extensive than in the US. Same results were found by Bjorklund and Jantti (1997) comparing Sweden and the US. Higher income mobility of the US compared to Germany resulted in the examination of different measures of mobility by Gottschalk and Spolaore (2000). Especially for the middle class, where in the voting model the position of the median voters is particularly important, the median voter in more unequal societies tends to be below the mean income and therefore, may have a stronger preference for redistribution (Alesina & Glaeser, 2004). Contrariwise, when inequality increases the political influence of

the wealthy, the need for governments to introduce progressive policies may narrow (Burtless & Jencks, 2003). Furthermore, higher inequality might reduce intergenerational resulting in adverse peer effects for children from low-income families (Durlauf, 1996).

As it was recognized by Chetty (2014), there are several factors that predict differences in social mobility: the level of segregation in an area, meaning the more segregated cities tend to have lower social mobility and where low- and high-income families live together in close-knit community social mobility is higher. Second is the level of income inequality as communities with smaller middle class tend to have lower social mobility. The third factor that strongly predicts differences in mobility is the quality of public schools, meaning kids from low-income families tend to do better in areas where public schools are better. The fourth factor is the strength of social networks. Communities that tend to bring people closer together are those with higher social mobility. The last, fifth factor is family structure; for example, single-parent families tend to have lower social mobility in general.

Alesina and Ferrara (2001) analyzed preferences for redistribution in the US, trying to explain the dynamics between individual support for redistribution and social mobility. Research had shown that the influence of mobility on attitudes toward redistribution is affected by individuals' perception of fairness in the mobility process. Those who believe that society offers equal opportunities are most opposed to government intervention in distributive matters, and those who see the social rat race as a biased process do believe that social mobility is a substitute for government intervention in redistributive matters.[1] Alesina and Ferrara (2001) investigated the individuals' perceptions of social mobility and redistributive policies; however, another approach is finding significant evidence on how redistribution among society affects social mobility. Other studies (see Granato and others, 1996; Frey & Stutzer, 1999) analyzed factors of well-being by investigating institutional factors and role of democracy, the unemployment – having a strong effect on society welfare and effects of inflation (Di Tella, MacCulloch & Oswald, 1999; Wolfers, 2002), the role of partisanship in politics (Di Tella, MacCulloch & Oswald, 1999) and the role of social norms and its economics effects (Stutzer & Lalive, 2000). Another important set of researches is focused on redistributive policies (see Romer, 1975; Meltzer & Richards, 1981; Piketty, 1995; Benabou & Ok, 2001) showing what are the effects of social mobility to preferences for redistribution.

Corak (2006) and d'Addio (2007) have found significant evidence on the persistence of low social mobility in the US in comparison to Nordic European countries and Canada using the intergenerational income elasticity as a measure. In the latest, social mobility is relatively high, meaning that parents' income and social status have little or no impact on children's future achievements. Commonly used approach to social mobility is so-called Becker-Tomes model (Becker & Tomes, 1979, 1986) which assumes that parents, given their preferences and

[1] Literature shows that influence of mobility on attitudes toward redistribution is affected by individuals' perception of fairness in the mobility process, where those who believe that society offers equal opportunities are most opposed to government intervention in distributive matters, and those who see the social rat race as a biased process do believe that social mobility is a substitute for government intervention in redistributive matters.

constraints, sacrifice part of resources (that could be used for consumption) to invest in their children (usually their education) or so-called human capital. Next, there are few studies (Foroohar, 2011; Zakaria, 2011; Aaronson & Mazumder, 2008; Putnam, Frederick & Snellman, 2012) that had found significant evidence on declining social mobility, on the other hand Hertz (2007), Lee and Solon (2009), and Hauser (2010) had not found any trend of social mobility in their studies. Another important approach was made by Blanden, Gregg and Macmillan (2006) finding empirical evidence on the transfer of skills among generations. Not only this suggests that better achievement may be due to genetic, but it also makes a point that when parents inputs are low, the state intervention could compensate for it, by investing in the early stages of child's life – especially in the education. These interventions could have an important impact on decisions on whether to continue with high education (full-time) and furthermore, would impact social mobility through education (Goldthorpe & Jackson, 2007).

1.2 Income inequalities during the crisis and fiscal consolidation

The persistent growth of inequality during the last three decades had resulted in social dissatisfaction, populism, and political instability. Many ongoing debates had risen the question of the influence of the 2008 financial crisis to this trend. The crisis forced many European countries to adopt counter-cyclical fiscal policies. Result was high deficit (exceeding 10%) that created a necessity for budgetary consolidation to control the rising debt to GDP ratios and to lower fiscal deficits.

Very often countries with substantial income inequality have more difficulties to control impacts brought by fiscal consolidation. It was found by Ilzetzki and Vegh (2008), who studied the effects of several factors on fiscal multipliers, that countries with higher income inequality are associated with higher declines in output followed by a decrease in government consumption. When talking about income inequality, the IMF failed to consider an important dimension of inequality by expecting that fiscal consolidation and higher income inequality are a response to contractions in government consumption (Brinca, Ferreira, Franco, Hotler, Malafry; 2017). Romei (2015) have found that when implementing fiscal consolidation, this should be done quickly and through cutting public spending. There is a large number of researchers looking for the potential impact of fiscal consolidation on economic growth. Giavazzi and Pagano (1990) argued that fiscal consolidation adjustments could have an expansionary impact on the economy via the so-called non-Keynesian effects (Feldstein, 1982). On the other hand, government deficits can be very closely related to the so-called 'crowding-out effect' and deficiencies due to tax cuts could result in net negative economic effects. As Blanchard (1990), expansionary effects of fiscal adjustments can work through both the demand and the supply side. On the demand side, a fiscal adjustment may be expansionary if agents believe that the fiscal tightening eliminates the expectations about the need for further adjustments in the future. Regardless the impact on GDP, cutting expenditures or raising taxes is more likely to result in a stable economic growth when fiscal consolidation is carried out.

Alesina and Ardagna (2010) had shown that tax cuts are more expansionary than spending increases in the case of a fiscal stimulus. Furthermore, expenditure cuts can be much more efficient than the increase in taxes when trying to stabilize the debt and avoiding economic recessions. One part of these results can be assigned to a more substantial monetary stimulus that is followed by a fiscal adjustment which is rather spending-based than tax-based. Furthermore, deficit-financed tax cuts are supposed to bring more effective stimulus to the economy. It is usual that the literature presents the impact of fiscal adjustments on the level of aggregate income but, the huge increase in deficits and rising debt now need to be put back on the 'normal' levels by implementing fiscal austerity. It was questioned many times what the actual effects of fiscal consolidation on income are, and Bertola (2009) in Inequality, integration, and policy: issues and evidence from EMU provides an evidence on the case of EMU arguing that there is a positive and significant (although small) impact on income inequality, when dealing with fiscal austerity measures.

1.3 Law and inequality

Traditionally law and economics argue that the tax system, and not the legal system, should be exclusively used to redistribute income. The double-distortion argument identified by Kaplow and Shawell (1994, 2000) argues that the redistributive legal rules supposedly only add to the distortions already created by the tax system. However, according to Dimick (2016), Markovits (2005), and De Geest (2013), there is no compelling reason why redistributive legal rules would be distortionary. They argue that legal rules are likely to be more attractive than taxation especially in cases where inequality itself or normative concerns about inequality are high (Dimick, 2016). Dimick (2016) concludes that taxation should not be the exclusive tool used to redistribute income, rather the optimal set of policies will use a mix of both legal rules and taxes to redistribute income. The double-distortion has been a subject of extensive debate, and recent cataclysmically growth of inequality has amplified the media-political-scholarly interest in their argument (Liscow, 2014). Furthermore, several law and economics scholars that challenge Kaplow and Shavell's decisive argument advocate formation of the equity-distributive-informed legal rules (Avraham, Fortus & Logue, 2004; Blumkin & Margalioth, 2005; Kaplan, 2003; Fennell & McAdams, 2016).

When talking about efficiency related to wealth maximization (Coleman, 1980), there are two best-known definitions, Pareto efficiency and Kaldor-Hicks efficiency (Posner, 1997). Pareto efficiency argues that allocation of income (for example) is Pareto superior, if by making one person better off no one is worse off and is, therefore, called Pareto improvement (Stiglitz, 1988). Another concept to compare economic allocations according to their level of inequality is Lorenz dominance, which comes from Lorenzo curve (Hindriks & Myles, 2006). The Lorenz curve plots the percentage of total income earned by various portions of the population when the population is ordered by the size of their incomes (Gastwirth, 1971). Lorenz curve enables comparison of two different income distributions and ranks them depending on the inequality of society. Lorenz curve and Lorenz dominance also measure the redistributive effect of

taxation, and a common result in public economics shows that if a tax system is more progressive (e.g., proportional or regressive), then it should also be more redistributive than the others (Jakobsson, 1976). For example: *"Suppose that two tax schedules give rise to income distributions after tax with nonintersecting Lorenz-curves, then the tax schedule related to the dominated Lorenz-curve can be considered unambiguously more redistributive than the other,"* was stated by Jakobsson (1976). We can conclude that this is also true for the distributive effect of legal rules and describe *"a legal redistribution - as one where the distribution of income is caused by the legal rule Lorenz – dominates the distribution of income prior to the enactment or application of the legal rule"* (Dimick, 2016).

Governments, and to some extent also other institutions, provide benefits, such as public education, police protection, health care, pensions, poor relief, etc., without any direct charge, and this has a differential impact on the welfare of different income groups. It is important not only to measure this impact but also to determine how the costs (primarily taxes) are distributed among income classes. It is a fact that the poor, even though they pay higher taxes that one might think, receive even more in transfer than they pay in taxes, though perhaps only slightly more (Posner, 2011). In OECD (2002) study a number of policy and institutional factors affecting the labour market, anti-competitive product market regulations (e.g., establishing entry barriers in potentially competitive markets or restricting price competition) were found to have significant negative effects on the non-agricultural employment rates of OECD countries (OECD, 2002). The evidence also points to significant effects of employment protection legislation[2] and industrial relations regimes[3] (e.g., bargaining arrangements, business associations, business codes of conduct, etc.) on innovation activity in manufacturing. Across OECD countries, wage dispersion is lower in countries where institutions compress the distribution of wages (e.g., the Nordic countries). However, recent OECD studies showed that such institutions likewise reduce employment among older workers and therefore reduce the overall share of wage-earners in the economy. Bassanini and Duval (2006) study found an institutional effect on employment not only through their impact on aggregate unemployment but also through their effects on labour market participation.[4] In an average OECD country, high unemployment benefits and high tax wedges are found to be associated with lower

[2] Countries where product market regulations and employment protection legislation are relatively strict also tend to specialize in industries characterized by low wage premia. Features of the institutional and regulatory environment affecting the functioning of labor markets, indicators of the strictness of Employment Protection Legislation (EPL) based on institutional procedures regarding dismissal practices for regular workers and legislation on fixed-term and temporary work agency contracts, may reflect differences in the innovation process across industries, see OECD (2002).

[3] Can have independent effects on innovation activity, but the intensity of this effect is likely to depend on the way these policies and institutions interact with each other. Restrictive EPL and highly coordinated industrial relations regimes generally encourage firms to resort to internal labor reallocations and undertake firm-sponsored training. industrial relations regimes raise job turnover and tend to increase wage dispersion and skill premia, see OECD (2002).

[4] Particularly for those groups at the margin of the labor market, group-specific employment rate equations are also estimated. These effects are high and long-lasting unemployment benefits, high tax wedges and stringent anticompetitive product market regulation, which increase aggregate unemployment, when coordinated wage bargaining systems are estimated to reduce unemployment.

employment prospects for all groups studied, namely prime-age males, females, older workers, and youths.

Over the last decades, several theoretical and empirical researches were conducted trying to prove whether inequality is bad or good for the growth. Academic work has provided mechanisms supporting both possibilities, and the extensive empirical literature attempting to discriminate between these mechanisms has been largely inconclusive. Alternative theories predict that inequality can affect growth in either a positive or negative direction. First, too high inequality can lead to dissatisfaction among people, who believe that pro-business policies should take a turn to more taxes and regulation and this can further lead to lower governmental investments in the business. Alesina and Rodrik (1994)[5] have named this 'endogenous fiscal policy' theory, meaning that too much inequality can have destabilizing effects on policies and furthermore have unfavourable effects on economic growth. The second theory is focusing on the problem of poor individuals who do not have a sufficient level of income or wealth to invest in financial markets. It could be that those with low income decide to leave higher education as they cannot afford it, although knowing it would bring high returns. Galor and Zeira (1993) named this 'human capital accumulation' theory. On the other hand, we have theories implying that higher inequality increases economic growth. One of them is based on motivation, as inequality stimulates people to work hard and take more risks. Another theory implies that inequality provides the incentives to save more and accumulate capital, as the rich have a tendency to spend less (Kaldor, 1957).

According to the 'endogenous fiscal policy' theory, the negative link between inequality and growth rest on the combination of two basic mechanisms: an economic mechanism positing that redistributive tool (capital income tax) lower the private returns to investment, and a political mechanism predicting that higher inequality would induce more redistribution as poor individuals would prefer lager tax rates than the rich.

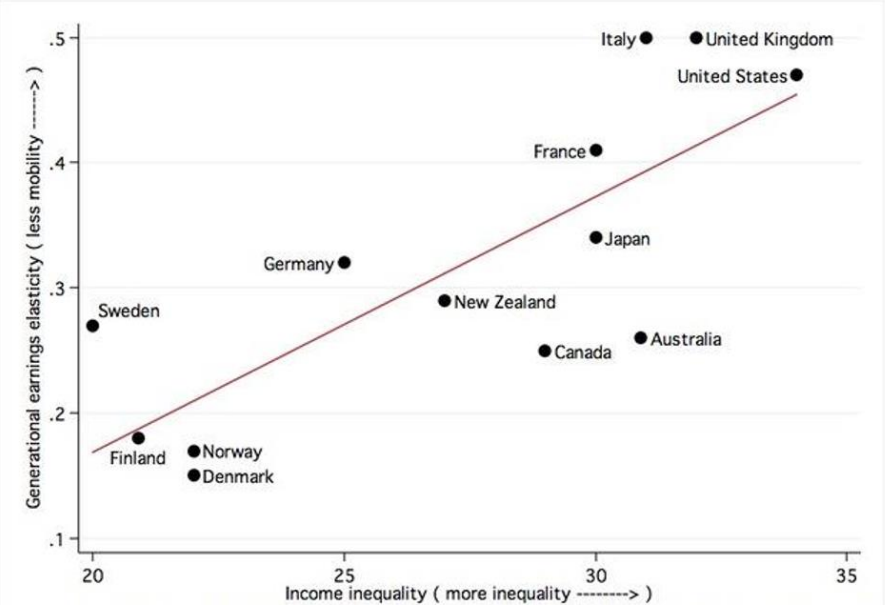
Upward mobility is negatively related to inequality when measured by Gini coefficient, which is consistent with the 'Great Gatsby Curve' theory. Top 1% income shares are not highly correlated with intergenerational mobility, however, when countries have a higher level of inequality, it makes it difficult for the less fortunate to move upward the social ladder.

Alan Krueger named the relationship between income inequality and generational earnings 'Great Gatsby Curve' presented in Figure 2, which ranks countries among these two dimensions. The horizontal axis – income inequality – is explaining how higher inequality leads to a greater concentration of wealth in rich families, meaning that children from disadvantaged backgrounds are more likely to stay there whereas the rich kids will most certainly stay at the top of the income distribution. It also shows the relative comparison between a few wealthy and many at the bottom. Income inequality showed on the horizontal axis is measured by countries' Gini coefficient from the previous generation. In the mid of 1980s Denmark, Norway, Sweden,

[5] Before also Bertola, 1993.

and Finland were among the most equal countries, when on the other hand the UK and the US had the least equal society. On the vertical axis – generational earning – it is measured the intergenerational economic mobility, meaning more elastic the generational earnings are, the stronger is the relationship between parent's income and children future income. Countries that have high equality do not have a strong correlation between parent's income and children's perspectives. Even though we can observe a strong relationship between income inequality and generational earnings correlation does not imply causation, meaning we cannot say which factor is influencing the other. Comparing income inequality and economic mobility can give us a good general understanding of the causes of inequality as well as a starting point to think of ways how to solve it (Corak, 2013).

Figure 2: The 'Great Gatsby Curve'



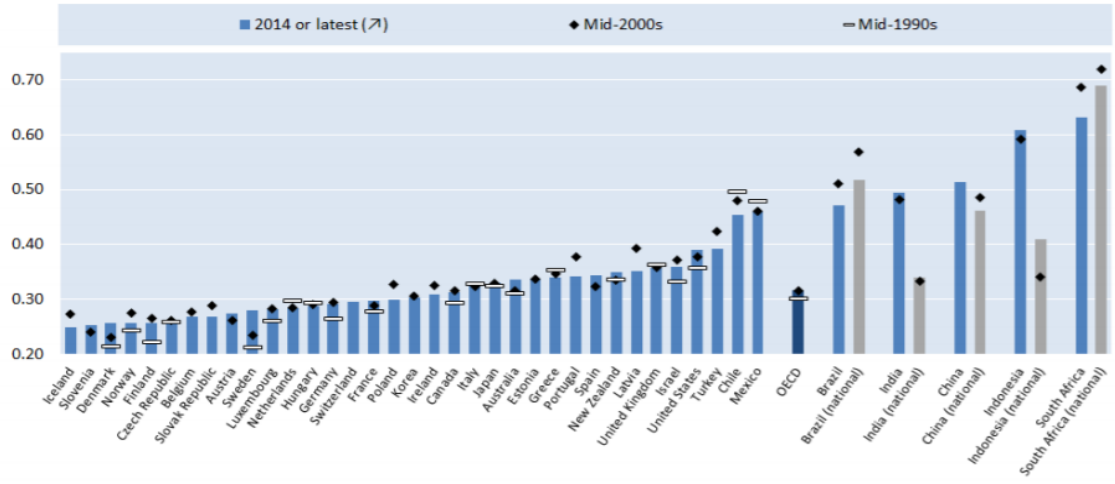
Source: Corak (2006).

2 OVERVIEW OF INEQUALITY TRENDS

The good news is that the absolute mobility across the decades, the long-term trend in social mobility is upwards, also evident in overall higher living standards achieved after the period of industrialization. Nevertheless, the more recent trends in social mobility have been less rosy (Solon, 1999; Chadwick & Solon, 2002; Mazumder, 2005; Bernstein, 2003; Wooldridge, 2005; Wessel, 2005; Scott & Leonhardt, 2005). Social mobility – the ability to move upward or downward the social ladder – refers to a change in the social status of children compared to their parents and is influenced by many factors – education, occupation, gender, etc. Climbing the social ladder can be more or less difficult depending on the characteristics of society.

OECD research (2015) had shown the trend of rising income inequality over the past three decades, usually, measured by Gini coefficient[6] (where 0 means identical incomes, and 1 when all income goes to one person). This situation has arisen many debates among policymakers, and the general public, trying to find a reason behind the high and increasing gap between rich and poor. The concerning fact is that the gap was widening not only in tough economic times but also when the economy was prospering, and even before times of crises, economic prosperity had way too often brought benefits to those with high incomes, rather than to disadvantaged. The ones at the lower end benefited little form economic growth, if not even faced the fall of their income, and that had shaken the trust of institutions and regulators. While in the period from 1979 to 2007, the income of the US wealthiest 1% went over by 256%, the bottom 90% barely saw a change in the income in the period from 1979 to 2015, with small 21% increase.

Figure 3: Income inequality has widened in several OECD countries over the last two decades



Note: Light grey bars refer to national estimates in emerging economies. They can differ from OECD estimates (blue bars) which use a methodology that satisfies minimal comparability requirements (both across emerging countries and with respect to OECD countries). Gini coefficients using OECD methodology (blue bars) are based on equivalised incomes. They are based on per-capita incomes in Brazil, China and South Africa, and on per-capita consumption in India and Indonesia.

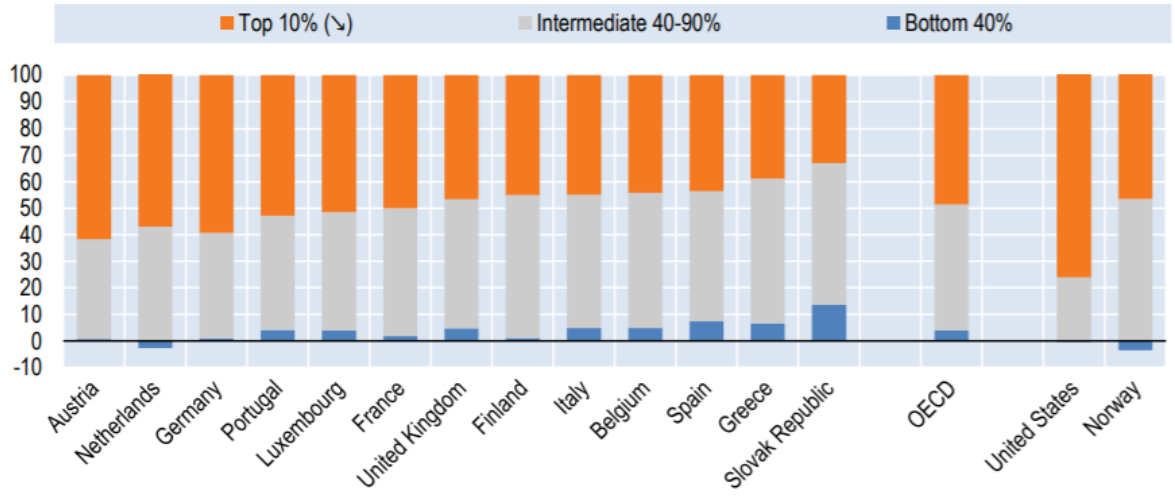
Source: OECD (2017).

Income inequality has generally risen over the past two decades in most OECD countries. In the mid-1990s, income inequality, measured by the Gini coefficient was on average 0.301. In the year 2014, average income inequality was as high as 0.361 (Figure 3); however, inequality did not evolve uniformly over time and across different countries (OECD, 2017). This differences in trends among OECD countries suggest that countries with wide redistribution systems, for example, Sweden and Denmark, cope better with inequalities then some other countries, therefore, implies that different countries are exposed to different challenges when talking about income inequality within OECD. On the other hand, in emerging economies, income inequality, as well as poverty, has fallen in many cases (Figure 3), nevertheless it still

[6] Other metrics to measure inequality are also Theil index and Hoover index.

remains at high levels when comparing to some of the most unequal OECD countries. In countries like Brazil or South Africa, income inequality has fallen after the mid-2000s, though from very high levels. On the other hand, some countries became even more unequal over time, for example, Indonesia. Furthermore, differences among regions are widening within emerging countries (OECD, 2017).

Figure 4: Wealth shares of the top, middle, and bottom of the net wealth distribution, 2010 or last year



Source: OECD (2017).

Income (after tax and benefits) importantly determines people's ability to pay their bills and/or invest in education, housing, etc. However, also wealth plays a key role in influencing an individual's possibilities to generate capital and other socio-economic factors. By accumulating wealth, individuals can generate income capital that significantly widens income inequalities. On average 10% of wealthiest households hold 50% of total population wealth in OECD countries when only 3% of wealth is in the hands of 40% of the poorest population in OECD countries. However, income inequality and wealth inequality in a country are not necessarily at the same levels. Most of the wealth is concentrated in Austria, the Netherlands, and Germany, countries at the top of the wealth distribution (apart from the US), as it is shown in Figure 4. It is interesting that the UK while being among more unequal countries (measured by income inequality) has average levels of wealth inequality. The reason of higher dispersion of wealth lies in the fact that it can be accumulated over the time and in all European countries, wealth distribution tends to be much more concentrated at the top compared to the income distribution. Vermeulen (2014) used data from the Forbes 400 Billionaires list for ten EU countries and the UK and the US to explain underestimation of the top 1% and found significant underestimation for several countries. Moreover, Bach, Calvet, and Sodini (2018) adopted this model and used more detailed national rich lists in addition to the Forbes 400 for Greece, Spain, France, and Germany. Salverda (2014) found much higher shares when using wealth statistics of the

Netherlands than Vermeulen, which shows the superiority of administrative data over those of even the most competent journalists and adapters for survey bias.

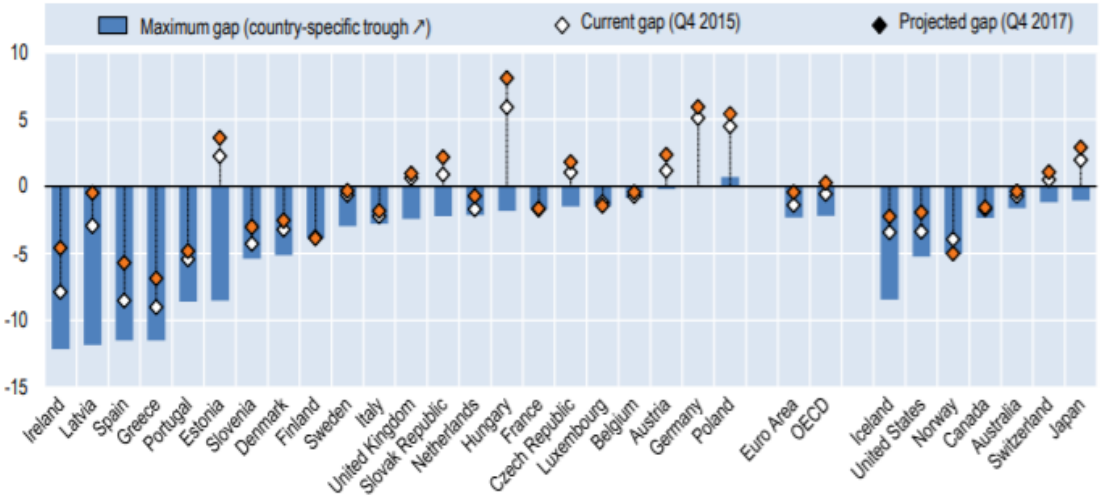
What is known about the very high concentration of wealth (Bogliacino & Maestri, 2014) makes this problem crucial for analysis and policymakers. Many authors evaluated different databases of wealth (e.g., the Global Wealth Report) to make wealth measurement conceptually consistent and comparable over time and across countries. The wealth distribution can be very uneven, usually even more than income distribution, as differences can range from a minimum level up to a maximum level of almost 0.9 in some countries (very close to Gini coefficient of 1 – when all wealth would be in the hands of one person). Moreover, there are only small changes over a long period of time in wealth distribution.

We can observe even higher wealth concentration for the top decile of the US. However not only for the US but for all OECD countries where the wealth at the top decile is so large that it acquires a macroeconomic significance it should interest policymakers. Atkinson (2004) advocated a socio-economic distinction between wealth as capital in the traditional sense of economic decision-making power and wealth qualified as beneficial. The first type of wealth is accumulated at the top of the distribution and comes together with a high concentration of fortunes. The second type is more related to investments that put economic decision making in hand of other actors rather than beneficiaries (e.g., capital-funded entitlements).

2.1 The jobs gap is closing

Labour markets are slowly recovering from the crisis in Europe, as the jobs deficit had fallen to 1.4 million in the EU in 2015. The OECD Employment Outlook 2016 shows the closing of the jobs gap even more in the second half of 2016 in the EU. There are of course marked differences among countries within the EU. Employment rates have grown over 5% above their 2007 levels in Germany and Hungary (Figure 5), however around 60% of European countries still have their employment rates at pre-crisis levels and the jobs gap remains large (for example Greece, Ireland, and Spain). Nevertheless, countries hit the most by the crisis are having the most rapid employment growth among OECD countries. Overall unemployment is continuing to fall in most countries. Unemployment in 2015 was in Europe still 2.1 percentage points higher than in the last quarter of 2007, at 9.1%. However, on the national level unemployment rates vary widely – ranging from around 4% in Iceland, the Czech Republic, Germany, Norway, and Switzerland to countries such as Spain (21%) and Greece (24%), but also France (10%), Italy (11%), Portugal (12%), and the Slovak Republic (11%) (OECD, 2017).

Figure 5: Employment gap; percentage-points change in the employment rate since the onset of the crisis (Q4 2007)



a) Annual values calculated using employment data from the *OECD Economic Outlook Database* and UN population projections.
b) Aggregate of 15 OECD countries of the euro area.

Source: OECD (2017).

Real wage falls (not only real wage stagnation) was occurring, and that had severe implications for social mobility lately. The declines were particularly striking in the countries hit most severely by the crisis, such as Greece, Ireland, Portugal, Spain, and the Baltic States where the dramatic collapse was mainly due to employment loss, rather than falling wages and wages stagnated or barely grew almost everywhere else. Comparison of real wages growth for periods 2000–2007 and 2008–2015 implies a sharp decline in many OECD countries, including the Czech Republic, Estonia, Latvia, and the United Kingdom. The real wages in these countries would fell more than 25% below the potential levels of wages if wage growth had continued at the rate observed during 2000–2007. This gap exceeded 20% in Greece, Hungary, and Ireland (OECD, 2017). On the other hand, in Germany, real wage growth has been stronger since 2007 than before the crisis. Having a job may be an escape to poverty; however, it is not a guarantee as in-work poverty still affects around 8% of the working-age population in OECD countries (mainly single parents).

But this tells only part of the story, as the groups at the bottom of the income scale lost even more. In OECD countries, income inequality is significantly reduced throughout the redistribution – typically, taxes and transfers, such as unemployment and other benefits. It results in much lower 'net' or 'disposable' income inequality than 'market' income inequality. But the impact of such distribution has changed. In the years of slow economic recovery, unemployment remained high and still governments chose to shift focus to fiscal consolidation, including cutting unemployment benefits, education, and investments. While income inequality

before taxes and benefits continue to rise, the effect of taxes and benefits has weakened, accelerating the overall upwards trend in disposable income inequality (OECD, 2015).

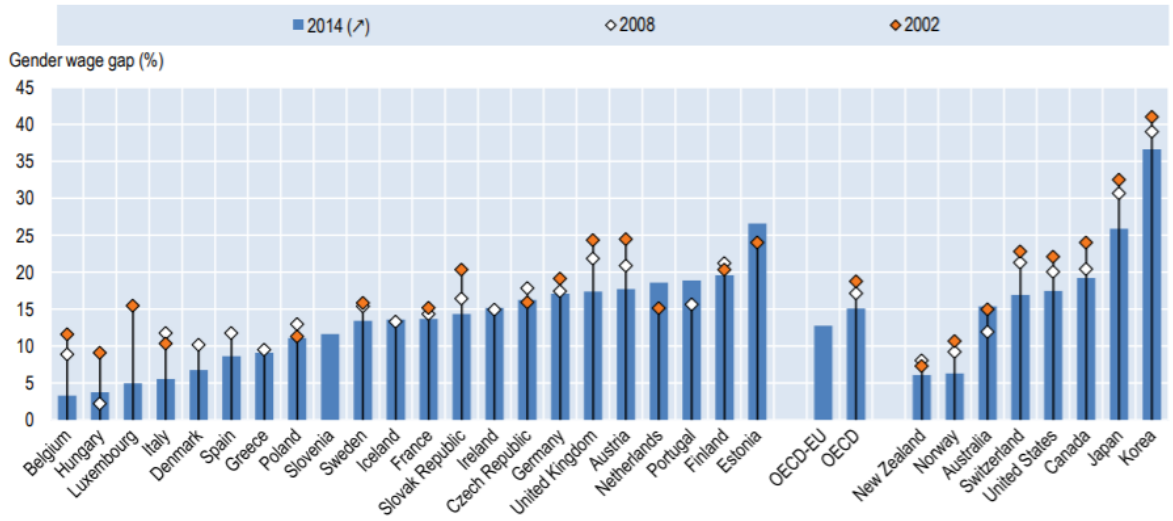
Another issue to consider is the role of gender. The gender gap in the labour market has narrowed in the last 20 years; however, it still remains high. Over the last century, women have experienced absolute mobility, as more than 80% earn higher wages than their mothers did; however, they still have lower earnings than their fathers. While on the other hand, men have overcome both parents. Substantial increase in absolute mobility for women is mainly but due to the fact that their mothers did not work. Social changes gave women more rights, and they had pursued professional careers as they were able to get the same education as men. Women's share in higher income groups is still very small when compared to men, as there is less than 17% of women in the top 1% of workers (OECD, 2017). Nevertheless, more women engaged in labour markets may lead either to lower or higher inequality. When part of women active on the labour market takes over the high skilled jobs, which results in higher earnings, this can widen the gap of inequality among women, when on the other hand it is closing the difference between men and women (OECD, 2017).

OECD (2015) research showed that the last two decades were still inequitable for women as they were to be paid less and progress slower in the career than men. The gender gap in the EU employment has decreased from 21.6% to just below 10% between 1992 and 2014 but remains at over 16% in the Czech Republic, Greece, and Italy (OECD, 2016). The gap in the Nordic countries in 2014 was only around five percentage points or less and has not changed much over time. Less than half of women are in paid employment in Italy, Greece, Turkey, Mexico, Spain, and Poland, while more than 70% are employed in Denmark, Sweden, Iceland, Norway, and Switzerland. The gender gap is most pronounced in Turkey and Mexico but is also high in Japan, Korea and Ireland (OECD, 2006). Labour markets are also segregated by occupation (horizontal segregation) meaning that men and women tend to work in different sectors, or better said there are some sectors still dominated by men. In addition to horizontal segregation, women also face ‘vertical segregation’ or ‘glass ceiling’ as they do not advance in their careers as fast or as far as men. Even though the gender gaps in income had narrowed, still remain relatively large. To fight these differences between genders governments should follow the good practices of policies eliminating glass ceiling by setting clear legislation to protect all workers from any direct or indirect discrimination (including gender, maternity, paternity and family responsibilities) or by being a role model in public sector for other employers in business. Only by doing so, they can achieve the higher potential for equalizing incomes between genders for the same work of the same value. In many countries, governments and businesses have implemented family-friendly policies such as parental leave, childcare, flexible working arrangements, etc., to help parents with children (Bowles, Gintis, & Groves, 2005).

Besides, only 31.5% of women are managers, on average across the EU, though this ranges from around 22% in Luxembourg to 40% in Hungary. Women are more likely to be employed in lower-paid occupations because they are less likely to progress in their careers than men and,

the gender gap in pay persists. Median wages for men are higher than those for women, although the gap has narrowed over time. In 2014 women earned, on average, 13% less than men in the EU among full-time employees (Figure 6). The widest gender pay gaps are in Estonia while the narrowest are found in a variety of countries, including Luxembourg, Hungary, and southern European countries (OECD, 2016b). In countries such as Spain, Greece and Italy gender pay gaps are smaller as the result of "selection effects", whereby female earning is artificially increased as for several reasons only high qualified female workers tend to remain in the labour force. Older women face higher risks of poverty than older men and gender also influence the pensions, which are likely to be lower for women in countries where the pension is linked to previous earnings. Longer life's expectancy of women also means that they are overrepresented in the ranks of retired European yet are more likely to have lower earnings from pensions, rising another opportunity for poverty among elder.

Figure 6: The gender gap in median earnings of full-time employees, 2002, 2008, and 2014 or latest available



Source: OECD (2016b).

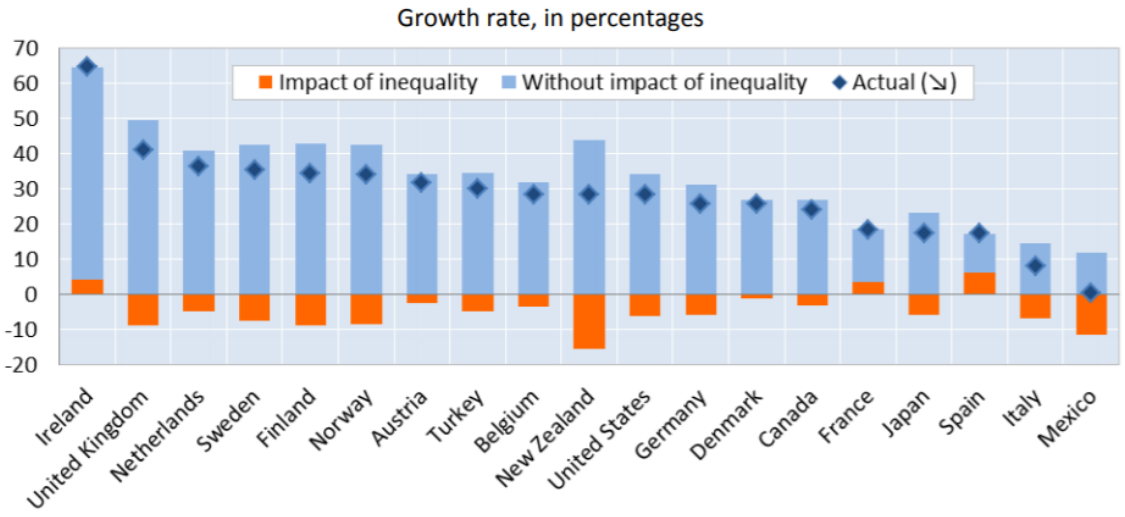
2.2 The impact of income inequality on economic growth

According to a report published by the IMF, "Widening income inequality is the defining challenge of our time. In advanced economies, the gap between the rich and poor is at its highest level in decades" (IMF, 2015). Many countries facing high levels of income inequality leads to rising more questions about what economic effects of income inequality are and above all what kind of social outcome it provides. The theory has for a long time argued that inequality could have positive or negative impacts on economic growth. One suggestion is that inequality by itself is a great motivator for people to want to achieve more and become rich (by working more, studying longer, etc.), which further leads to more economic efficiency and growth. The opposite theory suggests that high inequality leaves too many people behind, by not being able to afford desired education, get a prospective job, and the more fortune can use more economic

opportunities and further widen the inequality gap. Moreover, it slows down the economy, as the labour force is not exploited in the most optimal way, nor is the capital.

OECD (2015) research find consistent evidence that the long-term rises in inequality of disposable incomes observed in most OECD countries have indeed put a significant break on long-term growth. Further, it shows that effort to reduce disparities through redistribution – typically, specific forms of taxes and benefits – do not lead to slower growth. Therefore, the redistribution can be part of the solution but requires a serious discussion on how to promote efficient and well-targeted measures that promote better sharing of the growth outcomes not only for social but also for economic considerations.

Figure 7: Estimated consequences of changes in inequality (1985–2005) on subsequent cumulative growth (1990–2010)



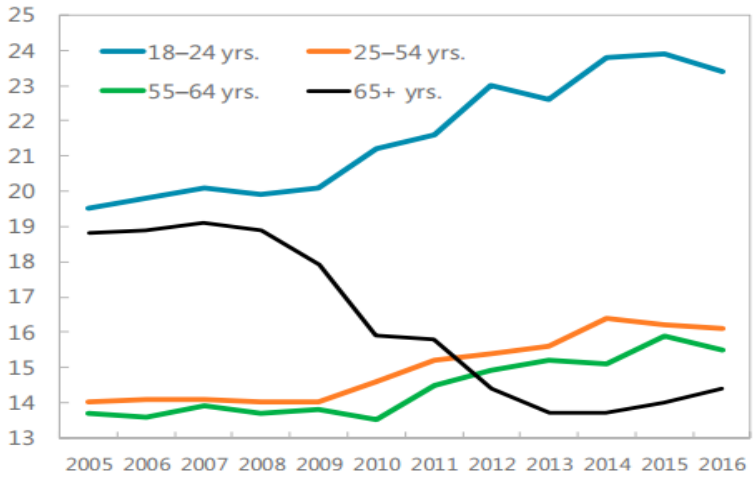
Source: OECD (2014).

OECD (2014) analysis suggests that income inequality has a significant negative impact on medium-term growth. When inequality rises by 3 Gini points (average increase in OECD in last 20 years), economic growth would on average fall by 0.35 percentage point per year for 25 years: a cumulated loss in GDP at the end of the period of 8.5% (OECD, 2014). For individual countries (Figure 7) this indicates the change in an increase or decrease of GDP growth over the period 1990–2010 if there would be no change in inequality in the period 1985–2005. However, Figure 7 should not be interpreted as the causal effect of actual change in inequality but rather an illustrative figure that indicates the sizeable impact of inequality. In last two decades, half of the countries lost around four percentage points of growth due to rising inequality, when on the other hand, few countries increased GDP per capita due to greater equality prior the crisis (for example, Spain).

2.3 Synthesis of current economic and legal literature findings

Many researchers such as Stiglitz (2009), Wilkinson (2009), Pickett (2009), and Piketty (1998) have become advocates of equality. It has become a wide public debate on how increasing inequality have adverse social, political and economic consequences. It has been argued by Wilkinson and Pickett that higher inequality within society results in worse social outcomes: poorer health, lower education levels, higher violence, lower child well-being, etc. Namely, inequality negatively affects the whole society. Moreover, inequality leads to a large, frustrated underclass of poor people who are potentially vulnerable to radicalization. Among many that are lacking career prospects, and who are usually exposed to short-term, precarious, low paid and menial jobs the young are the age group most likely to be poor (relatively and absolutely measured). We can observe in Figure 8 that the risk of youth poverty is on the rise in Europe especially after the financial crisis as many young people suffer from unemployment.

Figure 8: EU27: At-Risk-of-Poverty Rate from 2005 to 2016, in percent of total



Source: Eurostat (2018).

As Stiglitz (2009), inequality is disruptive because it destroys the foundations of the market economy, (i.e., consumers' purchasing power), and therefore, undermines aggregate demand. Finally, the growing inequalities can threaten the democratic order, and Piketty (1998a, 1998b) demonstrated that inequality must be moderated by state intervention. The academic research on income and wealth distribution by Atkinson, Piketty, and Saez (2011) have put numbers on the inequality increases experienced in most of the developed economies during the last three and a half decades.

Health can be improved, and earnings can be raised, by investing in human capital, through expenditures on education, lifetime learning, training, lectures, and medical care, regardless of country economic system or culture. The earnings of educated people are almost always above average, though the earnings of educated individuals are generally higher in less-developed countries. Furthermore, quality education and training courses are among the most important

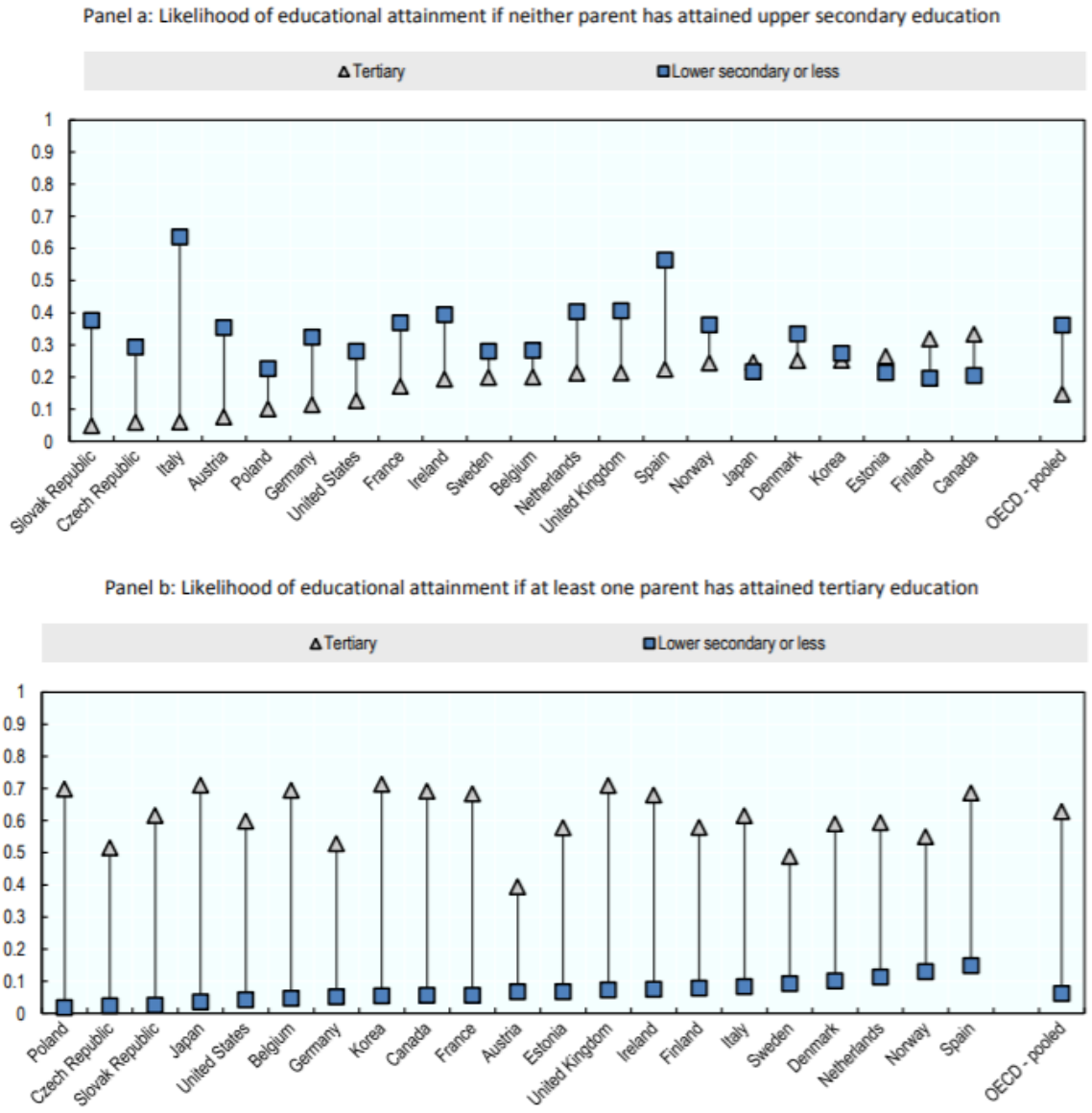
investments in human capital. Young people without a college degree are not adequately prepared for work in a modern, fast-changing world. With appropriate knowledge, skills and problem-solving approaches, schooling raises not only earnings but also productivity (Becker, 1993). As Griliches (1997) argues public sector plays a vital role as 'absorber' of educated labour. Moreover, not only investments in education but also in personal human capital, such as reputation and relationships, plays a key role in building human capital (Grilichez, 1997).

3 INEQUALITY AND EDUCATION

Education has a significant role in the inequality debate. Unequal opportunities in education are an important sign of inequalities. Namely, differences in educational attainment may weaken social cohesion and, furthermore, social mobility. To prevent accelerating inequality an analysis providing key indicators of which areas should be under the special attention of policymakers is needed. Therefore, education indicators can give insights into existing and potential future inequalities. Education inequalities influence various key areas of life e.g., income, self-reliance, social support network, mortality risk, health status and time invested in activities with children. Not only inequalities that cumulate throughout an individual's life make it more difficult for those from disadvantaged backgrounds to climb the socio-economic ladder but also frame the opportunities of the next generation. Inequalities of education, health, employment and earnings, wealth, and well-being compound over the life course (OECD Preventing Ageing Unequally Action Plan) and are closely related with inequalities of social capital (OECD, 2016a).

All these accumulated inequalities effect several well-being outcomes not only in early life but also in the adulthood (Becker & Tomes, 1979; Corak, 2013; OECD, 2015). Furthermore, unequal schooling and labour market outcomes add to growing income and wealth inequalities in adulthood, continuing a cycle. Only a few OECD countries show outstanding equity over the individual life course, see appendix 1 (red cells mean below-OECD average performance in equity). Japan, Korea, Estonia, and the Netherlands have above OECD level of equity in eleven out of twelve indicators, while most other countries have plenty of room for improvement to provide an appropriate level of knowledge and skills acquired by individuals from disadvantaged backgrounds (OECD, 2017). The United States, Chile, and the Slovak Republic are underperforming OECD average on most of the indicators. Israel, Italy, Poland, Turkey, and the United Kingdom are also lagging behind OECD average in many indicators. The gaps between the access of early childhood education of socio-economically advantaged and disadvantaged individuals, learning outcomes of students and young adults, and labour market outcomes of adults are at an alarming high rates in these countries.

Figure 9: Parents' education has a strong influence on child educational outcomes



Source: OECD (2017).

Among factors outlined in the table of Appendix 1, the parental educational background has a vital role influencing their offspring's opportunities to pursue an education across the OECD countries. Children in OECD with lower-educated parents have on average just a 15% chance of reaching tertiary education. Whereas, they have a 63% chance to finish university if at least one of their parents has tertiary education (Figure 9). Students whose parents have a lower educational background are six times more likely to drop out at lower secondary level or before, than children with high-educated parents. However, there are some differences between countries, for example in Italy, a person is ten times more likely not to attain upper secondary level than to reach tertiary education if their parents did not attain upper secondary education. The same individual will be more likely to attain tertiary education than stay at the same level as their parents in Canada, Japan, Estonia, and Finland. Individuals' attainment levels are even stronger determined by a parental educational background in emerging economies, especially

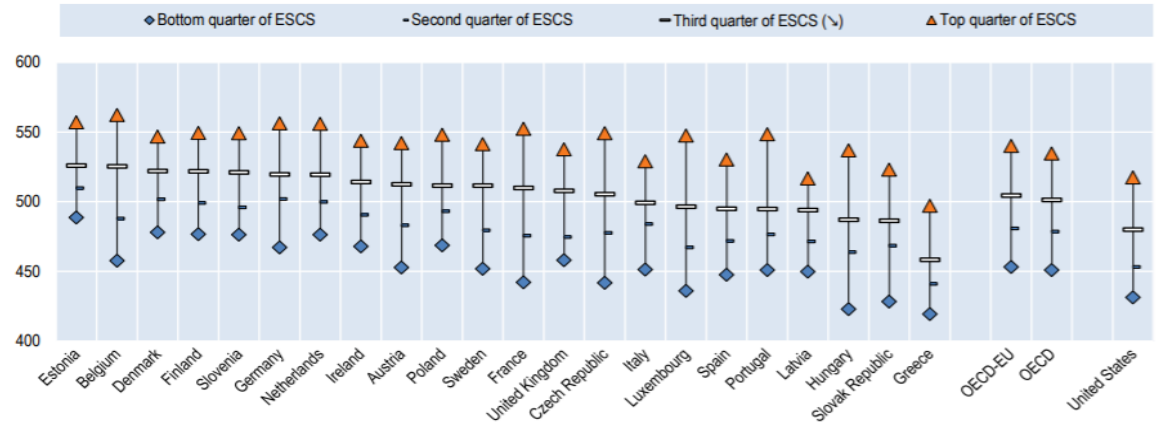
at both extremes (parents that have very high or very low levels of education), for example in countries such as Indonesia and South Africa (OECD, 2017).

Policies have been targeting individuals who are most handicaped due to their background and the least skilled. Investing in low-skilled individuals can be very costly, yet not very efficient to raise social mobility, and might not lead to substantially better developed cognitive skills (Crawford, Goodman, Joyce; 2011). Therefore, it is of foremost importance to target the group of people little above the bottom where small investments into human capital would make a substantial difference in developing skills as well as in the outcome. As cognitive abilities are determining level of education and income levels, it should be considered as important factor influencing intergenerational mobility. One of the questions that have arisen through the research of social mobility is how strong the link is between inherited genetic intelligence and higher achievements, or it is related to better education that wealthier and more educated parents can offer to their children (Blanden, 2005; Hsin & Xie, 2012). Besides unequal distribution of cognitive skills and lower chances to develop strong socio-emotional skills, socially disadvantaged children usually lack self-confidence and access to networks compared to more fortunate peers.

Social background differences importantly influence school performance as there is a significant gap among individual's education outcomes. Programme for International Student Assessment (hereafter: PISA) (2015) tests measure average performance by parental backgroun. Figure 10 shows that in all analyzed countries children with less educated parents, on average, perform worse than children with more educated parents, which implies a large loss of potential. The gap between children with more educated parents and those with less educated parents differs among countries, for example in France, the Czech Republic, Luxembourg, and Hungary intergenerational persistence in education is relatively high, while Estonia and Denmark managed to keep it low. Furthermore, some countries that have similar average scores can have very different gaps in performance, for example, France compared to Sweden and the United Kingdom, or Germany compared to Slovenia and the Netherlands. In particular, the probability of gaining tertiary education is higher in Luxembourg, Finland, Denmark, and Italy (Causa & Johansson, 2009). However, not only education but also wage persistence trends are lower in Nordic countries.[7] Financial constraints in some countries may determine the parent's possibilities to invest in education of children with high abilities and furthermore, talents could be lost.

[7] By definition Nordic countries refer to: Denmark, Finland, Sweden, Norway, and Iceland.

Figure 10: Score in mathematics by socio-economic status of parents, 2015



Note: ESCS refers to the PISA (Programme for International Student Assessment) index of economic, social and cultural status.

Source: PISA (2015).

Another commonly used approach to social mobility is so-called Becker-Tomes model (Becker & Tomes, 1979, 1986) which assumes that parents, given their preferences and constraints, sacrifice part of resources (that could be used for consumption) to invest in their children (usually education) or so-called human capital, which importantly influence their child's future socio-economic position. If parental background affects access to investment in education through credit or other constraints, then the ability to take advantage of the high returns from education is limited to the offspring of relatively advantaged parents. After the crisis inequality has grown at an alarming rate and a need to develop tools for gauging inequality had risen (Chang, 2017). Many of those with low income decide to leave higher education as they cannot afford it, although knowing it would bring higher returns. Galor and Zeira (1993) named this 'human capital accumulation' theory.

Solon (2004) conducted a cross-country study using the Becker-Tomes model investigating differences in intergenerational income among countries over time. Solon has pointed out that education is playing a key role in intergenerational persistence, as parental income and children's human capital (and returns on the labour market from human capital) relationship significantly influence economic status among generations. Moreover, bigger the income-related investments in human capital (and higher returns to human capital) the greater intergenerational income persistence; however, it will decrease with more public investments in human capital. Solon has also established a link between cross-sectional income inequality and intergenerational income persistence, meaning that a country with greater income (post-tax and transfers) inequality might also have greater inequalities in the investments in children's human capital, as rich parents can afford to invest more than the poor parents. Furthermore, if income can influence educational attainment then benefits from high returns to education are limited to rich households. This concept is closely contacted to public policies enabling public programs and education for disadvantaged children, which disproportionately benefit to the

poorer households. However, this concept is not built on higher returns to education, but rather on opportunities of children from rich households to gain more benefits from education (Solon, 2004).

Investments in education and training play a key role in ensuring individual well-being and also the prosperity of economy. Benefits of investing in disadvantaged children's education may also show positive externalities in adulthood, as better skills provide better-paid jobs. There are countries, however, where underprivileged children gain high educational outcomes. The 2015 OECD PISA results show that disadvantages students on average across OECD countries beat the socio-economic odds in 29.2% and are in the top quarter of students in all participating countries (after accounting for socio-economic status). Nevertheless, social mobility is still low in several OECD countries. The possibility that sons wage is not correlated to their fathers' wage is very low in many of OECD countries, including France and Italy; however, it is significantly higher in the Nordic countries, New Zealand, and Canada (OECD, 2017). Investments in education should start in early childhood and continue during schooling, especially for those underprivileged students without or with little pre-schooling experience.

Countries such as Austria, Belgium, France, and Italy provide outstanding access to education for disadvantaged children in early childhood at no – or little – cost, but unfortunately, fail to transfer it into similar schooling outcomes for these same disadvantaged students at later stages in life. Furthermore, high-quality resources and support still lack in most disadvantaged schools in many countries and are more likely to struggle both financial and human resource limitations. Namely, disadvantaged schools have an excessively high number of children who are low-performers and at-risk of dropping out (OECD, 2016b). There are several policy measures, that governments can pursue to help disadvantaged schools and students (OECD, 2017). First, it is important to tackle poor performance by identifying it at early stages and providing the necessary support for those who could potentially fall behind. Furthermore, needed support should be available for all students, providing academic commitment and positive attitudes. Next, lack of achievement motivation and sense of belonging of disadvantaged students were identified in 2015 PISA analysis (OECD, 2017). By helping students from disadvantaged backgrounds to develop socio-emotion skills and supporting the development of self-confidence, organizational skills, they can integrate into learning activities more easily. For example, in England, personal, social, health and economic education (PSHE) helps students to build their personal identities, self-confidence and help them with career choices and decision-making processes. Korea has incorporated learning processes that improve creativity and socio-emotional skills across all educational activities, together with the 2009 amendment of the national curriculum (OECD, 2015). Finally, governmental financing of investments in human capital is essential for disadvantaged schools lacking in quality education for students from disadvantaged backgrounds. In Canada, for example, the Ministry of education provides additional funding since 2006 and guidance to low performing schools (OECD, 2017), which also helps to attract high-quality school leaders and teachers to disadvantaged schools. The United Kingdom is attracting top principals through special programs to lead disadvantaged

schools (The Future Leaders Trust was set up in 2006). In New Zealand and France, governments are trying to attract principals to lead disadvantaged schools with better salaries (OECD, 2008). In Shanghai and Singapore, spending a certain amount of time in a disadvantaged school is required for school leaders in order to progress in their career (OECD, 2017).

3.1 Equitable and inclusive education

Quality education is the foundation for fairer, more inclusive and more innovative society. Education systems play a key role in lowering social and economic disparities. With investments in education, we can build fairer societies by providing quality education for all regardless of their background and giving all equally good chances to lead successful lives. Equipping young people with knowledge will not only help them to find employment, but also become engaged and independent citizens. While education is crucial in tackling inequality, poor education policies can even deepen social and economic gaps.

One of the key challenges of OECD countries is equitable educational system; however, equitability in education can be defined in different ways. The OECD Report No More Failures defines equity in education in two ways: fairness and inclusion (Field, Kuczera & Pont, 2007). When focusing on inclusion, measurement is reaching the basic minimum level of skills for all students, without setting barriers (e.g., financial) or lowering expectations. Equity in terms of fairness refers to socio-economic circumstances, such as gender, race, family background, etc., which should not define one's educational success. Social and economic inequalities could be restored through an equitable – inclusive and fair –educational system allowing individuals to take full advantage of education regardless of their background (Faubert, 2012; Field and others, 2007; Woessmann & Schütz, 2005). Unfortunately, across OECD countries student's background still has a significant impact on academic achievement, as students with low educated parents and low socio-economic status (also girls and second generation of immigrants) have a higher chance for low performance in school. Fairness and inclusion are often overlapping, as low socio-economic background and low performance are common for specific groups – disadvantaged students. For example, PISA (2015) results showed significantly lower scores (below Level 2),[8] for students from disadvantaged family background, than for those from a wealthy family.

Canada, Denmark, Estonia, Hong Kong (China), and Macao (China) are among best-performing countries and regions in OECD achieving high levels of equity in education outcomes. There are almost three times more socio-economically disadvantaged students across OECD than advantaged students who do not reach the baseline level of proficiency in science. However, as mentioned before, 29% of disadvantaged students beat the odds and perform at high academic levels (OECD, 2018). The OECD Programme for International Student Assessment (PISA) measures students' skills at age 15, showing that around 19% of 15-year-

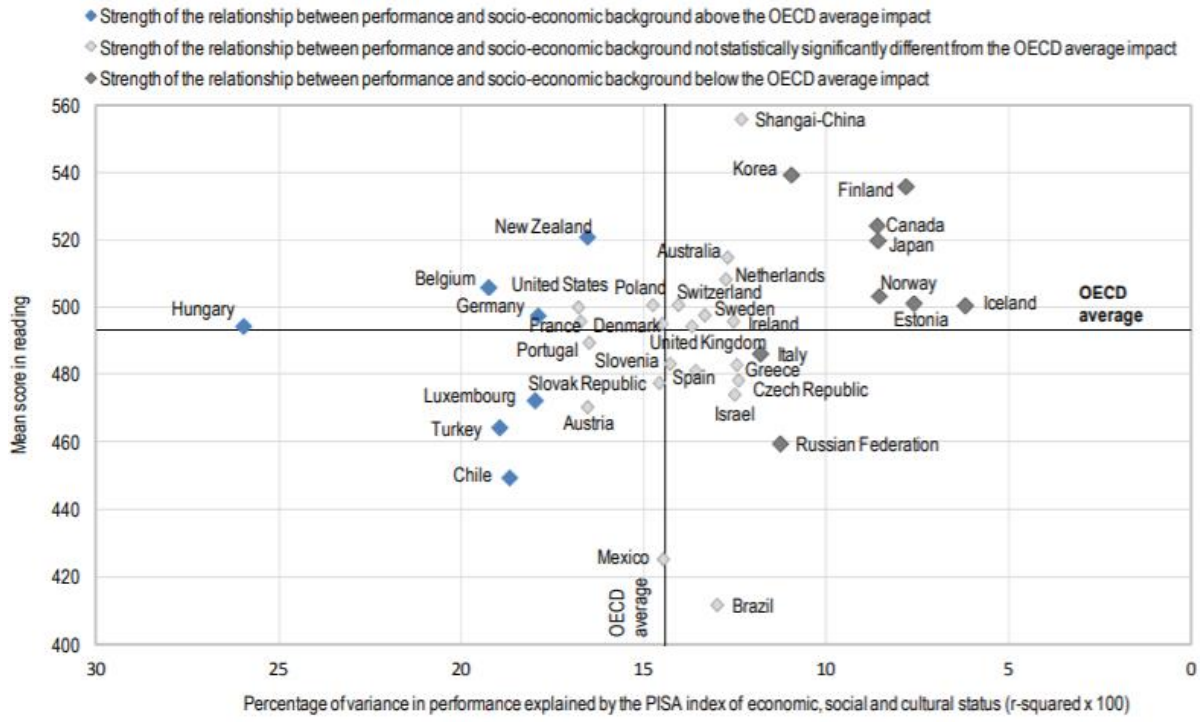
[8] See Appendix 2.

old students achieved below Level 2 in reading on the 2009 PISA test. Meaning that almost one out of five youngsters across OECD countries lacks basic literacy skills, and in some countries, this ratio exceeded 25%. Above 40% of students in OECD countries scored Level 2 in reading proficiency and lacking basic skills at this age may lead to drop out of the education system. Without finished upper secondary school, many young people are entering the workforce with low skills.

The cost and funding of tertiary education is another major area for improving social mobility. There is no indication that countries with low tuition fees exhibit higher admission rates in tertiary education (OECD, 2016b); however, private investment in tertiary education depends on opportunity costs as well as funding policies (Oliveira, Boarini, Strauss, Maisonneuve, Saadi; 2007). Any obstacles, for example financial (credit), can limit investments in tertiary education for disadvantaged individuals and/or families and moreover limite upward social mobility. Support systems, such as student loans and grants can help to diminish these obstacles, and with funding available to all students more students from disadvantaged families can obtain tertiary education. Government-supported funding systems, such as loans and grants, may lessen students' dependence on their families for financing their post-secondary studies, ease financial constraints and promote intergenerational social mobility (Causa & Johansson, 2009).

One's opportunities for success are strongly linked to the quality of education. Not only with knowledge, skills and socio-emotional competencies required for children's development, but also with contributions to the economy and society during their adulthood. These skills and experiences cannot always be obtained at home, particularly when children are from the disadvantaged environment (Heckman, Lochner & Todd, 2008). However, there are still considerable inequalities in educational outcomes among OECD countries, despite efforts of governments to provide high-quality education, many students still do not reach a minimum level of education. OECD has the following education goal: to provide enriching learning opportunities to all individuals from the early years and until at least the end of upper secondary education. OECD ministers of education have pointed out the importance of inclusive education for all, however not making education systems too easy by lowering the bar (OECD, 2009). There is noteworthy evidence that equity in education does pay off, making economies more cohesive and competitive. Best performing OECD countries in education systems are those with quality and equitable schooling systems, where a majority of individuals can achieve top-level skills, knowledge and therefore use these abilities to improve their socio-economic status (see Figure 11). Advantages of investing in equity in education, in most cases, offset the costs for both individuals and societies and this is the reason to ensure both equity and quality of education systems. Moreover, it is economically efficient to invest in equity in education especially if investments are made in the early stages of life. Therefore, reducing dropout and ensuring secondary education quality and completion give high returns in both the short and long term (OECD, 2012).

Figure 11: Strength of the relationship between performance and socio-economic background (PISA 2009)

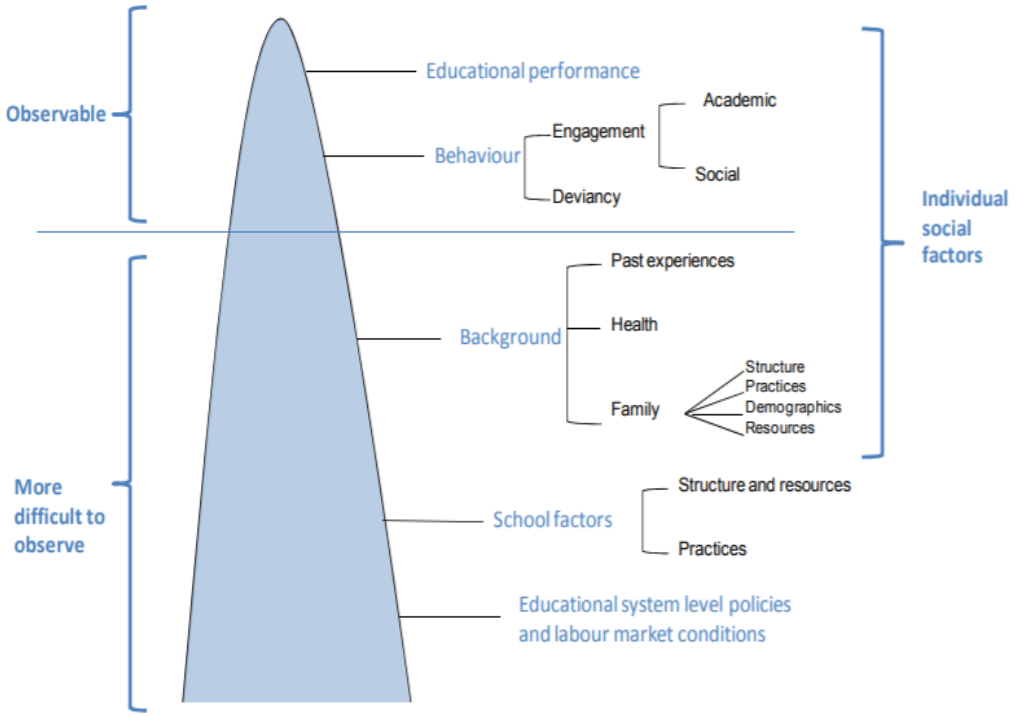


Source: OECD (2011).

Students dropout is concerning phenomena and does not happen overnight. Many times, it is the result of student disengagement (Lyche, 2010). The further analysis gave six key factors causing students to dropout, which can help to identify students who are likely to leave the school system (see Figure 12). These predictors are as follows:

- Educational performance is the most important predictor for dropout. Low grades are a strong signal of low preparations to progress in the educational system (Lyche, 2010). Educational results belong in the visible part of the iceberg, usually linked to other factors that are more difficult to identify.
- Students' attitude matters for success in school. Engagement in academic and social matters is crucial for students to stay in school. In OECD countries, 25% of 15-year-old students do not value success at school (OECD, 2012) resulting in the distraction of students from learning when experiencing negative emotions.

Figure 12: The iceberg of low performance and school failure



Source: OECD (2012).

- The family background of students has a major influence on their performance. Households with a low educated parent, negative attitudes towards the education system, not able to support (also financially) their children have higher chances of dropping out. Family environments have worsened over the past decades (Heckman, 2011), as the number of households earning less than 50% of a country's median income increased to the mid-2000s in most countries (OECD, 2008), particularly in Luxembourg, Austria, Germany, and Turkey. Nowadays a greater number of children is born into disadvantaged families, many of them from minorities and immigrant backgrounds (Heckman, 2011).
- Evidence indicates that structures, resources, and practices in educational systems are also important. Teaching and learning processes, extra-curricular activities, relations between peers and teachers have a strong influence on students' learning, motivation, and engagement. Several schooling system-level policies can contribute to increased dropout, for example, early tracking, grade repetition or specific issues such as the lack of sufficient traineeship places or school violence (Bridgeland, Dilulio & Morison, 2006; Markussen, Wigum & Sandberg, 2008).
- Current labour market circumstances have an impact on dropout. Young people can be attracted by regional and/or seasonal labour markets (e.g., tourism, construction) causing early dropout of school pushing them into unskilled jobs with deprived prospects. Family economic situation, prospects to become more independent and the availability of such jobs motivate many young people to leave school prematurely (European Commission, 2011).

Education systems should give the youngster the incentives to stay in education or to return at a later stage.

Some groups are more at risk of low performance than others, and even though the socio-economic status is an important predictor of schooling success, personal factors also influence the possibility of low schooling results. The gender gap in education is even greater in the majority of OECD countries since 2000 (OECD, 2010) and there is still present strong trend of girls outperforming boys. On average across OECD countries, 15-year-old girls were about one-and-a-half times more likely to have higher reading scores than boys (OECD, 2011). The results of recent European Union study found that differences between boys and girls in achievement appear early on and boys have a higher chance to repeat school years than girls (Eurydice, 2010). Boys prevail among early school dropouts, and a greater number of girls receive an upper secondary school qualification. Girls are more likely to gain higher grades and higher pass rates in school leaving tests, helping them to enter chosen university programs (OECD, 2012).

The latest financial crisis had a strong negative impact on fair and inclusive education in most OECD countries (OECD, 2010). In 2009, OECD GDP fell by four percentage points, and unemployment rose in most countries causing inequalities to deepen, as high unemployment and lower welfare are resulting in higher poverty. Governments have introduced fiscal, financial and structural policy measures trying to improve productivity levels, including education (OECD, 2011). Education has been recognized as a key lever for long-term economic recovery, and therefore most OECD countries investments in education have not decreased. OECD study shows that education has been safe from budgetary cuts in relation to other areas of public expenditure such as welfare, health, infrastructure and pension expenditures (OECD, 2011). There were only 6 out of 30 countries in the study that took any measures towards expenditure on education. In addition, OECD survey on the impact of the economic crisis in education systems showed that some countries increased public investment in upper secondary education to strengthening these education levels (see Figure 13), reduce unemployment and to supply the needed labour force on the market.

Figure 13: Education stimulus measures for recovery in OECD countries between 2007–2010

Stimulus measures		No stimulus measures
Education and/or skills enhancement as an explicit priority	**No explicit focus on education and/or skills enhancement**	
Australia, Canada (Federal Government, Saskatchewan), Chile, Denmark, Finland, France, Greece, Iceland, Ireland, Korea, Netherlands, New Zealand, Norway, Slovenia, Sweden, Turkey	Austria, Belgium (Flanders), Canada (Alberta, New Brunswick, Quebec), Japan, Mexico, Poland, Portugal, Spain	Czech Republic, Hungary

Note: Hungary noted that although budgetary pressures have made it difficult to develop stimulus measures, European Union financed development programmes have been serving a similar purpose. Similarly, the Czech Republic National Anti-Crisis Plan includes initiatives allowing use of resources from the European Social Fund for training of private sector employees; as well as the continuation of an educational reform aiming at improving curricula and learning methods and the development of a national qualification framework.

Source: Damme & Karkkainen (2011).

Education has been the least affected (in relative terms) even in countries with a most severe financial crisis such as Greece, Iceland, Ireland or Portugal. In Ireland, for example, the expenditure for education in 2010 was 5% less than the allocation for 2009, nevertheless generally education funding for primary and secondary education rose by 10% and 7% from 2007 to 2010 and decreased by 3% at tertiary level (Damme & Karkkainen, 2011). Other countries have continued or accelerated their education reforms; for example, reforms making pre-primary education obligatory continued in Austria. Likewise, reforms on the curricula and rising participation in pre-primary and primary education took place in Poland. Spain reforms trying to enlarge access to early childhood education and care are focusing on making the last year of compulsory education more attractive to students. Moreover, ten countries reported an increase in vocational education and training reforms since 2007 (Damme & Karkkainen, 2011).

3.2 Public law regimes and tuition fees

Public policy and political science research are mainly focused on policy change; however, education policy often suffers a non-theoretical approach to ‘what works’. Policy change does not always lead to desired results, especially when the process of implementation is not taken into consideration. There are only a few selected theories considered to be the most appropriate when discussing education policy. Gornitzka, Kogan & Amaral (2005) argue that the advocacy

coalition framework[9] (ACF) is appropriate for education policy changes due to stable factors such as income and educational levels in society, but also cultural norms about governing access to higher education. However, more dynamic factors are present, such as socio-economic conditions and system-wide governing coalitions ensuring main sources of policy change. Advocacy coalitions involving politicians, interest group leaders, and researchers then emerge around higher education reform. Another idea is multi-level governance evident in Fullan's (2007) account of educational change proposing a tri-level reform at the (1) school and community level, (2) district level and (3) state or national level. Moreover, he states that interaction should be two-way and mutually influenced by actors at all three levels emphasizing the complexity of change on a large scale (Fullan, 2007).

Several disruptive innovations are replacing old services and products in the education sector, for example, online learning, corporate training programs or community colleges (Christensen, Aaron & Clark, 2003). Possibilities to apply this at the secondary level, where existing structures are disrupted (Christensen, Johnson & Horn, 2008) offer affordable options to people with limited access to course content or degree opportunities, for example, online language or advanced placement courses (Christensen, Aaron & Clark, 2003). Apex Learning and Florida Virtual School have enabled specialized classes to thousands of students through online learning curricula (Christensen, Aaron & Clark, 2003), yet student "drop off" is higher in online classes than in live ones. Disruptive innovation has provoked policy changes across many areas. 'Disruption is how industries achieve the seemingly incompatible goals of increased access, higher quality and lower prices' (Christensen, Aaron & Clark, 2003, p. 41). Challenging education reforms in times of decreasing state funds, disruptive innovation could help to improve primary and secondary schools (Christensen, Aaron & Clark, 2003, p. 41), yet it is still not clear how to predict disruptive innovations, sectors, and countries where innovations will take place.

It is not always easy to say which factors enable fruitful implementation, as it depends on the political, economic and social context. For example, local factors (e.g., size, institutional complexity) matter for policy responses (McLaughlin, 1987). Payne (2008) claims that only general solutions can lead to incoherent implementation efforts, as no 'one-size–fits-al' policy exists. Yet, this has not stop scholars trying to identify principal factors for certain policy areas. According to Payne (2008), a successful implementation of education policy has been evidenced in schools where there is coherence, stability, peer support, training, and engagement. To sum up, implementation is a multidimensional procedure, linking three dimensions when implementing a new educational program or policy. There are three possible

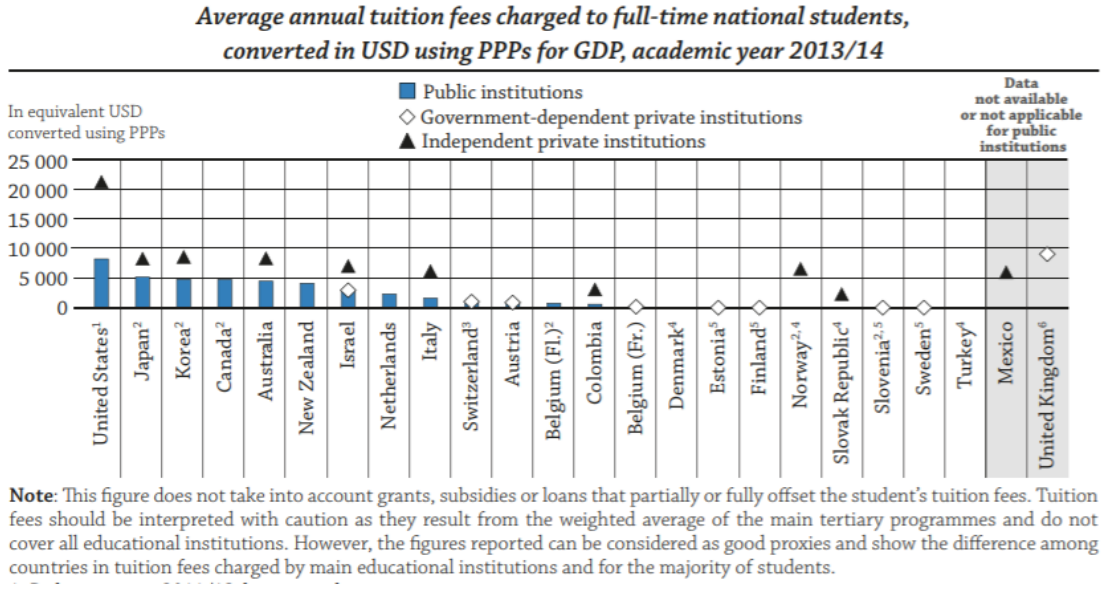
[9] It specifies that there are sets of core ideas about causation and value in public policy; these coalitions form because certain interests are linked to them. It is possible to map these networks of actors within a policy sector. 'Change comes from the ability of these ideas to adapt, ranging around a whole series of operational questions and what works in any one time or place' (John, 2003, p. 490). Policy change occurs through interactions between wide external changes or shocks to the political system and the success of the ideas in the coalitions, which may cause actors in the advocacy coalition to shift coalitions.

uses, first is of new or revised materials (i.e., curriculum materials), second is of new teaching approaches (i.e., teaching practices), and third is the alteration of beliefs (or understandings about the curriculum and learning practices) (Fullan, 2007). Even though educational change may be technically simple, it is socially complex (Fullan, 2007); therefore a shared meaning of educational change and the commitment is needed.

3.2.1 Tuition fees

High fees may prevent talented students from obtaining tertiary education; however, some governments allow different tuition fees. Tuition fees may be lower for students attending public institutions and/or students in short-cycle programs and higher for those in private institutions and/or foreign students. Several countries also offer scholarships, grants and public or state-guaranteed loans to support students, especially those from disadvantaged families, to reduce students' direct and indirect costs of education. In the last ten years, there was an increase in the number of tertiary students taking public or state-guaranteed loans in most OECD countries – and graduating with both a diploma and a debt.

Figure 14: Tuition fees charged by public and private institutions at bachelor's or equivalent level (2013/14)



Note: This figure does not take into account grants, subsidies or loans that partially or fully offset the student's tuition fees. Tuition fees should be interpreted with caution as they result from the weighted average of the main tertiary programmes and do not cover all educational institutions. However, the figures reported can be considered as good proxies and show the difference among countries in tuition fees charged by main educational institutions and for the majority of students.

Source: OECD (2017).

In all OECD countries, private institutions charge higher annual tuition fees than public institutions for bachelors or equivalent programs. Private institutions in some countries charge more than twice as much as public institutions (Figure 14). On the other hand, the difference in tuition fees between public institutions and government-dependent private institutions is minimal for all countries with available data. However, countries with low (or without) tuition fees apparently do not provide better access to tertiary education than those with higher fees.

Australia, Denmark, New Zealand, and Slovenia have first-time entry rates to tertiary education above 70% for national students (OECD, 2017). Countries which offer public loans at the bachelor's, master's and doctoral or equivalent levels reach the highest average annual loan per student, more than USD 4 000 in an academic year in countries where most students benefit from public loans. OECD countries' governments have different approaches to funding tertiary education and to provide financial support to students. It is in the best interest of all countries that students can afford tertiary education; however, some prefer to invest in lower tuition fees, while others offer student loans and grants to cover tuition fees (OECD, 2017). Tuition fees, on the one hand, cover the costs of tertiary educational institutions and on the other hand, generate revenues from sources other than students. Tuition fees should be interpreted with caution as they do not cover all educational institutions.

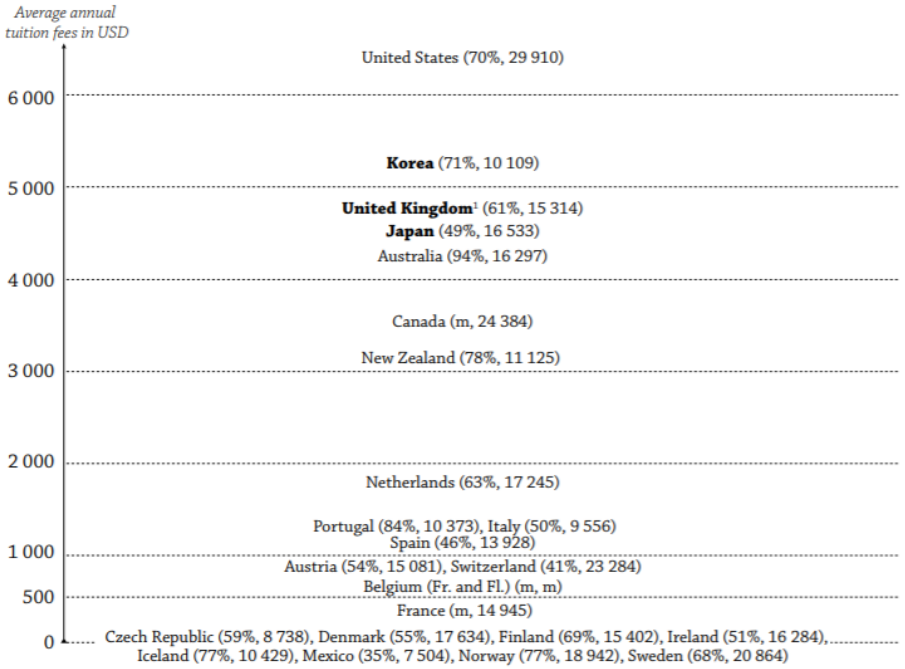
Level of tuition fees mainly depends on factors influencing the level of costs. Those are the salaries of teachers and researchers; development of innovative technologies in learning processes such as digital learning and nonteaching services; investments in internationalization; and the amount and type of research activities undertaken by faculty and staff. Some of the tertiary educational institutions costs are partly covered through internal resources or revenue from private sources other than students. The rest of the costs are covered by tuition fees paid by students and/or public sources. Amount generated by tuition fees not only present a certain cost for students but also importantly determine the budget of the educational institution and therefore the quality of courses, premises, and other equipment.

As mentioned before, the height of tuition fees determines the availability of tertiary education especially for those from disadvantaged backgrounds. Therefore, governments use different policies to make high education more inclusive and accessible for all. One possibility is to let educational institutions to charge high tuition fees, and the government provides grants and/or public student loans, to financially support students. Advantage of public loans are better conditions than on the market (e.g., lower interest rates) and possibility to write off debt (there is from 2% to 10% students who benefit from reduction or forgiveness of their loan) (OECD, 2011). Several strategies related to interest rates can be used to decrease the financial burden on students, for example reducing interest rates or applying different interest rates before and after the end of studies. With such an approach, institutions get funding through students increasing the competition and motivation of institutions to offer high-quality programs and meet the student's needs. Countries offer financial support to students in many forms, such as means-based grants, tax allowances for students and/or their parents, family allowances for students, or other transfers. The advantages and disadvantages of different funding of tertiary education have been widely discussed in the literature (e.g., Barr, 2004; Borck & Wimbersky, 2014). Often it is difficult for governments to find the right balance among these different subsidies, even more in times of financial crisis.

Many countries had implemented educational reforms in last few years focusing on tuition fee policies, as the level of tuition fees charged by tertiary educational institutions appears as one

of the public policy issues in education today, recognized by civil society and among policymakers (Figure 15). Figure 15 shows average yearly tuition fees charged by public institutions at the bachelor's or equivalent level and first-time entry rates to tertiary education for 17 countries. First-time entry rates represent the ratio of young adults that will enter tertiary education during their lifetime. Countries with first-time entry rates above 70% are Australia and New Zealand with tuition fees above USD 4 000 and Denmark and Slovenia with no tuition fees for national and European Economic Area (EEA) students. The highest tuition fees are charged in the UK; however, first-time entry rates are ranked close to the median. In Austria tuition fees are at the median with first-time entry rates almost at the bottom (before Italy).

Figure 15: Average annual tuition fees charged by tertiary-type A public institutions for full-time national students, in USD converted using PPPs (academic year 2008/09)



Note: This chart does not take into account grants, subsidies or loans that partially or fully offset the student's tuition fees.
1. Public institutions do not exist at this level of education and almost all students are enrolled in government-dependent private institutions.

Source: OECD (2008).

It is possible for policymakers to influence the level of tuition fees by either regulating the tertiary educational sector (not allowing fees) and/or offering grants for students. Restraints to the height of tuition fees make tertiary education more accessible and also diminish inequalities among the population by making schooling more equitable. Regulating the level of tuition fees seems like the only tool that can majorly affect access and equity of tertiary education, although tuition fees are related to other forms of student financial support. It can be challenging to balance financial support through tuition fees and try to make tertiary education accessible to a wide range of population at affordable costs. Higher tuition fees mean more resources available to institutions (supporting quality) and can help regulate increases in student enrolment. Additional resources are needed more than ever as the expansion of tertiary education in all OECD countries faced financial crisis and budgetary cuts. Contrary, lower tuition fees make

tertiary education more accessible, especially for students from low-income families in the absence of public support for studies.

There are different approaches to funding tertiary education. Nordic countries Denmark, Finland, Iceland, Norway, and Sweden have no or low tuition fees, student-support systems and no (or low) financial barriers to tertiary education. These countries have the highest level of public expenditure on tertiary education as a percentage of GDP. However, also the level of taxation on income is among the highest. The equality of opportunity and social equity as social values are reflected in this type of funding tertiary education with no charge to the user. The funding of both institutions and students in these countries is based on the principle that access to tertiary education is a right, rather than a privilege and it is deeply rooted in social values and educational culture of countries (OECD, 2008, see Chapter 4). Some countries, however, decided to or are thinking about introducing tuition fees for international students to raise the resources for their tertiary institutions, for example, Denmark, Iceland, and Sweden.

Another set of countries such as Australia, Canada, the Netherlands, New Zealand, the United Kingdom, and the United States are the one with highest tuition fees, but also offering student support systems. High tuition fees represent financial barriers to entry into tertiary education; however, this is partly resolved with public subsidies to students. These countries have surprisingly high first entry rates at 69%, which is above the OECD. Since 1995, the Netherlands and, to some extent, the UK have changed their model to low levels of tuition fees and less-developed student-support systems. In Australia, the Netherlands, New Zealand, and the United States, tuition fees in public tertiary educational institutions are above USD 1 500. With student-support systems well developed, 75% of students receive public grand, covering more or less the needs of the entire student population. Six countries have the ratio of public grants in total public expenditure on tertiary type of education close to or higher than the OECD average (21%), the Netherlands (29%), Australia (32%), New Zealand (42%), the United Kingdom (53%), Canada (17%), and the United States (20%) (OECD, 2011). Access to tertiary education in these countries is not lower than in other groups of countries; moreover, they spend more on core services per tertiary student and have a relatively high level of revenue from income tax as a percentage of GDP compared to the OECD average (OECD, 2013).

Countries with high tuition fees but poor student-support systems are Japan and Korea, representing a large financial burden for students. In these two countries, tuition fees are charged more than USD 4 500, and only a small number of students benefit from public subsidies (around one-third of students in Japan). Entry rates in these two countries are 49% for Japan and 71% for Korea, putting Korea significantly above the OECD average (OECD, 2011). Japan and Korea have low levels of public expenditure to tertiary education as a percentage of GDP, which may partially explain a small number of students benefiting from public loans. Japan, however, implemented a reform in 2009 with an attempt to improve the student-support system (compared to the year 1995). Public grants for students now represent 25% of total public expenditure on tertiary education, which is above the OECD average.

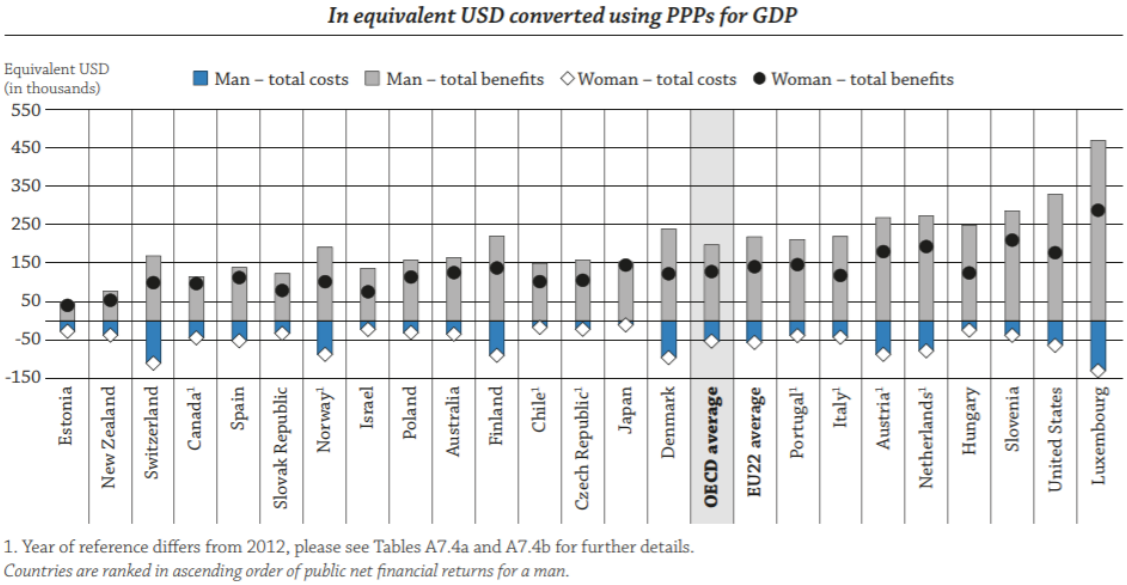
The last model is represented by countries with low tuition fees and poorly developed student-support systems. It includes all other European countries Austria, Belgium, the Czech Republic, France, Ireland, Italy, Portugal, Switzerland, and Spain and additionally Mexico. Since 1995, in Austria and Italy implemented some educational reforms to raise tuition fees for public institutions. These countries are charging moderate tuition fees, having relatively low financial barriers to entry into tertiary education (or no tuition-fee barriers, as in the Czech Republic, Ireland, and Mexico), and offer low subsidies for students, mostly for specific groups of students. Tuition fees are below USD 1 200 and the ratio of students who benefit from public grants is less than 40%. The average entry rate for these countries is relatively low at 50%; likewise, expenditures for tertiary education are comparatively low. Low level of tuition fees, which supposedly make education more accessible, does not automatically ensure high accessibility of education and the quality. Moreover, tuition fees and public grants are not necessarily the main factors that influence students' decisions to enrol into tertiary education systems.

3.2.2 Share of public and private expenditure as a percentage of GDP

In tertiary education, compared to primary and secondary education, private sources are more important and represent around 30% of governmental expenditure on average or 0.5% of GDP (see Figure 16). In some countries, private sources ensure that a significant percentage of national wealth goes into tertiary education; moreover, Canada, Chile, Costa Rica, Korea, and the United States are countries with the largest percentage of GDP spent on tertiary education (OECD, 2011). Partly also because these countries have the highest shares of private sources. Estonia is the only country among those spending above 2% of GDP (OECD, 2011) on tertiary education that has a small percentage of private sources, at 0.2% of GDP (see Figure 16).

Public net financial returns are based on the difference between costs and benefits related to individual achieving an additional level of education. Costs are calculated from direct public costs for education and sacrificed tax revenue on earnings. Benefits include income tax reduction, social contributions, social transfers and unemployment benefits (OECD, 2011). For governments are more important the direct costs, especially in countries such as Denmark, Finland, and Norway, where students pay low or no tuition fees and have access to public grants for tertiary education. Related to that individuals pay high-income tax rates in these countries. Countries with high direct costs, such as Denmark, Finland, Luxembourg, Austria, Norway, and Switzerland, are also the ones with high total public costs. Contrary, Japan has the lowest total public costs due to direct costs being applied to individuals.

Figure 16: Public costs and benefits of education on attaining tertiary education, by gender (2012)



1. Year of reference differs from 2012, please see Tables A7.4a and A7.4b for further details.
Countries are ranked in ascending order of public net financial returns for a man.

Source: OECD (2011).

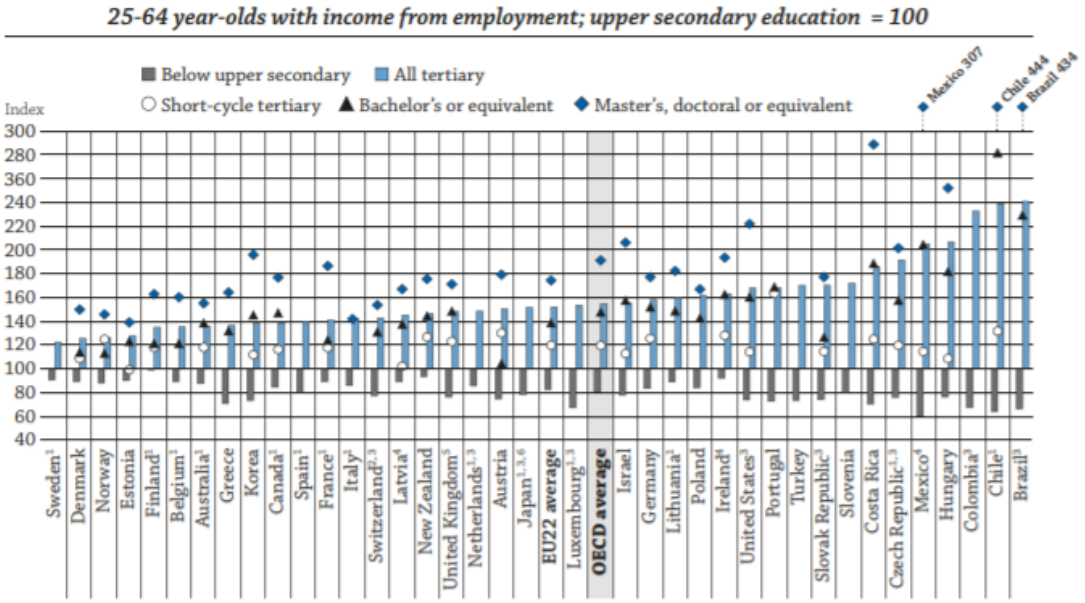
Public spending on education reduces initial inequalities in income, through progressive taxation putting more weight on the better-off and funding education for all. Putting everyone on equal footing is even more important when investing in early educational stages (OECD, 2006). Of course, investing in disadvantaged students is important also beyond the early stages of life, and successfully obtained secondary education is the key. Moreover, interventions later on in a person's life contribute to improving achievements, and personalized interventions have significantly positive returns. From a public finance point of view, the costs of investing in upper secondary education are lower than the benefits in all OECD countries. The public internal rate of return of a man with upper secondary education is accounting to 7.7% in OECD countries. In practical terms, this means average public net return of USD 36 000 per individual in OECD countries. In Austria, the UK and the US, it generates a net return high above OECD average of more than USD 70 000. The public returns to a woman attaining this level of education are lower than for a man, on average across OECD countries. Yet, the advantages are more than double on average, as the overall public costs for upper secondary or post-secondary non-tertiary education (OECD, 2011).

3.3 Employment outcomes

The importance of education is closely related to one's employment outcomes, namely earnings advantages from education. OECD research Education at a Glance 2016 revealed the differences in earnings among adults with different levels of education. In general, those with tertiary education have obtained large earnings advantages in comparison to individuals with upper secondary or below upper secondary education. Moreover, earnings of individuals with

upper secondary education exceeded those with below upper secondary education. Individuals with master's degree or doctoral degree, on average, earn twice as those with upper secondary education, while individuals with bachelor's or equivalent degrees earn up to 48% more (see Figure 17).

Figure 17: Relative earnings of adults working full time, by educational attainment (2014)



Note: Tertiary education includes short-cycle tertiary, bachelor's, master's, doctoral or equivalent degrees.

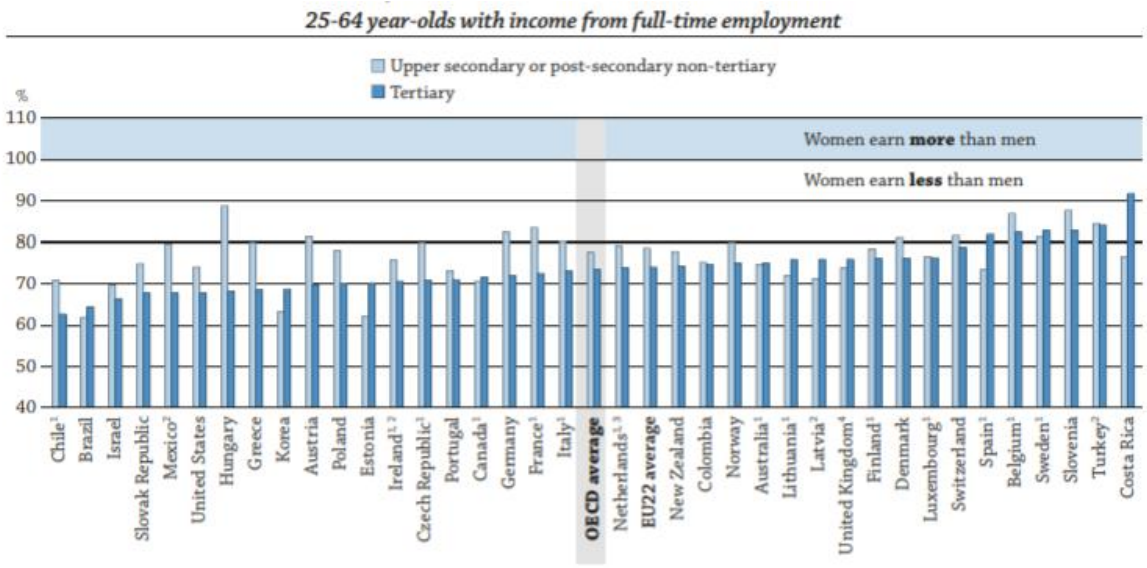
1. Year of reference differs from 2014. Refer to Table A6.1 for details.
2. Some levels of education are included with others. Refer to "x" code in Table A6.1 for details.
3. Index 100 refers to the combined ISCED levels 3 and 4 of the educational attainment levels in the ISCED 2011 or ISCED-97 classification.
4 Earnings net of income tax.
5. Data for upper secondary attainment include completion of a sufficient volume and standard of programmes that would be classified individually as completion of intermediate upper secondary programmes (18% of the adults are under this group).
6. Data refer to all earners.

Countries are ranked in ascending order of the relative earnings of 25-64 year-olds with tertiary education.

Source: OECD (2016a).

The gender gap in earnings is still persistent among all the levels of education, for example, a full-time female worker with tertiary education earns 27% less than a male worker with the same level of education (see Figure 18). This gender gap is higher in comparison to differences among male and female workers with below secondary education (24%) and upper secondary or post-secondary non-tertiary education where the differences do not exceed 22%. Many factors contribute to the gender gap in earnings, while one of the most commonly used explanations is that women continue to do most housework and family care in many countries. Moreover, these family obligations lead to a less competitive career leading to lower earnings for women than men with the same educational attainment (OECD, 2016b).

Figure 18: Women's earnings as a percentage of men's earnings, by educational attainment (2014)



Note: Tertiary education includes short-cycle tertiary, bachelor's, master's, doctoral or equivalent degrees.
1. Year of reference differs from 2014. Refer to Table A6.2 for details.
2. Earnings net of income tax.
3. Educational attainment levels are based on the ISCED-97 classification.
4. Data for upper secondary attainment include completion of a sufficient volume and standard of programmes that would be classified individually as completion of intermediate upper secondary programmes (18% of the adults are under this group).
Countries are ranked in ascending order of women's earnings as a percentage of men's earnings with tertiary education.

Source: OECD (2016b).

Individuals with better education usually have better-paid jobs and therefore higher earnings. Moreover, highly qualified individuals can increase their earnings during the time, while those with low levels of education start with low levels of earnings and usually end up with a decrease in their earnings over the time. Future high earnings are the main reason why individuals want to pursue high education and training and very often this is also one of the decisive factors when choosing the field of education (OECD, 2016b). Differences in earnings also depend on the demand for skills, the supply of workers, the minimum wage and labour market laws, labour unions, etc.

Differences in relative earnings across OECD countries are small for those with upper secondary education compared to substantial differences for those with tertiary education. Largest differences in earnings for those with tertiary education among OECD countries are in Brazil, Chile, Colombia, Hungary, and Mexico where adults earn on average more than two times more than those with upper secondary education for full-time work, which leads to widening inequalities. On the other hand, in countries like Denmark, Norway and Sweden earnings are only about 25% higher for individuals with tertiary education compared to upper secondary educated individuals (OECD, 2016b). The Survey of Adult Skills, a product of the OECD Programme for the International Assessment of Adult Competencies (PIAAC) shows that, in general, higher earnings are associated with the following fields: engineering, manufacturing and construction; social sciences, business and law; and science, mathematics, and computing, while graduates of humanities, social sciences and arts earn the least.

Lane and Colon (2016) have confirmed significantly higher earnings and employment outcomes, across the OECD, related to rising levels of formally recognized education, and overall higher levels of numeracy skills, literacy skills and readiness in using ICT for problem-solving. Therefore, the returns on the labour market for formally recognized education are higher than for skills proficiency (at given education levels). Namely, easy access to candidate's qualifications (and not their skills) when hiring is what gives those candidates an advantage. Therefore, candidates with higher levels of formally recognized qualifications and low levels of skills proficiency achieve superior labour market return. Even though, labour market gap has been narrowed by literacy and numeracy skills among individuals with different levels of education it is not closed completely (Lane & Conlon, 2016).

4 EMPIRICAL ANALYSIS OF COUNTRIES

In comparison with inequality levels all over the world, the inequality in European Union measured by the Gini index is reasonably low, around 0.3. Approximately half of the countries in the conducted analysis sample have low levels of inequality. Norway, Finland, Slovenia, Sweden, and the Netherlands had Gini coefficient below 0.28 in 2017. Another half: Spain, Italy, Portugal, and the UK had Gini coefficient above 0.33 in 2017, which is above EU average level. It is worth mentioning that the evolution of inequality in the EU countries affected by the sovereign debt crisis has been diverse, with a substantial increase in Spain, no significant changes in Greece and decreases in Portugal and Ireland. The country analysis of inequality is far from extended in the empirical literature, usually due to data availability constrains.

This master thesis offers an empirical examination of the factors that might influence income inequality. As predicted by the Kuznets (1995) theoretical approach, inequality decreases with development. In line with this approach, introducing technological innovations will follow the inverted-U pattern, initially rising inequality. According to the estimates in master's thesis, it follows that a higher proportion of highly educated people and/or employed have an increasing impact on inequality.

4.1 Countries analysis

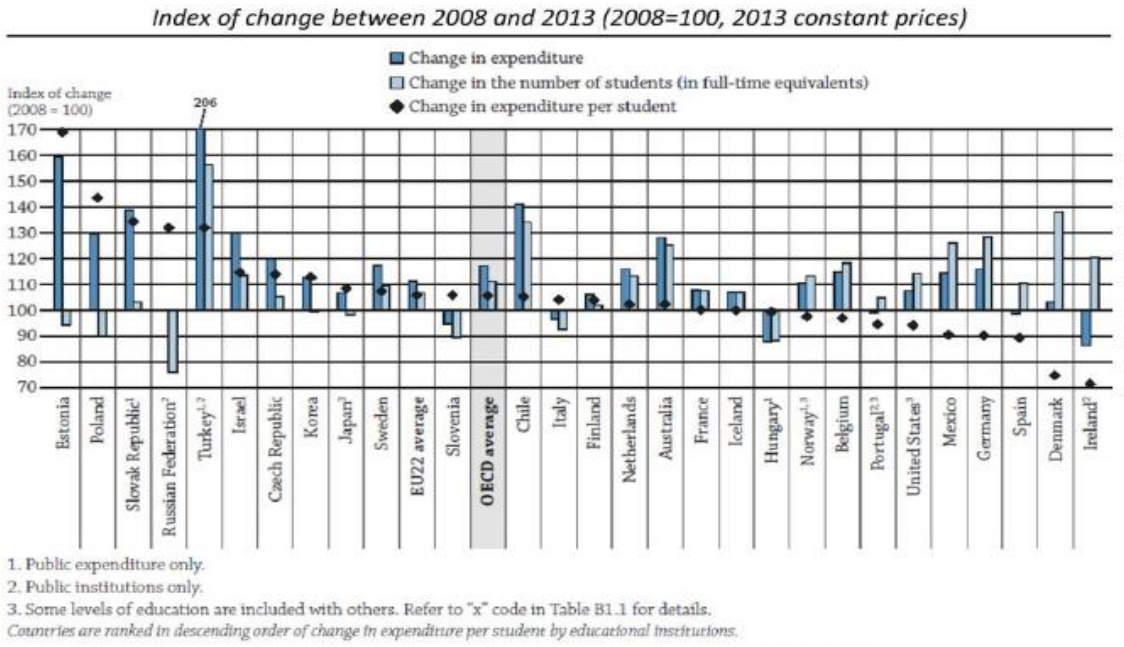
Denmark is among the most successful countries when it comes to high achievement in education and equity of students. However, Denmark is still lagging behind the Nordic countries when talking about student's high performance. Regardless the budget cuts on education investments, Denmark expenditures on primary to tertiary education are one of the highest among OECD countries (and the biggest investor in EU), between 5.8% of GDP in 2008 and 6.4% of GDP in 2013 (OECD, 2016b).[10] The highest, 3% rise in expenditures, was made in period 2008 to 2013 in tertiary education, however, due to almost doubled enrolment rates

[10] OECD (2016b). "Denmark", in Education at a Glance 2016: OECD Indicators, OECD Publishing, Paris.

(38% increase) since 2008, this resulted in a 25% decrease in expenditure per student (see Figure 19).

Moreover, there was a 14% higher enrolment rate for students at primary to non-tertiary level, resulting in overall 5% decrease in expenditure per student to USD 16 460, while the OECD average is at USD 15 772 per student. Moreover, research takes 58% of all tertiary expenditures, positioning Denmark at 2nd place after Switzerland as the biggest investor. Denmark is among the few countries that are funding tertiary education entirely through central government investments, compared to OECD average of 85%. Tertiary education plays an important role in the labour market, positioning Denmark above the OECD average (42%) with 44% of 25–34 years-old graduates with a tertiary education degree. Moreover, Denmark is a very attractive destination for international students at tertiary education level, with most of them coming from Norway (12%), Germany (11.4%), and Sweden (8.8%) in 2014.
In 2014, Denmark enrolment in vocational programmes of upper secondary students reached 42% (OECD average is only at 13%). The Vocational Education and Training reform of 2015 brought a positive impact on the transition to higher education, trough combined school, and work-based programmes. Another reform was made in 2014, called the compulsory school (Folkeskole) and reform of upper secondary education starting in 2017/2018. The focus is on how to manage student flows, speed up graduation and smoothen the transition from study to work. Surprisingly, adults between 25–34-year-olds are at lower employment rate (82%) than those with upper secondary or non-tertiary education, reaching 85% employment rate.

Figure 19: Changes in the number of students, expenditure in educational institutions, and expenditure per student in tertiary education (2008, 2013)



Source: OECD (2016b).

Sweden is among top EU countries by general investments in education and related government expenditure. As high as 5.4% of Sweden gross domestic product goes to educational institutions from primary to tertiary education. In addition, Sweden primary, secondary and post-secondary non-tertiary education is fully funded by public sources, while tertiary education is 89.5% publicly financed. Public funding has increased between 2005 and 2013 by 24% (compared to a 9% increase in private funding) for tertiary education. Moreover, tertiary educational attainment rates in Sweden are one of the highest in the EU, and the unemployment rate of its recent tertiary graduates is at its lowest. Access to high-quality childhood education and care, makes a difference later on, as 89% of 2-year-olds were part of early childhood education in 2014, the highest share among OECD countries (OECD average is at 36%). Furthermore 93% of 3-year-olds and 95% of 4 to 5-year-olds were enrolled in early childhood education in 2014.

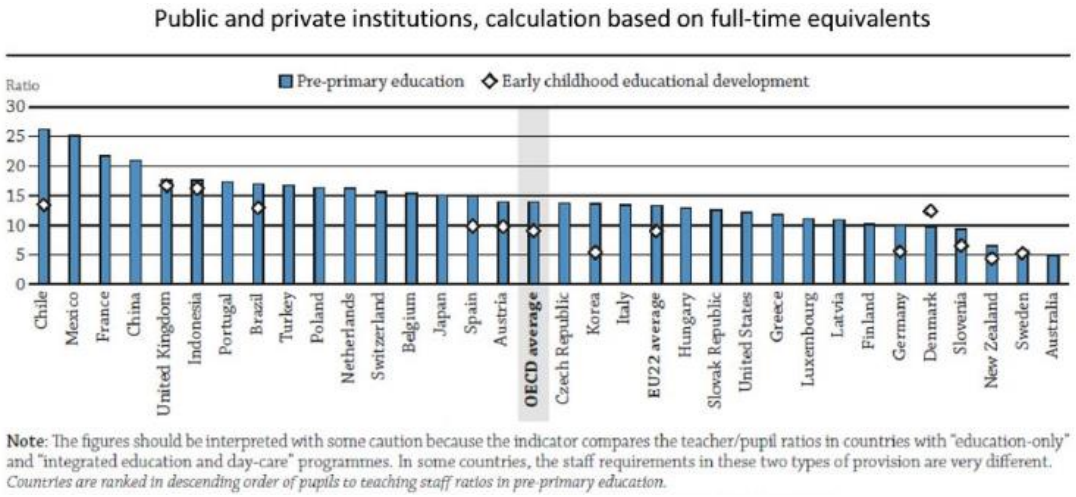
Education outcomes have improved after years of weak performance, with major improvements in mathematics and reading. However, the entrance to the labour market is still challenging for most of the young adults, especially when talking about full-time employment. For those who have attained tertiary education (40% of 25–64 years old), the employment rates are as high as 90% for bachelor's degree holders to 92% for master's degree holders. Sweden has made the biggest improvement in closing gender gaps among EU countries, resulting in an opposite effect of under-representation of men. The gender gap in the employment rate was as narrow as one percentage point for tertiary education and 15 percentage points for those with below upper secondary education, making Sweden the leading OECD country in gender gap closings. As training and vocational education are useful tools to provide more pathways into the labour market, Sweden annual expenditure in vocational programs is as high as USD 14 126 per student. Overcoming the OECD average of USD 8 869 per student, the 44% share of student's enrolment in the vocational programme is still close to OECD average. Moreover, one of the key policy priorities is to give individuals with vocational education access to tertiary education (OECD, 2016b).[11]

Many reforms such as The Curriculum for the 21st Century help to develop more comprehensive school systems and teacher development through programmes that aim to maintain the quality of the education system while addressing the increasing inequalities. Finland has significantly reduced early school leaving in 2016 compared to previous years with a slight gender gap. A majority (nearly 90%) of 53% of children that are enrolled attend public institutions during their early childhood education. Finland invests above OECD average (0.8%) to early childhood education, 1.2% of the country's GDP. Moreover, pupils in Finland at early childhood education level benefit from low student-teacher ratio 10, compared to OECD average 14 (see Figure 20). As for now, the students do not pay tuition fees, and the education system continues to face public budget cuts. Vocational education and training for upper secondary graduates are raising their employment rates compared to their peers that attained general programmes. Moreover, these programmes are 99% publicly funded in Finland, similar to other Scandinavian countries (compared to OECD where 86% of VET

[11] OECD, (2016b). "Sweden", in Education at a Glance 2016: OECD Indicators, OECD Publishing, Paris.

programs are publicly funded). Finnish students are ten percentage point above EU22 average as in 2015 there was 43% of 24–65 years old with tertiary education level. This trend has some positive effects on employment rate as higher the level of degree shows in higher employment rates. Finland is among those countries where young people with a migrant background still do not perform at high levels; therefore, some policies should address these differences in school performance (OECD, 2016b).[12]

Figure 20: Ratio of pupils to teaching staff in early childhood education (2014)



Source: OECD (2016b).

The gender gap is still challenging the Netherlands policies toward equal employment opportunities as well as earning outcomes for women. The downward trend in early school leaving continued in 2016 (OECD, 2016b). Despite good overall school performance, there has been an increase in educational inequality. Equitable schooling and employment opportunities for young people from an immigrant background remain a challenge. The Netherlands is facing gender imbalance as most OECD countries, especially at tertiary education levels. Employment rates for women remain lower compared to men as well as employment outcomes. Women with tertiary education earn 26% less than male colleagues, comparable to the OECD average of 27%. However, the employment outcome gaps seem to be declining with the younger generation. The Netherlands reached significantly higher graduation rates from vocational programmes at the upper secondary level with 77% compared to the OECD average of 46% in 2014. Total expenditure on primary to tertiary education is near OECD average level[13] at 5.5% of country GDP. Public sources mostly fund education at all levels, 82% compared to the OECD average 84%, accounting for 11.3% of public expenditure on education, same as OECD average for the year 2013. Due to transition from the grant-based system to student loans, enrolments dropped in higher education in 2015 but recovered in 2016 with a steady growth of tertiary

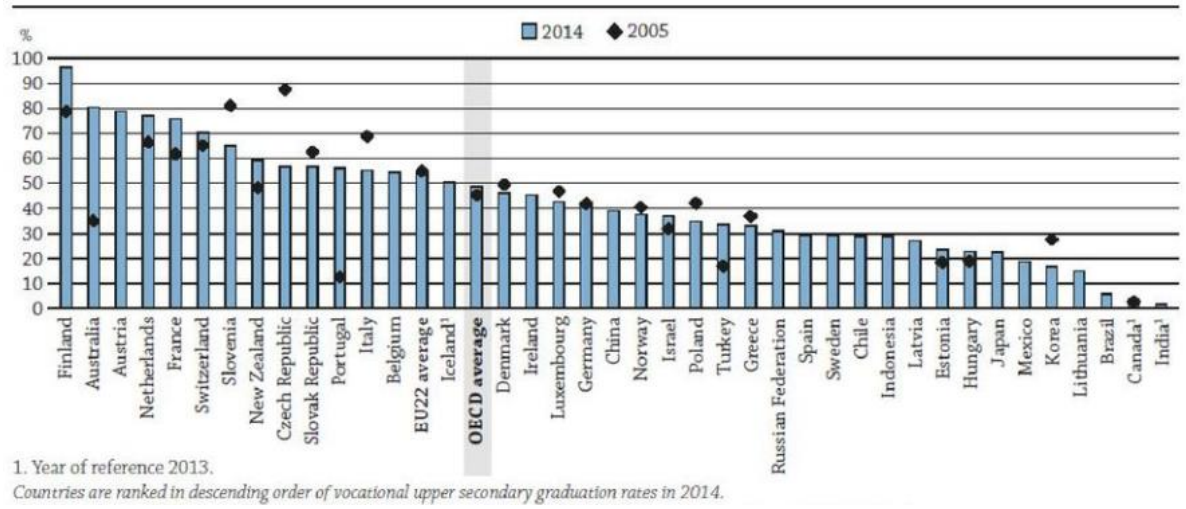
[12] OECD, (2016b). "Finland", in Education at a Glance 2016: OECD Indicators, OECD Publishing, Paris.
[13] OECD average total expenditure on primary to tertiary education is 5.2%.

attainment among youngsters, now reaching OECD level at 35%. Forecast for the future shows an increasing trend of graduates, estimating that almost 65% of youngster will enter tertiary education programme over their lifetime (compared to the OECD average 59%). Moreover, employment prospects for those with tertiary education are positive, as in 2015 88% of 25–64 year-olds with a tertiary level of education were employed (OECD average 84%) and with even higher employment rates among younger adults[14] reaching 91% employment rates (OECD, 2016b).[15]

Portugal reached one of the largest increases in real expenditure on education from primary to post-secondary non-tertiary levels by 33% in the period 2008 to 2013. Expenditures on primary to tertiary education account for 6.1% of country GDP, which is considerably above the OCED average level of 5.2%. There was a decline of public funding for tertiary education institutions by 12% and as a result, the private funding increased by 4% in the period 2008 to 2013; moreover, the share of public funding fell from 62% of total expenditure to 58% over the same period of time (OECD, 2016b). Therefore, Portugal expenditures are second lowest (after the UK) lagging behind EU22 countries for 20 percentage points. Portugal reform 'National Plan to Promote Success at School' initiative to reduce early school leaving and preventing school failure started this year (2019) and will ensure the full public provision of pre-school education for all children aged 3–5 years. The number of schools that decided to participate has exceeded expectations. In line with these goals the participation in early childhood education rose and by 2015 91% of children were enrolled in pre-preliminary education programs, compared to OECD average of 85%. Portugal is improving tertiary attainment, however, meeting the ambitious national Europe 2020 target[16] will be a challenge. Low attainment rates of tertiary education among 25–64 year-olds (23%) and low rates of adult education participation aged between 30–64 years (1.4%) may be partly resolved by promoting part-time participation in tertiary or equivalent programmes. Promotion of adult education, due to low upper secondary level attainment rate for the age group 25–64, has a key role in the current education policy. Enrolment rate at only 0.3% for this age group (see Figure 21) should be addressed by policies trying to increase the adult population's low level of basic skills (OECD, 2016b).[17]

[14] Younger adults refer to 25–35 year-olds.
[15] OECD, (2016b). "The Netherlands", in Education at a Glance 2016: OECD Indicators, OECD Publishing, Paris.
[16] EU target: > 40% having completed tertiary education.
[17] OECD, (2016b). "Portugal", in Education at a Glance 2016: OECD Indicators, OECD Publishing, Paris.

Figure 21: Change in vocational upper secondary graduation rates (2005, 2014)

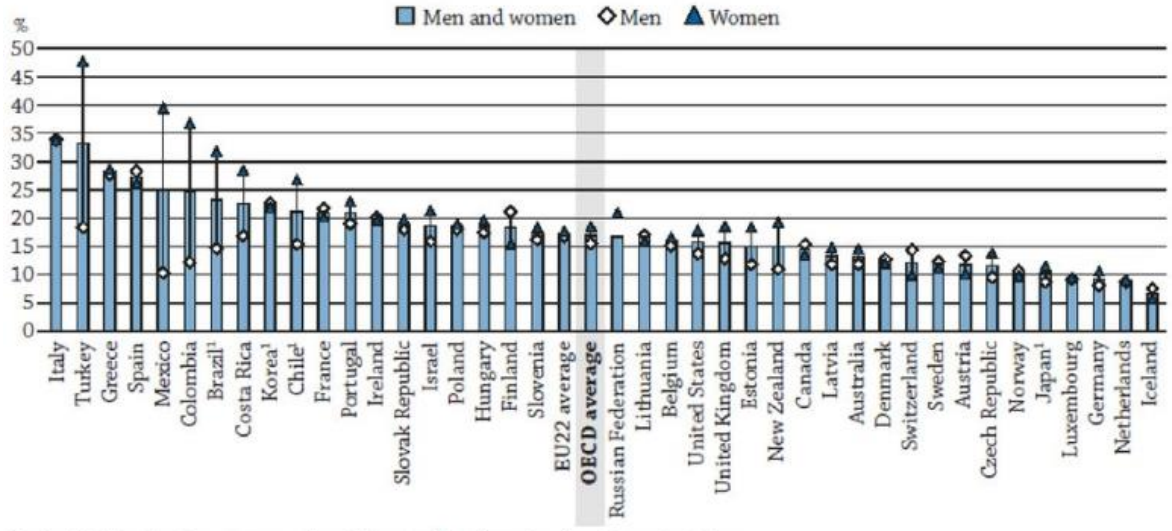


Source: OECD (2016b).

During the economic crisis in 2008, Italy approved Law 133 making public expenditure more efficient, resulting in a reduction of total public expenditure on education between 2008 and 2013 by 14%. Moreover, Italy is number one country in OECD among 20–24 year-olds that are unemployed (and not in education or training programmes), and this number has increased by ten percentage points in the last decade. In 2015 the portion was as high as 35% (see Figure 22). Italy's total public expenditure to primary through tertiary education was 7% in 2013, which is the among lowest shares (after Hungary) in OECD countries, where the average is at 11%. Italy is dealing with inequality of schooling opportunities and educational immobility across generations, especial for those with foreign-born parents or immigrant background. However, inequality in educational attainment does not refer only to those with the immigrant background but to the overall population. Among 25–44 year-old non-students whose parents have below upper secondary education, 54% did not reach higher education than their parents. While still above the EU average, the early school leaving rate is on a steadily downward trend. However, early childhood education attainment is almost universal for four- to six-year-olds. Tertiary education is not considered as a good pathway to the labour market, resulting in low attainment rate for 30- to 34-year-olds as well as low employment rates of 25–34 tertiary graduates, which is as low as 62% (OECD average is 83%). The transition from education to work is difficult, even for high-qualified people, causing an outflow of highly skilled people. (OECD, 2016b).[18]

[18] OECD, (2016b). "Italy", in Education at a Glance 2016: OECD Indicators, OECD Publishing, Paris.

Figure 22: Percentage of NEETs among 20–24 year-olds, by gender (2015)



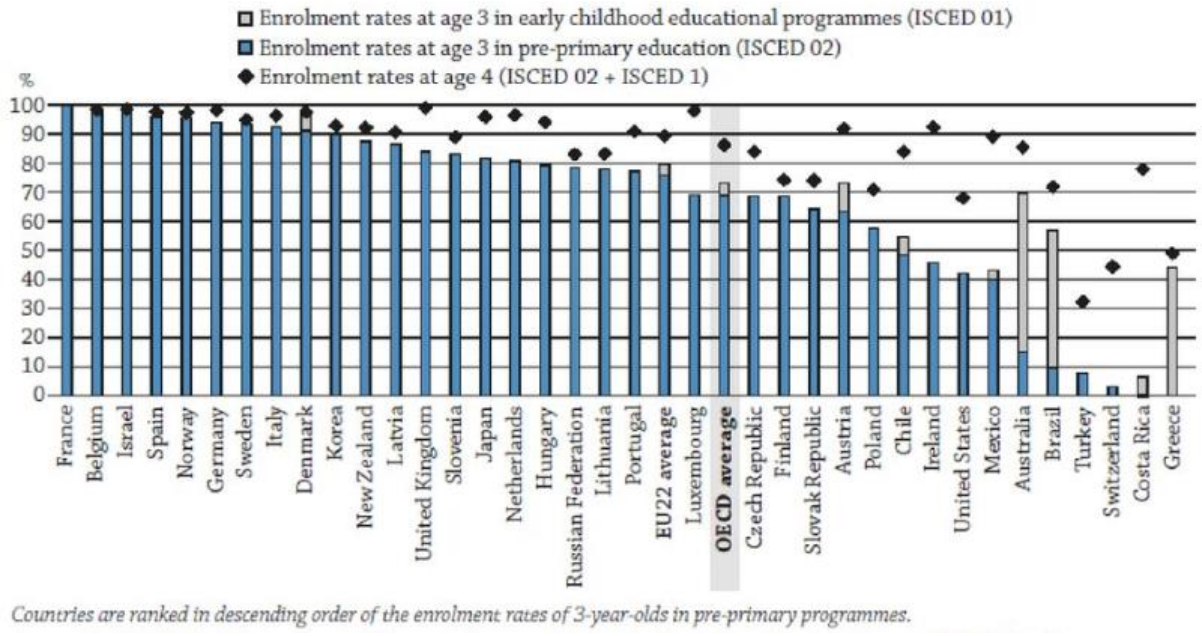
Note: NEET refers to young people neither employed nor in education or training.
1. Reference year differs from 2015. Refer to the source table for more details.
Countries are ranked in descending order of the percentage of 20-24 year-old NEET population of men and women.

Source: OECD (2016b).

Spain has slightly higher gender equality than OECD average, as in 2014 60% of women obtained a bachelor's degree and 49% doctoral or equivalent level of education (OECD, 2016b). Similar to other OECD countries in Spain women earn 18% less than men at the tertiary educational level, compared to OECD where the eranings are 11% lower than men's. Expansion in tertiary education has been a trend over the past decade in Spain. The increasing number of tertiary-educated adults in Spain reached 35% in 2015 compared to 2005 when it was 29%. Following the current patterns, the forecast for the future graduation rate of tertiary educated students would reach 59%, compared to OECD average where only 49% of young adults would graduate from a tertiary degree at some point in their lifetime. Spain has a very high share of studens that are enrolled only part-time in tertiary education whereof all part-time students 74% are aged between 30 and 64 years. Moreover, enrolment rates for early childhood education programmes are almost at 100%, with half of the children attending public institutions. Spain is one of the few OECD countries with nearly full early childhood education enrolment rates at all levels of educational programmes, 96% at age 3, and 97% at age 4 (compared to OECD average 71% and 86%) (see Figure 23). Educational programmes from primary to post-secondary non-tertiary education are in 80% publicly funded from regional governments (OECD average 22%), contrary to most of OECD countries where educational programmes are mainly funded by central government – on average 56%. Total public expenditure on education as a percentage of total public expenditure from 2008 to 2013 stayed at the same level of 11%. Proposal of the Spanish Parliament for Social and Political National Pact on Education would set the guidelines for long-lasting education reform. Students' abilities as measured by PISA 2015 measurement of student's abilities had given stable results for Spain, at the average level

of OECD countries and a significant drop of early school leaving. However, regional differences are still persistent and indicate uneven progress across the country (OECD, 2016b).[19]

Figure 23: Enrolment rate at age 3 and 4 in early childhood and primary education (2014)



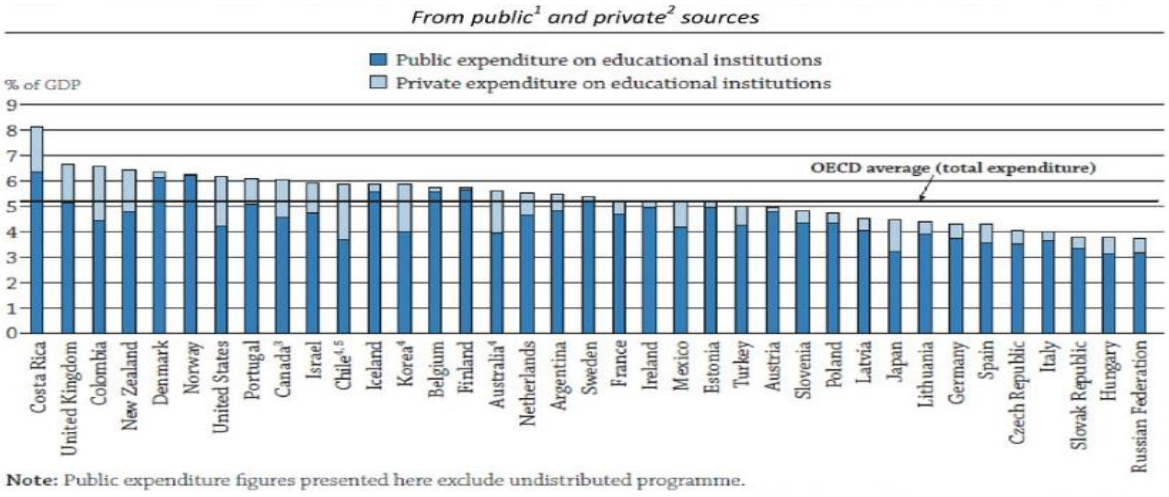
Source: OECD (2016b).

UK reaches high levels of enrolment for 3-year-olds (84%) and almost universal (95%) for 4-year-olds in early childhood education institutions, with private institutions enrolment at OECD average levels (OECD, 2016b). Most of the funding for early childhood education comes from public funds; however, the share of private sources at the pre-primary level is above the OECD average. Total expenditure on early childhood education programmes is below OECD average, in 2013 0.04% of country GDP was invested into early childhood education (OECD average 0.2%). UK investments on primary to tertiary education are one of the highest among OECD countries, spending 6.7% of country GDP (see Figure 24), compared to a 5.2% OECD average. Moreover, the expenditure per student is among the highest at the tertiary level, as more than double OECD average is spent annually per tertiary student accounting for USD 25 744 (OECD average 15 772). UK private funding on educational institutions is double the OECD average of 7% – coming from the household expenditure. Tertiary education is in 57% funded from public sources (compared to OECD average 70%) and 19% from private sources, just below OECD average of 21.3%. The UK is a very specific country compared to other European countries when it comes to tuition fees, as they charge high tuition fees usually covered by public student loans. The average tuition fee for a tertiary educational programme for

[19] OECD, (2016b). "Spain", in Education at a Glance 2016: OECD Indicators, OECD Publishing, Paris.

government-dependent private institution is as high as USD 9,000 per sudent for school year 2013/2014. However, 92% of students at tertiary educational level receive student loans and/ or scholarship and grants to cover an increase in tuition fees. Inequalities in school funding are at the centre of the current restructuring of funding for schools in the UK. Surprisingly the UK, contrary to most OECD countries, does not record lower attainment of tertiary education for individuals with an immigrant background. The attainment is even higher among those with an immigrant background than for those without, as 58% of those with foreign-born parents attain tertiary education, compared to 46% of those without immigrant background (OECD, 2016b).[20]

Figure 24: Public and private expenditure on educational institutions, as a percentage of GDP (2013)



Source: OECD (2016b).

4.2 Key indicators of countries

4.2.1 Data and empirical strategy

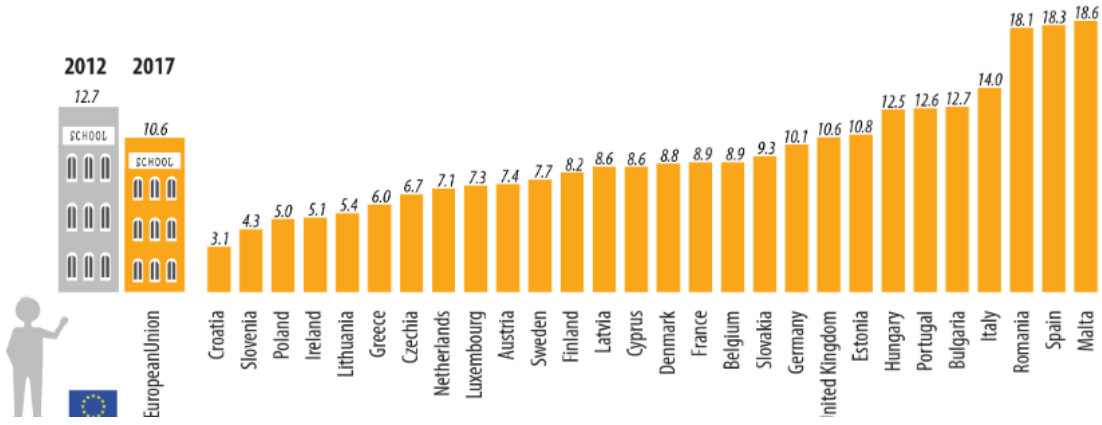
The analysis examines nine countries – Denmark, Spain, Italy, the Netherlands, Portugal, Slovenia, Finland, Sweden, and the United Kingdom – quantitative measures of social mobility in terms of change in economic mobility such as income in the 7-year time period from 2010 to 2016. The analysis is based on Eurostat database individual country-level data for four key indicators of social mobility which are a) early leavers from education and training, b) tertiary educational attainment, c) early childhood education and care and d) employment rate of recent graduates by educational attainment. The analysis focuses on countries social mobility potential – meaning the socio-economic environment of a country where individuals can have better or worse chances to move upward socio-economic ladder. Higher levels of income inequality are related to lower rates of social mobility; however, the causality is still unclear. Education

[20] OECD, (2016b). "the UK", in Education at a Glance 2016: OECD Indicators, OECD Publishing, Paris.

provides one of the most promising channels by which upward social mobility can be translated into a better social class despite current social status in society. In other words, higher rates of income inequality, affecting one's educational opportunities, might lead to lower rates of upward mobility through lower rates of human capital investment among low-income individuals that affect a child's chances for obtaining a quality education and succeeding in life (Greenstone, Looney, Patashnik & Yu, 2016).

All four parameters are related to education's influence on social mobility. Early leavers from education and training (hereafter: ELET) refers to "a person aged 18 to 24 who have completed at most lower secondary education and is not involved in further education or training; the indicator 'early leavers from education and training' is expressed as a percentage of the people aged 18 to 24 with such criteria out of the total population aged 18 to 24" (Eurostat definition) (see Figure 25). The data on early leavers from education and training shows that children from the disadvantaged, low-income, background are more likely to drop out of school if they live in an environment with a substantial gap between the bottom and middle of the income distribution (Kearney & Levine, 2016). The indicator explains how income inequality can result in a perpetuation of economic disadvantage. Early leaving is a complex challenge at the individual, national and European level and should be addressed by policymakers to find relevant types of interventions and programs that would effectively promote upward mobility. European countries have committed to reducing the proportion of early leavers to less than 10% by 2020.[21]

Figure 25: Early leavers from education and training (% of population aged 18–24), 2017



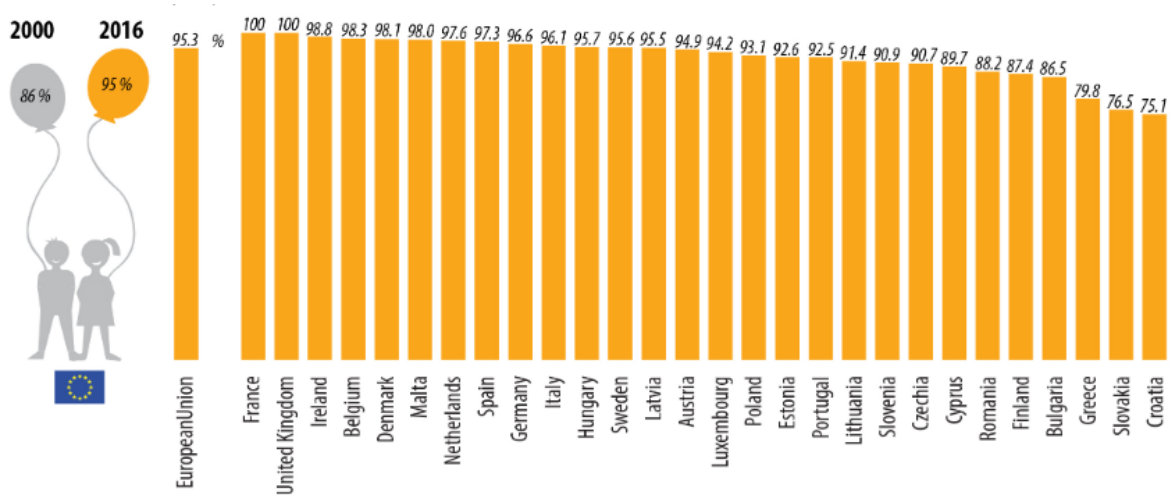
Source: Eurostat.

Participation in early childhood education for the EU-28 is defined as the share of the population aged between four years and the age when compulsory education starts. For other

[21] The strategic framework for European cooperation in education and training (known as ET 2020) adopted a benchmark to be achieved by 2020, namely, that the share of early leavers from education and training in the EU-28 should be not more than 10%.

countries the indicator shows the gross enrolment ratio for pre-primary education, which is "the number of children in pre-primary education as a percentage of the eligible official school-age population corresponding to the same level of education in a given school year – it may include under and over-age enrolment" (Eurostat definition). Early childhood education and care have a significant effect on children's cognitive and noncognitive skills development. Substantial differences between low-, middle- and upper-class children's benefits from early childhood education and care that persist over a lifetime are raising serious concerns and are a topic of many debates on how to ensure equitable, high-quality early childhood education programs for disadvantaged children (see Figure 25).

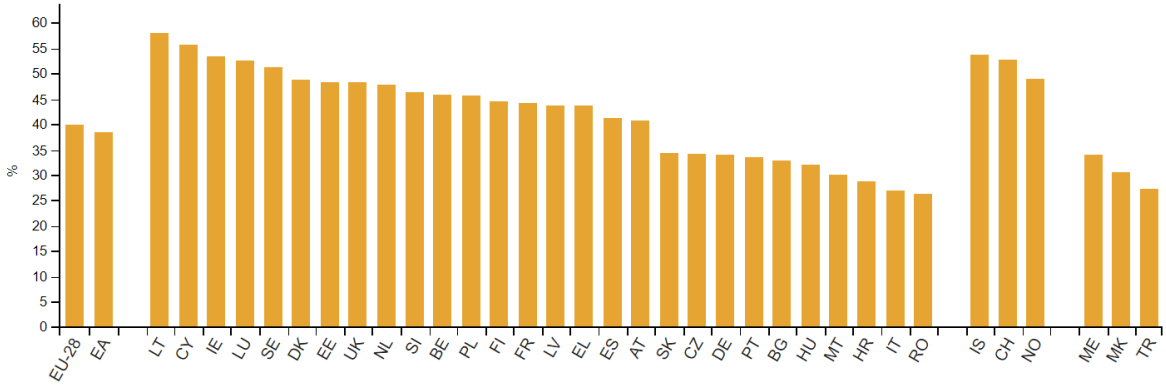
Figure 26: Share of children from 4 years old to the starting age of compulsory education participating in early childhood pre-primary) education, 2016



Source: Eurostat.

Tertiary educational attainment plays an important role in social mobility analysis with its positive correlation to earnings. Tertiary education is provided by universities and other higher education institutions defined as the level of education following secondary schooling. Data on tertiary education shows that it plays a vital role in society in fostering research and innovation, accelerating economic development and growth, and generally improving the well-being of society (see Figure 26). Many European universities are among the most prestigious in the world. Due to fast technological development, there will be increased demand for highly skilled people taking jobs that are flexible and complex. Digital technology has resulted in the necessity for individuals' capacities to manage complex information, creativeness, effective management, as well as effective communication. Those who hold a higher education degree have usually higher earnings and more opportunity for upward mobility. Therefore, tertiary or similar level education attainment is an important determinant of social mobility (Checchi, 2004; Becker, 1993; Psacharopoulos, 1994; Psacharopoulos & Patrinos, 2004).

Figure 27: Population aged 30–34 with tertiary educational attainment (ISCED 5–8), 2017

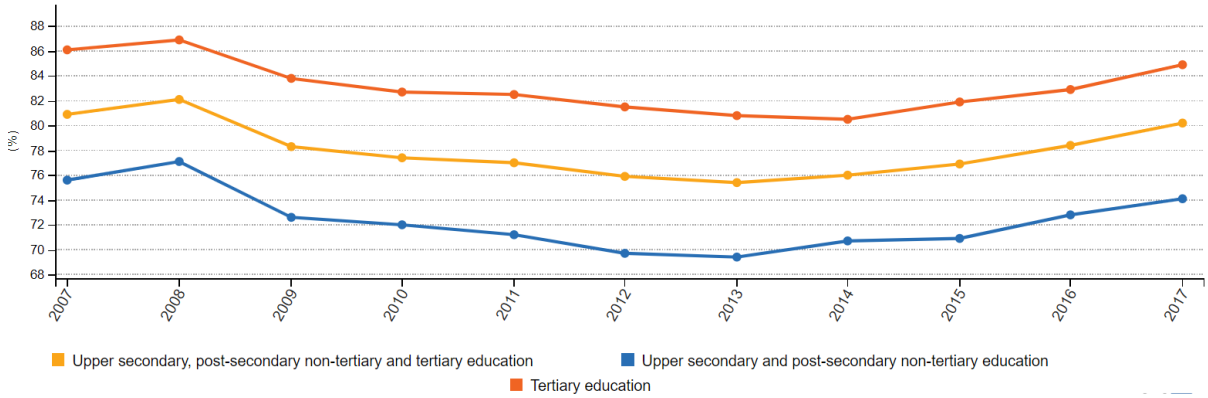


Source: Eurostat.

The indicator[22] "employment rates of recent graduates" presents "the employment rates of persons aged 20 to 34, being employed (according to the ILO definition 23), having attained at least upper secondary education as the highest level of education, not having received any education or training in the four weeks preceding the survey and having successfully completed their highest educational attainment 1 to 3 years before the survey" (Eurostat definition). Education is importantly influencing several economic phenomena, especially participation and success in the labour market (e.g., Card, 1999; Hartog, 2000; Jenkins & Siedler, 2007). This indicator shows the influence that higher education has on social mobility in terms of university attendance and achievement, as well as occupation and economic outcomes following graduation. In general, established and new information give substantial evidence that the higher the education, the better socio-economic outcomes (see Figure 28). However, this is usually related to the fact that youngster from a disadvantaged background, on average, graduate at lower education levels than their richer peers. The graph shows that higher employment rates in 2017 were recorded for those who had graduated with tertiary education, while lower employment rates were recorded for those with an upper secondary or post-secondary non-tertiary education. However, the employment rate trend over the 10-year period was similar for all three levels of education.

[22] The indicator is calculated based on data from the EU Labour Force Survey.
[23] Persons employed in the sense of the ILO are those who worked for any amount of time, if only for one hour, in the course of the reference week.

Figure 28: Employment rates of recent graduates (aged 20–34) not in education and training, by educational attainment



Source: Eurostat.

4.3 Empirical findings

Social mobility has an impact on creating the opportunity for talents across the social spectrum to be recognized and developed and therefore, boosts the economy, raises productivity and gross domestic product (GDP). High social mobility means lower inequality of educational opportunities leading to a better match between people and jobs. Evidence across countries shows that higher social mobility societies have better matching of people to job opportunities and therefore more productive workforce. Hence policies and lawmakers attempt to increase social mobility and unlock the potential of individuals generating additional value to the economy in the future. This is consistent with the efforts of policymakers to increase equality of access to university education.

For the purposes of analysis, social mobility is measured in terms of equal opportunities in a society defined through the Gini coefficient. Variables affecting social mobility are focusing on four key indicators of social mobility that depend on accessibility and quality of education. Data is observed across nine countries – Denmark, Spain, Italy, the Netherlands, Portugal, Slovenia, Finland, Sweden and the United Kingdom in the 7-year time period from 2010 to 2016 and then compared how these factors influence Gini coefficient of countries.

Gini coefficient is a common measure of income inequality in a society. It is defined as a "non-dimensional ratio of the relative mean absolute difference of income between two income classes to double their mean" (Dixon, Weiner, Mitchell-Olds & Woodley, 1987). Empirical evidence shows a significant correlation between Gini coefficient and social mobility, namely, it is found that mobility is reduced when inequality rises implying a negative correlation (Andrews & Leigh, 2009; Spannagel & Broschinski, 2014). This correlation shows that the increase of inequality (as presently observed in several countries) tends to be a self-reinforcing phenomenon (Jerrim & Macmillan, 2015) unless it is complemented by suitable social policies (Bertotti, Chattopadhyay & Modanese, 2017). It should also be stressed that this correlation

holds for societies at near equilibrium, while it may be different in phases of strong economic growth (Aghion, Caroli & Garcia-Penalosa, 1999).

For the analysis, a multilevel model is used. Multilevel models are statistical models of parameters that vary at more than one level. In multilevel model some variables are clustered or nested within other variables. Employed case model contains measures for individual independent variables as well as measures for countries within which the independent variables are grouped. These models serve as generalizations of linear models (linear regression), however, can also be extended to non-linear models (Douglas, 2004).

Multilevel linear models are an extension of regression; therefore all assumptions for regression apply to multilevel models. Assumptions of independence can sometimes be solved by a multilevel model as the purpose of a multilevel model is to factor in the correlations between cases caused by higher-level variables. Additional assumptions are related to the random coefficients, which are assumed to be normally distributed around the whole model. Multicollinearity can be a problem when dealing with multilevel models; however, centring can help to resolve it (Kreft & de Leeux, 1998).

In the data set, there is collected data from nine countries. The bottom of the hierarchy is data of four key indicators

a) early leavers from education and training (ELET),
b) tertiary educational attainment (TEA),
c) early childhood education and care (ECET) and
d) employment rate of recent graduates by educational attainment (ER)

known as a level 1 variables (1).

$$Gini\ Coef_i = b_0 + b_1 ELET_i + b_2 TEA_i + b_3 ECET_i + b_4 ER_i + \mathcal{E}_i \quad (1)$$

i = level 1 variable; observed country

To illustrate one of the equations, we take Gini Coefficient and the Netherlands:

$$Gini\ Coef_{NL} = b_0 + b_1 ELET_{NL} + b_2 TEA_{NL} + b_3 ECET_{NL} + b_4 ER_{NL} + \mathcal{E}_{NL}\,\mathcal{E}_i \quad (2)$$

These independent variables are organized by countries. The time period to which a specific indicator belongs is a level up from the participant in the hierarchy and is said to be a level 2 variable (2). Applying the same logic as before, key indicators of social mobility within a country will be more similar to each other than key indicators of social mobility in different countries. Due to differences in social demographics among countries they may also differ in their policies.

$$Gini\ Coef_{ij} = b_{0j} + b_{1j}ELET_{ij} + b_{2j}TEA_{ij} + b_{3j}ECET_{ij} + b_{4j}ER_{ij} + \mathcal{E}_{ij} \quad (3)$$

j = level 2 variable; time period

To the equation (1) for the Netherlands we add time period year 2010:

$$Gini\ Coef_{NL,2010} = b_0 + b_{1,2010}ELET_{NL,2010} + b_{2,2010}TEA_{NL,2010} + b_3ECET_{NL,2010} + b_{4,2010}ER_{NL,2010} + \mathcal{E}_{NL,2010} \quad (4)$$

Next, the mean of independent variables in the selected time period (7 years) for every country is calculated separately, which tells the differences across countries. Variables have been centred around the mean (this centres the variables around 0), which shows the differences within the country in the selected time period. Centring is a process of transforming a variable into deviations around a fixed point, in this case the group mean. There are two forms of centering that can be used in multilevel modelling: grand mean centering and group mean centering. Grand mean centering means that for a given variable we take each score and subtract from it the mean of all scores (for that variable). Group mean centering means that for a given variable we take each score and subtract from it the mean of the scores (for that variable) within a given group. With centring a variable around the mean, the mean is subtracted from all of the scores. Group mean centring was used to centre level 1 variable around means of a level 2 variable. Centring early leavers from education and training around its mean changes the meaning of the intercept. The intercept becomes the value of the outcome when early leavers from education and training are at its average value. In more general terms, if all predictors are centred around their mean then the intercept is the value of the outcome when all predictors are at the value of their mean. The effect of centring in multilevel models, however, is much more complicated (Kreft & de Leeuw, 1998; Kreft, de Leew & Aiken, 1995). When group mean centring is used the score model is not equivalent to the centred model in either the fixed part or the random part. One exception is when only the intercept is random (which arguably is an unusual situation), and the group means are reintroduced into the model as level 2 variables (Kreft & de Leeuw, 1998).

Hierarchical models are like regression models but allow parameters to vary (so-called random effect). In the regression model, parameters generally are a fixed value, estimated from the sample (a fixed effect). It matters that data is hierarchically organized in the model as contextual variables in the hierarchy introduce dependency in the data, meaning that residuals will be correlated. This similarity can be a problem because, in general, we assume that cases are independent. However, when a country's indicators are sampled from similar contexts, this independence is unlikely to be true. Thinking about variables and factoring them into the analysis we can overcome the problem of non-independent observations by using the intraclass correlation (ICC). Skipping the formalities of calculating the ICC, it is a concept that in our multilevel example of variables within countries represents the proportion of the total variability in the outcome that is attributable to the countries.

It follows that if a country has had a big effect on the independent variables within it, then the variability within the country will be small. Therefore, variability in the outcome within countries is minimized, and variability in the outcome between countries is maximized; therefore, the ICC is large. Conversely, if the country has little effect on the independent variables then the outcome will vary a lot within countries, which will make differences between countries relatively small. Therefore, the ICC is small to. Thus, the ICC tells us that variability within levels of a contextual variable (in this case the country to which an independent variable belongs) is small, but between levels of a contextual variable (comparing countries) is large. As such the ICC is a good gauge of whether a contextual variable influences the outcome.

With seven time points (from the year 2010 to 2016) we consider the linear effect (time) and run a new table of estimates of fixed effects which gives us the regression coefficients and their confidence intervals. The direction of regression coefficients describes the relationship between each predictor and whether the outcome is positive or negative. The first analysis is based on the relationship between educational attainment (one of the potential benefits of improved social mobility) and the Gini coefficient. Gini coefficent of 0 means absolute equality within society, versus Gini coefficent of 1 – where one resident earned all the income, while everyone else earned nothing.

Linear mixed models' analysis was run in SPSS to estimate fixed effects between dependent variable – Gini coefficient – and selected four key indicators representing independent variables. Summing up the logic behind the model, estimates of means are showing relationship across countries, while centred estimates show the effects of independent variable within the country. It shows a strong positive correlation for early leavers from education and training (early leavers mean) (Table 1). Meaning, countries with high levels of early leavers from education and training have high levels of inequality; therefore policies should focus on lowering early education drop-offs which would lead to low Gini index and higher equality of a country. With no significant effects of early leavers from education and training within the country (centred), we can assume that countries with higher early leavers from education and training rates have higher Gini coefficient, however, changes in early leavers from education and training rates are not influencing social quality in a significant manner. On the other hand, early childhood education and care (mean) and employment rate of recent graduates by educational attainment (mean) have a negative semi-strong influence on Gini coefficient, namely high ratios of these two variables are lowering Gini coefficient and therefore socially inequality across countries.

Different results would be expected for tertiary educational attainment (centred), as more educated society should result in more equal society, therefore lowering the Gini coefficient within the country. Same it goes for employment rate of recent graduates by educational attainment (centred), where higher employment rates would logically lead to lower Gini coefficient and more mobility within the country. Tertiary education has always been perceived

as a tool for lowering social inequality; however, with these results, we should ask whether higher education actually reinforce inequality. To obtain an education was a means of acquiring a good job and higher living standard, however, these pathways are losing their importance at least for those who are not in the upper class of the society. While countries with high investments in public education such as Finland, Norway, the Netherlands, and Sweden are across those with highest levels of income equality, the UK is among western world counties with the worst level of income equality. With high tuition fees, higher education is failing those who need it and would benefit the most from it, namely lower socio-economic groups. Unfortunately, this group is also the least likely to enrol in higher education. Apparently, in some countries, universities are becoming the domain of the privileged (e.g., the UK).

However, it should be emphasized that employed, limited dataset may play a crucial role in the obtained results and hence represents an objective limitation of performed empirical investigation (and of obtained results that might be very different if one employs different datasets). Secondly, as already stated the notoriuous problem of omitted variables can occur due to misspecification of a multilevel linear regression model as a result of data scarceness. Due to data that is not available some variables are omitted from the regression, which results in whether upward (over-estimating) or downward (under-estimating) effect on explanatory variables.

Table 1: SPSS Outcome of Mixed Model Analysis for Gini Coefficient as dependant variable, Estimates of Fixed Effects

Parameter	Estimate	Std. Error	df	t	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Intercept	70.918703	19.729749	8.847	3.595	.006	26.169228	115.668179
ELET mean	.622385	.050307	8.882	12.372	.000	.508350	.736420
TEA mean	.051460	.056880	8.919	.905	.389	-.077390	.180310
ECET mean	-.362061	.230576	8.926	-1.570	.151	-.884317	.160195
ER mean	-.346063	.196354	8.792	-1.762	.113	-.791851	.099724
ELET centred	.007652	.058653	12.324	.130	.898	-.119771	.135076
TEA centred	.128633	.074147	6.945	1.735	.127	-.046981	.304248
ECET. centred	.009425	.013560	6.319	.695	.512	-.023352	.042203
ER centred	.014388	.007782	42.966	1.849	.071	-.001306	.030082

a. Dependent Variable: Y (Gini coefficient).

Source: Own work.

The second analysis is complementary to this approach, focusing directly on income inequalities and how benefits that should arise from improving social mobility could improve equality of the country. In baseline specification, it is assumed that there exists – as it follows from "The Great Gatsby Curve" example – an inverse relationship between income inequality and intergenerational mobility. Assuming that high-income inequality in most cases means low

social mobility, analysis of four factors of education and their influence on income inequality was conducted.

Table 2: SPSS Outcome of Mixed Model Analysis for Income Inequality as dependant variable, Estimates of Fixed Effects

Parameter	Estimate	Std. Error	df	t	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Intercept	10.346974	7.980005	8.873	1.297	.227	-7.744450	28.438398
ELET mean	.196740	.020769	8.716	9.473	.000	.149523	.243957
TEA mean	-.019203	.022661	8.170	-.847	.421	-.071271	.032864
ECET mean	-.090229	.094350	8.889	-.956	.364	-.304069	.123610
ER mean	.024331	.077369	8.002	.314	.761	-.154075	.202737
ELET centred	-.040646	.027816	3.819	-1.461	.221	-.119338	.038047
TEA centred	.022674	.022573	10.309	1.005	.338	-.027417	.072766
ECET. centred	.001434	.004425	49.460	.324	.747	-.007457	.010325
ER centred	.002928	.003180	43.206	.921	.362	-.003485	.009341

a. Dependent Variable: Y (Income Inequality).

Source: Own work.

A strong positive correlation is shown for early leavers from education and training (early leavers mean) and income inequality. This result confirms our previous analysis conclusion that countries with high levels of early leavers from education and training have high levels of inequality, in this case, income inequality (Table 2). Moreover, early childhood education and care (mean) shows a negative semi-strong correlation to income inequality (we consider this result regardless significance level at 0.354), therefore focus on exclusive, and quality early childhood education and care could lower income inequalities across countries and hence socially inequality.

Compared to within the country effects, early leavers from education and training (centred) are negatively related to income inequality. Effects of tertiary education attainment on income inequality within the country are showing the opposite relation of what would be expected, meaning higher the tertiary education attainment of the population higher the income inequality. Once again results showed an unexpected trend of higher tertiary education attainment related to higher income inequality. However, a caveat should be stated. Namely, indentified trend could be also the result of a scarce and limited dataset and/or due to the omitted variable bias problem, endogeneity problem or due the the reversed causality problem.

5 DISCUSSION OF THE RESULTS, NORMATIVE POLICY IMPLICATIONS AND SUGGESTIONS

In the developed countries social and economic inequality is rising while participation in higher education is at a historic high. Could it be that higher education foster unequal earnings (even if one considers the previously stated limitations of empiricial investigation)? If education is the main source of human capital, then the quantity and quality of higher education are reinforcing growing income inequality through wages. In recent years, social mobility has been in fact decreasing while higher education has been expanding.

The first concern is related to the increasing differences between those who can afford to invest in education and those who are lagging behind without education. Students from the low socio-economic background, who are underrepresented in higher education, compared to peers from socially advantaged backgrounds, are also those who gain the most benefits from it, and even more when higher education is obtained at an elite university. Contrarily, well off students, who participate in higher education at the highest rates, depend the least on it for access to social status, income, and professional work. Second shortage of higher education is that it cannot expand the number of high-value positions in society and therefore provide mobility across the middle and upper classes of society. Without the expansion of opportunities, the competition to enter higher education is more intense than ever, as the middle class competes for the position of their children in elite higher education institutions.

It should be taken into consideration that the employed data set does not specify different forms of tertiary education, for example, social studies and science studies. One explanation of our results could go in line with the German educational system, suggesting that not everybody should obtain tertiary education. Tertiary education has always been perceived as a tool for lowering social inequality; however, we should ask whether higher education might in some specific circumstances actually reinforce inequality. Some portion of the population should be educated in vocational programmes, as this kind of professions importantly contribute to the value created in the economy and therefore boost the GDP of the country. Moreover, there is a potential for further research on how differences in societies – manufacturing oriented or service oriented – result in different levels of inequality among society. It would be interesting to run a similar analysis for the US and compare results to the EU.

The historical perspective suggests that the unemployment rate is a good measure of how good economy is doing in a certain period. However, in the last decade, low unemployment rate, that occured due to the rise in the number of part-time employment, might not be the best indicator due to falling labour participation. The decline in labour market participation after the 2008 crisis, means that unemployment and employment rates are telling two very different stories. Therefore, we should not focus too much on (un)employment rates and take a look at what is happening with wages. Lately, we observe a huge gap between wages that are defined by productivity, measured by the contribution to the process of production and wages or better said

– profits – that are generated based on rent-seeking market behaviour. After the industrial revolution, entering the new age, our economy has changed the way in how we can generate marginal profits, especially when the focus is on services, rather than manufacturing. Creating value, which is not supported by innovations and useful products, leads to an economy where value might be made without the contribution of anything of value from those who benefit. In fact, we live in a system where money might make money, without any added value.

This rent-seeking behaviour is supported by the economic system where the real money is substituted by borrowed money, like student loans, mortgages or consumers debt. Economic rents, defined as "unearned income" or "above market returns", refer to generated money that is not supported by creating value or without taking risks that would match the rewards. This concept of rent-seeking was mentioned by Adam Smith in the Wealth of Nations, where landlords were recognized as rentiers. Contrary to the capitalist, who invested at a certain level of risk and therefore were eligible to reward, and workers who contributed their time, rentiers made money without any real contribution to the production process.

A recent discussion on income inequality highlights rents as one of the main causes of it. Gerrit De Geest in his latest book (2018) argues that although marketing is meant to improve markets, marketers might be causing and exploiting market distortions by making prices less transparent, splitting informed and uninformed consumers, making products incomparable, locking in consumers, exploiting psychological biases, creating network externality effects, or preventing price wars. "Few markets have not been turned into less competitive ones by marketers, trained at modern business schools," De Geest pointed out. "This has significantly increased the amount of artificial profits (or 'rents') in the economy." De Geest (2018) also suggests that via marketing business might convince consumers to pay way more for products and services, which is revealing a new theory of what is provoking market disorders and the reason behind huge differences in earnings. The real source of income differences might be according to De Geest (2018) rents rather than productivity differences; therefore the obvious solution is reducing rents in the economy (De Geest, 2018). Thus, if one takes De Geest's arguments seriously than policymakers should attack market disorders through the legal system more aggressively. If income inequality really is caused by rents, it is actually caused by distortions (De Geest, 2018). What policymakers should do is to reduce inequalities by removing those distortions through the legal system. This master thesis results somehow, taking into account previously emphasized limitations of performed empirical investigation, supports De Geest's theory that a very specific human capital enables individuals with specific knowledge to extract higher rents or better-said rents that do not reflect the actual value-added, above marginal productivity (De Geest, 2018).

The evidence of the post-war period reveals the limits of higher education to create an egalitarian society. In the English-speaking countries, the biggest concern is how to establish the social compact on taxation, increasing top marginal tax rates, and lifting the taxation of capital to the same level as taxation of income. Democratic social values should be reasserted

and higher education re-strengthened as an alternative to money and inheritance as determinants of social participation, selection, and individual and collective success (Marginson, 2016).

This master thesis had focused on education as the key tool to put everyone on an equal starting point, but unfortunately, through analysis, it became clear that the belief that education alone is ensuring equality of society is rather illusionary. There are several beneficial outcomes for societies with strong educational systems, especially when inclusive and easily accessible; however, focusing only on providing education for everyone would be too trivial. Only a well thought-out policy mix could indeed tackle all the sources of inequality and social immobility. A more thorough analysis of all inequality causes could give the right answer on how to shape regional as well as EU level policies in a way that society would greatly benefit from the motivation that arises from inequality instead of leaving behind talents and prospective youths.

5.1 Initiatives of EU

Raising awareness of the importance of social mobility and diminishing inequalities in the European Union as well as in the world has been a priority of many organizations and institutions introducing different policies to facilitate upward social mobility.

A consensus on the importance of early childhood education and care (hereafter: ECEC) is that there is a positive impact on a person's achievements as well as their capacity to become a successful member of society. Eurofound's publication Early childhood care: Accessibility and quality of services, points out ECEC as the key area where policies could help to reduce disadvantages and limitations of children in early stages of life that are the consequence of their social origin (Eurofound, 2015a).

Differences in the accessibility of quality early childhood education and care are visible among EU member countries, mainly determined by institutional set-up and costs of ECEC (Eurofound, 2015a). Broader policy context at European level is directed towards facilitation of early development and addressing community growing social inequalities. Moreover, ECEC could contribute to improved equality of women on the labour market, create more jobs and achieving social inclusion. The European Commission has highlighted the importance of social investments in both children from disadvantaged backgrounds and highly qualified and motivated workforce in ECEC (Eurofound, 2015b; European Commission, 2011).

One of the European Union's central goals is equal access to quality education, as part of Europe 2020 agenda. The Europe 2020 strategy is the EU's agenda for smart, sustainable and inclusive growth with a focus on education and training. The Education and Training Monitor provides analysis of countries performance and encourages discussions on national education reforms.

The agenda for European cooperation in education and training (ET 2020), a platform for the Member States to share good practices and learn from each other, set six targets for countries to be achieved by 2020 (European Commission, Framework Europe 2020 strategy, 2019):

1. to reduce the early leavers from education and training below 10%,
2. to reach 40% tertiary educational attainment among 30- to 34-year-olds,
3. to reach the 95% participation in early childhood education and care,
4. to reduce the underachievement in reading, math, and science below 15%,
5. to reach the employment rate of recent graduates of 82%,
6. to reach 15% adult participation in learning.

The agenda for European cooperation in education and training (ET 2020) has four key objectives related to lifelong learning and mobility; quality and efficiency of education and training; equity, social cohesion, and active citizenship; and creativity and innovation in education and training. The ET 2020 had defined a set of benchmarks at European level to be achieved by 2020:

1. at least 95% of children should participate in early childhood education;
2. fewer than 15% of 15-year-olds should be under-skilled in reading, mathematics, and science;
3. the rate of early leavers from education and training aged 18–24 should be below 10%;
4. at least 40% of people aged 30–34 should have completed some form of higher education;
5. at least 15% of adults should participate in learning;
6. at least 20% of higher education graduates and 6% of 18–34-year-olds with an initial vocational qualification should have spent some time studying or training abroad;
7. the share of employed graduates (aged 20–34 with at least upper secondary education attainment and having left education 1–3 years ago) should be at least 82%.

Koske and others (2012) report a list of policies in this regard: facilitating the accumulation of human capital, making educational achievement less dependent on personal and social circumstances, reducing labour market dualism and promoting the labour market integration of immigrants and women. Other policies that are capable of reducing inequality and at the same time promoting economic growth are the ones associated with institutional issues. Many are associated with labour market regulations and the structure and size of fiscal and social security systems. All in all, they are policies aiming at reducing the inequality of opportunities while allowing the inequality arising from returns to effort.

Results of the empirical analysis do not provide a clear answer whether education, specifically tertiary education, is the right tool to tackle inequality and boost social mobility. Definitely, a more thorough analysis would be needed to identify how different kind of tertiary education influences social mobility and inequality. Namely, science-oriented education focused on development and innovations, in general, creates economic value that is measured in line with higher marginal productivity. To address the problem of social mobility, a holistic approach

would be needed. Nobel laureate, Jan Tinbergen in 1952 stated: "For each policy objective, at least one policy instrument is needed - there should be at least the same number of instruments as there are targets." [24] As there is multiple sources/causes of inequality (rents), for each of them should be designed its own *ex-ante* regulatory instrument. For further analysis, it would be necessary to identify what are the other market failures and address them with different regulatory tools. It seems a bit naive to think that the market could efficiently regulate itself; therefore, interventions are inevitable. Due to information asymmetries individual with his decisions cannot force the market to be competitive and remove social inequalities caused by rent-seeking behaviour. When observing competitive market, differences in social status and income would be based on differences in marginal productivity and individuals' abilities. To sum up, results of this master thesis implies that inadequate educational models are not the only source of social immobility and highlights the need for regulation of numerous market failures that might or might not be caused by education systems.

CONCLUSION

Inequality has been a key issue discussed in recent political and social debates with a focus on social immobility of society. After the financial crisis in Europe (and also worldwide), a significant portion of economic progress was lost in attempts to achieve higher living standards. Systems of social security were collapsing, and in some countries, they were utterly destroyed. In many member states of the European Union, this has increased inequality and raised concerns about sustainable growth and social cohesion. If income, generated in the country measured as GDP, increases faster than the income of households it means that growth is not all-inclusive and that households do not have access to benefits that growth brings to the country. Although the Europe 2020 strategy is focused on reducing poverty, the challenge is reducing the risk of poverty related to the debate on inequality. The European pillar of social rights, presented by the European Commission in April 2017 determined income inequality more detailed. The third principle of the pillar defines the right to equal opportunities for all. Inequality is a challenge with more dimensions; however, the key concepts are concentrated around outcomes (income and wealth) and unequal opportunities.

Income inequality and opportunities combine measures of opportunities that are assigned at the birth of an individual, decisions made along with individuals' life and a pinch of luck. Although difficult to measure, the main policy goal was to provide equal opportunities for the success of the individual. A consensus on which actions should be taken in order to achieve this goal was focused on economic incentives that are important for the growth and are built on an individual's ability to achieve better results. In general, some degree of inequality can be a stimulus for investments in human capital, mobility, and innovations. However, too much inequality can threaten social justice, social cohesion and a sense of community affiliation. For decades, economists have believed and fostered the theory of "good" and "bad" inequality. The

[24] Tinbergen Jan, "On the Theory of Economic Policy," North-Holland, 1952.

bad inequality is the one caused by social immobility, where entire generations are trapped in rigid social status classes, without any options to move from "lower class" to a higher class with better economic performance. Good inequality, however, is the one that enables the rise in the social scale for individuals who invest in their education, are entrepreneurial and hard working. The latter is very often assigned to American society, so-called the "land of opportunity" where everyone can accomplish "American dreams" and rise from nothing to a millionaire if only one is willing to work hard.

The master thesis aimed to answer the questions on how different policies influence inequality and social mobility. Through literature review and empirical analysis the following questions can be answered:

1. How should an optimal legal regulation of education look like?

Due to the stickiness of socio-economic status at the top as well at the bottom, there is a need for institutional and legislative changes that would make the process of upward mobility achievable to young talents. The main focus of the legislative framework should be on non-discriminatory educational policies (gender and race equality) when everybody has equal opportunities to obtain an education. Efforts towards higher equality are usually costly and include some sort of redistribution; however, lawmakers must decide whether they will prioritize economic efficiency or equality (Kandek, 2017). Moreover, policymakers should follow Tinbergen's theory: "For each policy objective, at least one policy instrument is needed - there should be at least the same number of instruments as there are targets."

2. Do countries with higher taxes (more redistribution) have more inclusive and equitable quality education?

Countries with high investments in public education such as Finland, Norway, the Netherlands, and Sweden are across those with best education systems regarding inclusiveness, quality, and equity in education. Intergenerational social mobility was found higher in the US in comparison to Italy where redistributive policies are more extensive than in the US. Same results were found comparing Sweden and the US.

The relationship between taxes and quality of education goes through the portion of public investments in education. High taxes, therefore, does not necessarily mean inclusive, quality and equitable education, but gives a potential for policymakers to allocate a bigger portion of budget towards equal opportunities in education. Advantages of investing in equity in education, in most cases, offset the costs for both individuals and societies and this is the reason to ensure both equity and quality of education systems.

Numerus studies have tried to measure social mobility and determine how inequality might affect intergenerational mobility via the demand for redistribution, concluding that upward mobility significantly affects attitudes towards redistribution.

3. Do countries with more inclusive and equitable quality education have higher social mobility?

As it was recognized by Chetty (2014), several factors predict differences in social mobility. One of the factors that strongly predicts differences in mobility is the quality of public schools, meaning kids from low-income families tend to do better in areas where public schools are better.

Social and economic inequalities could be restored through an equitable – inclusive and fair – educational system allowing individuals to take full advantage of education regardless of their background. Unfortunately, across OECD countries student's background still has a significant impact on academic achievement, as students with low educated parents and low socio-economic status have a higher chance for low performance in school. Fairness and inclusion are often overlapping, as low socio-economic background and low performance are common for specific groups – disadvantaged students. Best performing OECD countries in education systems are those with quality and equitable schooling systems, where the majority of individuals can achieve top-level skills, knowledge and therefore use these abilities to improve their socio-economic status.

4. What kind of policy mix of both legal rules and taxes do countries with high social mobility have?

Traditionally law and economics argue that the tax system, and not the legal system, should be used exclusively to redistribute income. The double-distortion argument identified by Kaplow and Shawell (1994) argues that the redistributive legal rules supposedly only add to the distortions already created by the tax system. However, several law and economics scholars that challenge Kaplow and Shavell's decisive argument advocate formation of the equity-distributive-informed legal rules.

Countries that are among the most successful when it comes to high achievement in education and equity of students are the Netherlands, Denmark, Sweden, and Finland. All of the listed countries have, regardless of the budget cuts on education investments, one of the highest expenditures on primary to tertiary education among OECD countries. Denmark is among the few countries that are funding tertiary education entirely through central government investments. In addition, Sweden primary, secondary and post-secondary non-tertiary education is fully funded by public sources.

The pattern that is common to all these countries is relatively high-income tax (above 50%) and notably high public investments in the education. As it was stated before, the right mix of legal rules and taxations should go hand in hand with taxes being translated into investments to education. Through legislation, countries can enforce the involvement of the population in the education system, equitability, and quality. However, this can only be implemented with sufficient budget intended for education. Quality education is the foundation for fairer, more inclusive and more innovative society. Education systems play a key role in lowering social and economic disparities. With investments in education, we can build fairer societies by providing quality education for all regardless of their background and giving all equally good chances to lead successful lives.

5. Do individuals who get a quality public high education and have low-income background achieve higher income levels than their parents?

One's opportunities for success are strongly linked to the quality of education. Not only with knowledge, skills and socio-emotional competencies required for children's development, but also with contributions to the economy and society during their adulthood. These skills and experiences many times cannot be obtained at home, particularly when children are from the disadvantaged environment (Heckman, Lochner & Todd, 2008). However, there are still considerable inequalities in educational outcomes among OECD countries, despite efforts by governments to provide high-quality education, many students still do not reach a minimum level of education.

Corac (2006) and d'Addio (2007) using the intergenerational income elasticity as a measure have found significant evidence on the persistence of low social mobility in the US in comparison to Nordic European countries and Canada. In the latest, social mobility is relatively high, meaning that parents' income and social status have little or no impact on children's future achievements. When parents' inputs are low, the state intervention could compensate for it, by investing in the early stages of a child's life – especially in education. These interventions could have an important impact on decisions on whether to continue with high education (full -time) and furthermore, would impact social mobility through education (Jackson, 2007).

Answering all these questions it is clear that this story of inequality and social mobility is based on the wrong assumption of equal opportunities. That everyone comes from a similar environment, that racial characteristics are not important and that everyone has equal opportunities to access health care and school services. Some dozen individuals who are supposedly extremely talented or have had a brilliant business idea and have succeeded, should not diminish the fact that there are million people who cannot escape the poverty due to unequal opportunities. Does this mean that opportunities are in its fundamentals just and equally capable individuals from poor and wealthy families will be rewarded with the same income and social status? A number of studies shown strong evidence on wealthier families giving an initial

advantage to individuals. For example, children from rich families have better learning conditions, more organized leisure activities, etc. especially in countries where education is related to high tuition fees. It is even worse for those living in countries without social protection. Education is seen as a key factor in ensuring equal conditions for all (as key component of human capital, which has a decisive influence on level of income and productivity) and many countries maintain free education or scholarship system to ensure fairer society (besides range on other policies ensuring equal opportunities, such as taxes).

On the one hand, we have witnessed growing economic and social inequality and on the other a higher education system where access is socially unequal overall. Is it educational inequality causal in itself, or is it just a reflection of general inequality within the society? Undoubtedly all these structures and processes are interactive and in some sense mutually constitutive. Clearly higher education plays an insignificant role in the position of the super-rich; moreover, inequality is not driven by higher education at that level. However, the higher education sector might be in some instances widening the gap between the upper class and the middle class. Higher education can contribute the most to social mobility by increasing opportunities for upward mobility. Focusing on upper middle class family supremacy of elite universities, which limits that prospect, is a key area for reform efforts. Society structure is affected by the capacity distribution and value created by high-quality educational places. What governs access to elite institutions, should not be determined by financial barriers. Therefore, higher education should still be publicly provided and should support neutralization of social and economic inequality.

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APPENDICES

Appendix 1: Abstract in Slovene language

Hitre ekonomske spremembe, ki jih spremlja globalizacija trga in tehnološke inovacije, imajo močan vpliv na dohodke in s tem povečano neenakost družbe. Zdi se, da je neenakost tako globoko zasidrana v socialne in ekonomske strukture družbe, da je nejasno kakšne spremembe so potrebne na nivoju institucij, politike in gospodarskih subjektov, za boj proti povečevanju socialne in ekonomske neenakosti družbe. Tradicionalna pravna in ekonomska teorija sta soočeni z vprašanji, kako se boriti proti povečani dohodkovni in premoženjski neenakosti, ali bi se morali proti neenakosti boriti s pravno regulativo oziroma ali bi morali neenakost krotiti le s pomočjo davčnih instrumentov.

Socialna mobilnost je opredeljena kot sposobnost premikanja po družbeni lestvici navzgor ali navzdol glede na izobrazbo, poklic ali druge družbene spremenljivke (Heckman & Mosso, 2014). Dejavniki, ki vplivajo na socialno mobilnost poleg spola, izobrazbe in poklica, so industrializacija, urbanizacija, promet in komunikacija (Grusky & Hauser, 1984; Erikson & Goldthorpe, 1992). Socialna mobilnost se nanašna na spremembo socialnega statusa posameznika znotraj družbe, bodisi znotraj življenjskega obdobja, bodisi med generacijami (Sorensen, 1975).

Trendi s področja socialne neenakosti kažejo, da ima družina, bolj natančno socialno-ekonomski status staršev, najmočnejši vliv na posameznikov socialno-ekonomski status tudi kasneje v življenju. Vloga institucionalnih politik bi zato morala biti oblikovana na način, da posameznik preko izobrazbe, ki je dostopna vsem članom družbe, ne glede na njihove sposobnosti, dobi priložnost napredka po statusni lestvici neglede na okolje iz katerega prihaja. Pozornost usmerjena v socialne investicije s poudarkom na kvalitetni predšolski in osnovnošolski izobrazbi, bi rezultirala v večji enakosti možnosti posameznika, da napreduje po statusni lestvici.

Vpliv revščine in neenakosti na stabilnost družbe ne moreta biti spregledani. V zadnjih tridesetih letih se je razlika med bogatimi in revnimi še povečala. Velike razlike znotraj družbe pa ustvarjajo idealno okolje za populizem, ekstremizem, trgovinski protekcionizem, sindikate in še mnoge druge ukrepe, ki slabijo konkurenčnost trgov. Z drugimi besedami, prevelika družbena neenakost upočasnjuje ekonomsko rast, načenja temelje socialne strukture in negativno vpliva na socialno mobilnost.

Cilj magistrske naloge je preučiti faktorje, ki vplivajo na socialno mobilnost in so lahko regulirani s strani zakonodajalcev, s poudarkom na terciarni izobrazbi kot glavnim orodjem za odpravo neenakosti. Magistrska naloga stremi k iskanju odgovorov na naslednja vprašanja:

1. Kakšna je optimalna pravna ureditev na področju izobraževanja?
2. Ali imajo države z višjimi davki bolj vključujoče, pravično in kakovostno izobraževanje?

3. Ali imajo države z bolj vključujočo, pravično in kakovostno izobrazbo večjo socialno mobilnost?
4. Kakšno kombinacijo politik, tako pravnih kot davčnih, imajo države z visoko socialno mobilnostjo?
5. Ali posamezniki, ki so deležni kakovostne izobrazbe in izhajajo iz neprivilegiranega okolja, presežejo socialno-ekonomski status svojih staršev?

Potrebno se je zavedati, da ex-ante mehanizem, v našem primeru zagotavljanje kakovostne visoke izobrazbe, ni edini možni regulativni instrument za reševanje dohodkovne neenakosti. Oblikovalci politik bi morali za uspešen boj proti neenakosti identificirati različne vire neenakosti in za vsakega izmed njih uporabiti specifičen, ex-ante ali ex-post (ali kombinacijo obeh), instrument (Tinbergen,1952).

Model, ki je uporabljen v magistrski nalogi vključuje devet (od skupno 27) držav članic Evropske Unije (v nadaljevanju: EU), Dansko, Španijo, Italijo, Nizozemsko, Portugalsko, Slovenijo, Finsko, Švedsko in Združeno Kraljestvo v obdobju sedmih let (od 2010 do 2016). Za zagotavljanje raznolikosti so v model vključene države z različnimi politikami s področja javnega šolstva: 1) države z visokimi javnimi naložbami v visoko šolstvo (npr. Nizozemska), 2) države z visokimi zasebnimi naložbami v visokošolsko izobraževanje (npr. Združeno Kraljestvo) in 3) države z zmernimi javnimi in zasebnimi naložbami v visoko šolstvo (npr. Španija). Za namene analize se socialna mobilnost meri v smislu enakih možnosti v družbi, ki jo opredeljuje Ginijev koeficient. Spremenljivke, ki vplivajo na socialno mobilnost, se osredotočajo na štiri ključne kazalnike, ki so odvisni od dostopnosti in kakovosti izobraževanj, a) zgodnje opuščanje izobraževanja in usposabljanja, b) udeležba v terciarni izobrazbi, c) predšolska vzgoja in varstvo in d) stopnja zaposlenosti nedavnih diplomantov glede na izobrazbo.

Druga analiza dopolnjuje ta pristop in se osredotoča neposredno na dohodkovno neenakost in kako bi lahko koristi z naslova izboljšane socialne mobilnosti, izboljšale družbeno enakost. V osnovni specifikaciji se domneva, da obstaja – kot izhaja iz primera Great Gatsby krivulje – obratno razmerje med dohodkovno neenakostjo in socialno mobilnostjo. Ob predpostavki , da visoka dohodkovna neenakost v večini primerov pomeni nizko socialno mobilnost, je bila opravljena analiza dejavnikov izobraževanja (a) zgodnje opuščanje izobraževanja in usposabljanja, b) udeležba v terciarni izobrazbi, c) predšolska vzgoja in varstvo in d) stopnja zaposlenosti nedavnih diplomantov glede na izobrazbo) in njihov vpliv na dohodkovno neenakost.

Rezultati empirične analize ne dajejo jasnega odgovora, ali je izobraževanje, zlasti terciarno izobraževanje, pravo orodje za odpravljanje neenakosti in spodbujanje socialne mobilnosti. Potrebna podrobnejša analiza, ki bi terciarno izobraževanje razdelila na naravoslovno, ki je usmerjena inovacije in razvoj, s čimer doprinaša ekonomsko vrednost družbi in se meri z višino mejne produktivnosti, ter družboslovno usmerjeno izobrazbo. Slednjo je kot možen vzrok za razmah med bogatimi in revnimi v svojo zadnji knjigi (2018) omenil prof. De Geest, ki opozarja

na kurikulume poslovnih šol in povezavo neenakosti s storitveno usmerjenimi družbami, kjer je mejno produktivnost težje oceniti, ker lahko rezultira v visokih (neupravičenih) maržah na trgu. Analiza magistrske naloge se je osredotočila na izobraževanje kot ključno orodje, s katerim bi vsakogar postavili na enako izhodiščno točko, vendar so rezultati analize pokazali, da je takšno prepričanje iluzorno. Družbe z močnimi izobraževalnimi sistemi, zlasti ko so ti lahko dostopni in vključujoči, beležijo pozitivne socialno-ekonomske učinke, vendar pa bi bila osredotočenost le na izboljšanje dostopnosti izobrazbe nezadostna v boju proti neenakosti. Samo dobro premišljana kombinacija različnih politik bi se lahko uspešno spopadla z vsemi viri neenakosti in socialno imobilnostjo. Podrobnejša analiza vseh vzrokov neenakosti bi lahko dala pravi odgovor o tem, kako oblikovati regionalne in nacionalne politike ter politike na ravni Evropske unije, tako da bi družbo moderirana neenakost motivirala za napredek in razvoj, namesto da je ovira za mlade in talentirane posameznike.

Problem neenakosti v družbi je ena izmed osrednjih tem političnih in ekonomskih diskusij. Po finančni krizi 2008 v Evropi se je izgubil velik del gospodarskega napredka pri poskusih doseganja višjega življenjskega standarda prebivalstva. Sistemi socialne varnosti so se zrušili, v nekaterih državah pa so popolnoma uničeni. V številnih državah članicah Evropske unije je to povečalo neenakost, kar vzbuja zaskrbljenost za prihodnost evropske socialne kohezije. Čeprav je strategija Evropa 2020 osredotočena na zmanjšanje revščine, je le-to tesno povezano z razpravo o neenakosti. Evropski steber socialnih pravic, ki ga je Evropska komisija prestavila aprila 2017, podrobneje opredeljuje dohodkovno neenakost. Tretje načelo stebra opredeljuje pravico do enakih možnosti za vse. Neenakost je izziv z več dimenzijami, vendar so ključni koncepti osredotočeni na rezultate (dohodek in premoženje) in neenake možnosti.

Namen magistrske naloge je odgovoriti na vprašanja, kako različne politike vplivajo na neenakost in socialno mobilnost. Na podlagi pregleda literature in empirične analize lahko odgovorimo na naslednja vprašanja:

1. Kakšna je optimalna pravna ureditev na področju izobraževanja?

Zaradi socialno-ekonomske nemobilnosti tako na vrhu, kot na dnu družbene lestvice, obstaja potreba po institucionalnih in zakonodajnih spremembah, ki bi omogočile mladim talentom, da se lažje prebijejo navzgor po družbeni lestvici. Osredotočenje zakonodajnega okvira na nediskriminatorne izobraževalne politike (npr. enakost med spoloma in raso), bi povečalo enake možnosti za pridobitev izobrazbe. Prizadevanja za večjo enakost so običajno draga in predstavljajo potrebo po prerazporeditvi sredstev (npr. z davki), vendar pa se morajo zakonodajalci odločiti, ali bodo prednostno obravnavali gospodarsko učinkovitost ali enakost (Kandek, 2017).

2. Ali imajo države z višjimi davki bolj vključujoče, pravično in kakovostno izobraževanje?

Države, ki beležijo visoke investicije v javno izobraževanje, na primer, Finska, Danska, Nizozemska in Švedska, so med tistimi, ki imajo najboljše izobraževalne sisteme glede na

vključenost, kakovost in pravičnost v izobraževanju. Razmerje med davki in kakovostjo izobraževanje je povezano z deležem javnih naložb v izobraževanje. Visoki davki torej ne pomenijo nujno vključujoče, kakovostne in pravične izobrazbe, temveč dajejo oblikovalcem politik možnost, da večji del proračuna namenijo enakim možnostim v izobraževanju.

3. Ali imajo države z bolj vključujočo, pravično in kakovostno izobrazbo večjo socialno mobilnost?

Kot je v nedavni raziskavi prepoznal prof. Chetty (2014) obstaja več dejavnikov, ki napovedujejo razlike v socialni mobilnosti med različnimi družbami. Eden od dejavnikov, ki močno napoveduje razlike v mobilnosti, je kakovost javnih šol, kar pomeni, da otroci iz družin z nizkimi dohodki lažje napredujejo v družbi, kjer so javne šole kakovostne. Socialne in ekonomske razlike bi bilo možno zmanjšati s pomočjo pravičnega in vključujočega izobraževalnega sistema, ki bi posameznikom omogočil , da v celoti izkoristijo pozitivne učinke izobraževanja ne glede na njihovo ozadje. Na žalost posameznikovo ozadje v državah OECD še vedno pomembno vpliva na šolske dosežke, daj imajo posamezniki z manj izobraženimi starši in nizkim socialno-ekonomskim statusom manj možnosti za uspeh znotraj izobraževalnega sistema. Najboljše rezultate s področja izobraževanja dosegajo države, kjer lahko večina posameznikov pridobi spretnosti in znanja ne glede na socialno-ekonomski status njihovih staršev in jih potem uporabi za izboljšanje lastnega družbenega statusa.

4. Kakšno kombinacijo politik, tako pravnih kot davčnih, imajo države z visoko socialno mobilnostjo?

Tradicionalna ekonomska in pravna teorija zagovarjata davčni sistem, kot edino orodje, ki bi moralo biti uporabljeno za prerazporeditev dohodka. Argument, ki sta ga navedla Kaplow in Shawell (1994) pravi, da pravna pravila o redistribuciji domnevno še dodatno povzročajo tržne nepravilnosti. Vendar pa številni pravni in ekonomski strokovnjaki temu nasprotujejo in zagovarjajo oblikovanje pravnih pravil za reševanje problema neenakosti. Države, ki sodijo med bolj uspešne pri doseganju dobrih rezultatov v izobraževanju so Nizozemska, Danska, Švedska in Finska. Vse naštete države so, ne glede na zmanjšanje proračunskih sredstev ohranile visok delež naložb v izobraževanje in so beležijo najvišje izdatkov za osnovnošolsko in terciarno izobraževanje znotraj držav OECD. Danska je med redkimi državami, ki financira terciarno izobraževanje v celoti in sicer preko naložb centralne vlade. Poleg tega se Švedsko (in Norveško) primarno, sekundarno in višješolsko ne-terciarno izobraževanje v celoti financira iz javnih virov.

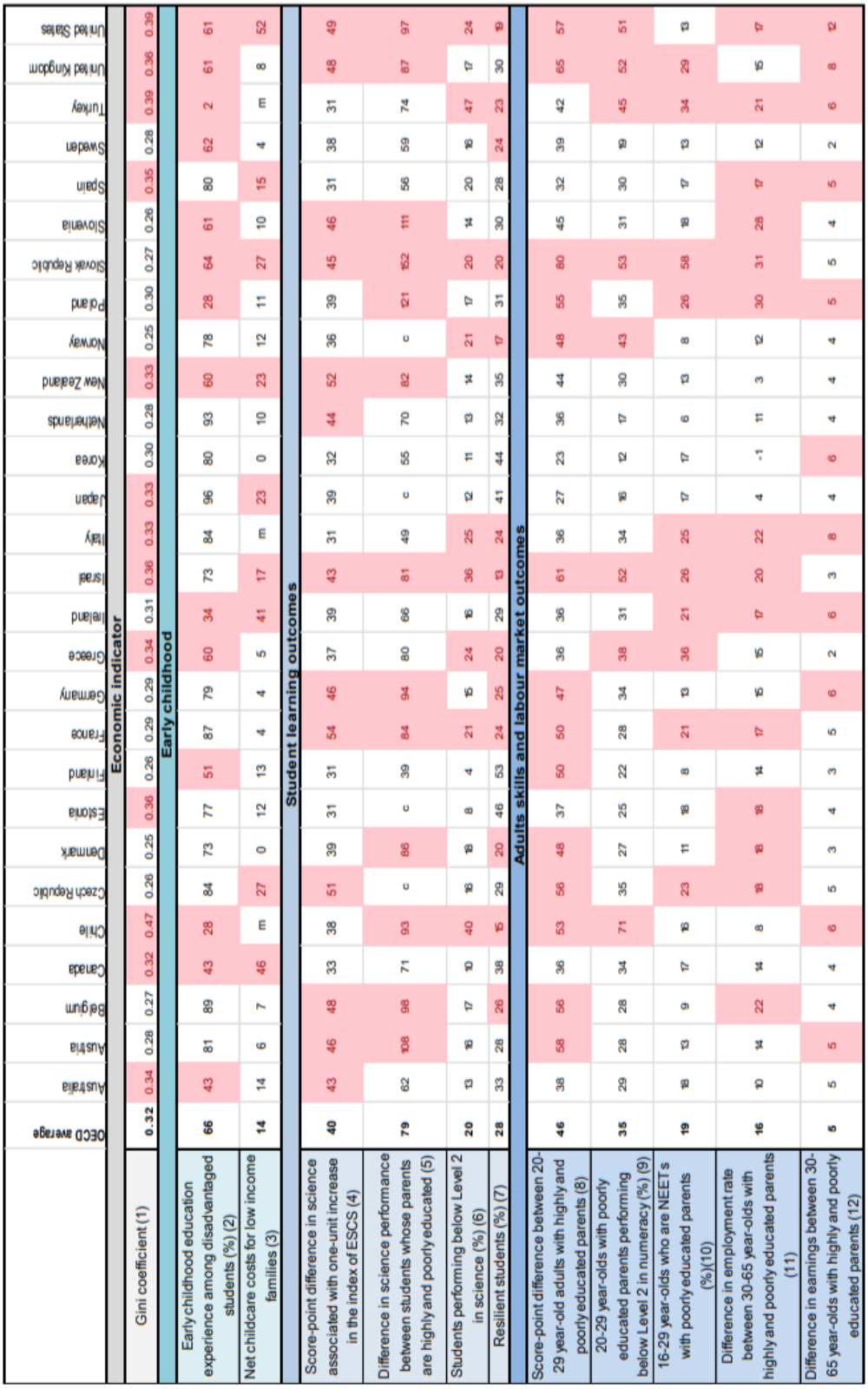
Vzorec, ki je skupen vsem tem državam, je relativno visok davek na dohodek (nad 50%) in visoke javne naložbe v izobraževanje. Z zakonodajo lahko države uveljavljajo vključenost prebivalstva v izobraževalni sistem, pravičnost in kakovost. Vendar pa je to mogoče izvesti le z zadostnim proračunom, namenjenim za izobraževanje. Kakovostno izobraževanje je temelj za pravičnejšo, bolj vključujočo in bolj inovativno družbo, saj imajo izobraževalni sistemi ključno vlogo pri zmanjševanju socialnih in ekonomskih razlik.

5. Ali posamezniki, ki so deležni kakovostne izobrazbe in izhajajo iz neprivilegiranega okolja, presežejo socialno-ekonomski status svojih staršev?

Možnosti za napredovanje po družbeni lestvici so tesno povezane s kakovostjo izobraževanja. Ne le z znanjem, veščinami in socialno-čustvenimi kompetencami, potrebnimi za razvoj otrok, ampak tudi s prispevki h gospodarstvu in družbi. Te spretnosti in izkušnje pogosto ni mogoče razviti doma, zlasti če otroci prihajajo iz neprivilegiranega okolja (Heckman, Lochner & Todd, 2008). Vendar pa še vedno obstajajo precejšnje razlike v izobraževalnih rezultatih med državami OECD, saj kljub prizadevanjem vlad za zagotavljanje visokokakovostnega izobraževanja, številni študenti še vedno ne dosežejo minimalne stopnje izobrazbe. Ko so vložki staršev nizki, lahko država preko vlaganja v zgodnje faze otrokovega življenja, te razlike pomembno zmanjša. Tovrstne intervencije pa pomembno vplivajo na posameznikove odločitve o nadaljevanju visokošolskega izobraževanja in s tem na socialno mobilnost (Jackson in drugi, 2007).

Odgovori na postavljena vprašanja kažejo, da zgodba o neenakosti in socialni mobilnosti temelji na napačni predpostavki enakih možnosti. Na predpostavki da vsi prihajajo iz podobnega okolja, da je družba rasno in spolno nediskriminatorna in da imajo vsi enake možnosti dostopa do zdravstvenega varstva in šolskih storitev. Peščica posameznikov, ki naj bi bili izjemno nadarjeni ali so imeli sijajno poslovno idejo s katero jim je uspelo, ne bi smeli zasenčiti dejstva, da obstajajo milijoni ljudi, ki se zaradi neenakih možnosti ne morejo izogniti revščini. Ali to pomeni, da so priložnosti znotraj družbe pravične in da so enako sposobni posamezniki iz revnih in premožnih družin nagrajeni z enakim dohodkom in socialnim statusom? Zlasti v državah, kjer je izobraževanje povezano z visokimi šolninami, le-to ne zagotavlja enakih pogojev za vse (izobraževanje kot ključni element človeškega kapitala, ki ima odločilen vpliv na raven dohodka in produktivnosti). Številne države se zato odločajo za brezplačen sistem izobraževanja ali štipendij, da bi zagotovile pravičnejšo družbo. Izobraževanje bi moralo postati javna dobrina, s katero bi nevtralizirali družbeno in ekonomsko neenakost, ne da je orodje, s katerim se neenakost še povečuje.

Appendix 2: Unequal outcomes tend to accumulate across the life course



		OECD average	Australia	Austria	Belgium	Canada	Chile	Czech Republic	Denmark	Estonia	Finland	France	Germany	Greece	Ireland	Israel	Italy	Japan	Korea	Netherlands	New Zealand	Norway	Poland	Slovak Republic	Slovenia	Spain	Sweden	Turkey	United Kingdom	United States
Economic indicator	Gini coefficient (1)	0.32	0.34	0.28	0.27	0.32	0.47	0.26	0.25	0.36	0.26	0.29	0.29	0.34	0.31	0.36	0.33	0.33	0.30	0.28	0.33	0.25	0.30	0.27	0.26	0.35	0.28	0.39	0.36	0.39
Early childhood	Early childhood education experience among disadvantaged students (%) (2)	66	43	81	89	43	28	84	73	77	51	87	79	60	34	73	84	96	80	93	60	78	28	64	61	80	62	2	61	61
	Net childcare costs for low income families (3)	14	14	6	7	46	m	27	0	12	13	4	4	5	41	17	m	23	0	10	23	12	11	27	10	15	4	m	8	52
Student learning outcomes	Score-point difference in science associated with one-unit increase in the index of ESCS (4)	40	43	46	48	33	38	51	39	31	31	54	46	37	39	43	31	39	32	44	52	36	39	45	46	31	38	31	48	49
	Difference in science performance between students whose parents are highly and poorly educated (5)	79	62	108	98	71	93	c	86	c	39	84	94	80	66	81	49	c	55	70	82	c	121	152	111	56	59	74	87	97
	Students performing below Level 2 in science (%) (6)	20	13	16	17	10	40	16	18	8	4	21	15	24	16	36	25	12	11	13	14	21	17	20	14	20	16	47	17	24
	Resilient students (%) (7)	28	33	28	26	38	15	29	20	46	53	24	25	20	29	13	24	41	44	32	35	17	31	20	30	28	24	23	30	19
Adults skills and labour market outcomes	Score-point difference between 20-29 year-old adults with highly and poorly educated parents (8)	46	38	58	56	36	53	56	48	37	50	50	47	36	36	61	36	27	23	36	44	48	55	80	45	32	39	42	65	57
	20-29 year-olds with poorly educated parents performing below Level 2 in numeracy (%) (9)	35	29	28	28	34	71	35	27	25	22	28	34	38	31	52	34	18	12	17	30	43	35	53	31	30	19	45	52	51
	16-29 year-olds who are NEETs with poorly-educated parents (%)(10)	19	18	13	9	17	16	23	11	18	8	21	13	36	21	26	25	17	17	6	13	8	26	58	18	17	13	34	29	13
	Difference in employment rate between 30-65 year-olds with highly and poorly educated parents (11)	16	10	14	22	14	8	18	18	18	14	17	15	15	17	20	22	4	-1	11	3	12	30	31	28	17	12	21	15	17
	Difference in earnings between 30-65 year-olds with highly and poorly educated parents (12)	5	5	5	4	4	6	5	3	4	3	5	6	2	6	3	8	4	6	4	4	4	5	5	4	5	2	6	8	12

Source: OECD, 2017.

Appendix 3: SPSS Outcome of Mixed Model Analysis for Gini Coefficient as dependant variable

```
MIXED ginicoef WITH earlyleavers_mean tertiaryedu_mean earlyeducation_mean
employementrate_mean
    EarlyLeavers_c Tertiaryedu_c EarlyEducation_c Employmentrate_c
  /CRITERIA=CIN(95) MXITER(100) MXSTEP(10) SCORING(1)
SINGULAR(0.000000000001) HCONVERGE(0,
    ABSOLUTE) LCONVERGE(0, ABSOLUTE) PCONVERGE(0.000001, ABSOLUTE)
  /FIXED=earlyleavers_mean tertiaryedu_mean earlyeducation_mean employementrate_mean
EarlyLeavers_c
    Tertiaryedu_c EarlyEducation_c Employmentrate_c | SSTYPE(3)
  /METHOD=ML
  /PRINT=SOLUTION TESTCOV
  /RANDOM=INTERCEPT earlyleavers_mean tertiaryedu_mean earlyeducation_mean
employementrate_mean
    EarlyLeavers_c Tertiaryedu_c EarlyEducation_c Employmentrate_c | SUBJECT(Country)
COVTYPE(VC)
  /REPEATED=time | SUBJECT(Country) COVTYPE(AR1).
```

Mixed Model Analysis

Notes

Output Created		03-MAR-2019 08:53:00
Comments		
Input	Data	C:\Users\Erjavec\Downloads\data_Ginicoef_3.3 (1).sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	63
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics are based on all cases with valid data for all variables in the model.

Syntax		MIXED ginicoef WITH earlyleavers_mean tertiaryedu_mean earlyeducation_mean employementrate_mean EarlyLeavers_c Tertiaryedu_c EarlyEducation_c Employmentrate_c /CRITERIA=CIN(95) MXITER(100) MXSTEP(10) SCORING(1) SINGULAR(0.000000000001) HCONVERGE(0, ABSOLUTE) LCONVERGE(0, ABSOLUTE) PCONVERGE(0.000001, ABSOLUTE) /FIXED=earlyleavers_mean tertiaryedu_mean earlyeducation_mean employementrate_mean EarlyLeavers_c Tertiaryedu_c EarlyEducation_c Employmentrate_c | SSTYPE(3) /METHOD=ML /PRINT=SOLUTION TESTCOV /RANDOM=INTERCEPT earlyleavers_mean tertiaryedu_mean earlyeducation_mean employementrate_mean EarlyLeavers_c Tertiaryedu_c EarlyEducation_c Employmentrate_c | SUBJECT(Country) COVTYPE(VC) /REPEATED=time | SUBJECT(Country) COVTYPE(AR1).
Resources	Processor Time	00:00:00,14
	Elapsed Time	00:00:00,16

Warnings

The final Hessian matrix is not positive definite although all convergence criteria are satisfied. The MIXED procedure continues despite this warning. Validity of subsequent results cannot be ascertained.

Model Dimension[a]

	Number of Levels	Covariance Structure	Number of Parameters		

Fixed Effects	Intercept	1		1		
	earlyleavers_mean	1		1		
	tertiaryedu_mean	1		1		
	earlyeducation_mean	1		1		
	employementrate_mean	1		1		
	EarlyLeavers_c	1		1		
	Tertiaryedu_c	1		1		
	EarlyEducation_c	1		1		
	Employmentrate_c	1		1		
Random Effects	Intercept + earlyleavers_mean + tertiaryedu_mean + earlyeducation_mean + employementrate_mean + EarlyLeavers_c + Tertiaryedu_c + EarlyEducation_c + Employmentrate_c[b]	9	Variance Components	9		
Repeated Effects	time	7	First-Order Autoregressive	2		
Total		25		20		

Information Criteria[a]

-2 Log Likelihood	102,056
Akaike's Information Criterion (AIC)	142,056
Hurvich and Tsai's Criterion (AICC)	162,544
Bozdogan's Criterion (CAIC)	204,599
Schwarz's Bayesian Criterion (BIC)	184,599

The information criteria are displayed in smaller-is-better form.[a]

a. Dependent Variable: Y (gini coef).

Fixed Effects

Type III Tests of Fixed Effects[a]

Source	Numerator df	Denominator df	F	Sig.
Intercept	1	8,847	12,920	,006
earlyleavers_mean	1	8,882	153,057	,000
tertiaryedu_mean	1	8,919	,819	,389
earlyeducation_mean	1	8,926	2,466	,151
employementrate_mean	1	8,792	3,106	,113
EarlyLeavers_c	1	12,324	,017	,898

Tertiaryedu_c	1	6,945	3,010	,127
EarlyEducation_c	1	6,319	,483	,512
Employmentrate_c	1	42,966	3,418	,071

a. Dependent Variable: Y (gini coef).

Estimates of Fixed Effects[a]

Parameter	Estimate	Std. Error	df	t	Sig.		
Intercept	70,918703	19,729749	8,847	3,595	,006		
earlyleavers_mean	,622385	,050307	8,882	12,372	,000		
tertiaryedu_mean	,051460	,056880	8,919	,905	,389		
earlyeducation_mean	-,362061	,230576	8,926	-1,570	,151		
employementrate_mean	-,346063	,196354	8,792	-1,762	,113		
EarlyLeavers_c	,007652	,058653	12,324	,130	,898		
Tertiaryedu_c	,128633	,074147	6,945	1,735	,127		
EarlyEducation_c	,009425	,013560	6,319	,695	,512		
Employmentrate_c	,014388	,007782	42,966	1,849	,071		

Covariance Parameters

Estimates of Covariance Parameters[a]

Parameter		Estimate	Std. Error	Wald Z	Sig.		
Repeated Measures	AR1 diagonal	,252912	,120984	2,090	,037		
	AR1 rho	,483396	,227581	2,124	,034		
Intercept [subject = Country]	Variance	,000000[b]	,000000	.	.		
earlyleavers_mean [subject = Country]	Variance	,000000[b]	,000000	.	.		
tertiaryedu_mean [subject = Country]	Variance	,000762	,000403	1,889	,059		
earlyeducation_mean [subject = Country]	Variance	,000000[b]	,000000	.	.		
employementrate_mean [subject = Country]	Variance	,000000[b]	,000000	.	.		
EarlyLeavers_c [subject = Country]	Variance	,000000[b]	,000000	.	.		
Tertiaryedu_c [subject = Country]	Variance	,010657	,016895	,631	,528		
EarlyEducation_c [subject = Country]	Variance	,000379	,000656	,578	,563		
Employmentrate_c [subject = Country]	Variance	,000000[b]	,000000	.	.		

Appendix 4: SPSS Outcome of Mixed Model Analysis for Income Inequality as dependant variable

```
MIXED income WITH earlyleavers_mean tertiaryedu_mean earlyeducation_mean employementrate_mean
    EarlyLeavers_c Tertiaryedu_c EarlyEducation_c Employmentrate_c
  /CRITERIA=CIN(95) MXITER(100) MXSTEP(10) SCORING(1) SINGULAR(0.000000000001) HCONVERGE(0,
    ABSOLUTE) LCONVERGE(0, ABSOLUTE) PCONVERGE(0.000001, ABSOLUTE)
  /FIXED=earlyleavers_mean tertiaryedu_mean earlyeducation_mean employementrate_mean EarlyLeavers_c
    Tertiaryedu_c EarlyEducation_c Employmentrate_c | SSTYPE(3)
  /METHOD=ML
  /PRINT=SOLUTION TESTCOV
  /RANDOM=INTERCEPT earlyleavers_mean tertiaryedu_mean earlyeducation_mean employementrate_mean
    EarlyLeavers_c Tertiaryedu_c EarlyEducation_c Employmentrate_c | SUBJECT(Country) COVTYPE(VC)
  /REPEATED=time | SUBJECT(Country) COVTYPE(AR1).
```

Mixed Model Analysis

Notes

Output Created		03-MAR-2019 08:57:56
Comments		
Input	Data	C:\Users\Erjavec\Downloads\data_income_3.3.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	63
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics are based on all cases with valid data for all variables in the model.

Syntax		MIXED income WITH earlyleavers_mean tertiaryedu_mean earlyeducation_mean employementrate_mean EarlyLeavers_c Tertiaryedu_c EarlyEducation_c Employmentrate_c /CRITERIA=CIN(95) MXITER(100) MXSTEP(10) SCORING(1) SINGULAR(0.000000000001) HCONVERGE(0, ABSOLUTE) LCONVERGE(0, ABSOLUTE) PCONVERGE(0.000001, ABSOLUTE) /FIXED=earlyleavers_mean tertiaryedu_mean earlyeducation_mean employementrate_mean EarlyLeavers_c Tertiaryedu_c EarlyEducation_c Employmentrate_c | SSTYPE(3) /METHOD=ML /PRINT=SOLUTION TESTCOV /RANDOM=INTERCEPT earlyleavers_mean tertiaryedu_mean earlyeducation_mean employementrate_mean EarlyLeavers_c Tertiaryedu_c EarlyEducation_c Employmentrate_c | SUBJECT(Country) COVTYPE(VC) /REPEATED=time | SUBJECT(Country) COVTYPE(AR1).
Resources	Processor Time	00:00:00,14
	Elapsed Time	00:00:00,17

Warnings

The final Hessian matrix is not positive definite although all convergence criteria are satisfied. The MIXED procedure continues despite this warning. Validity of subsequent results cannot be ascertained.

Model Dimension[a]

	Number of Levels	Covariance Structure	Number of Parameters		

Fixed Effects	Intercept	1		1		
	earlyleavers_mean	1		1		
	tertiaryedu_mean	1		1		
	earlyeducation_mean	1		1		
	employementrate_mean	1		1		
	EarlyLeavers_c	1		1		
	Tertiaryedu_c	1		1		
	EarlyEducation_c	1		1		
	Employmentrate_c	1		1		
Random Effects	Intercept + earlyleavers_mean + tertiaryedu_mean + earlyeducation_mean + employementrate_mean + EarlyLeavers_c + Tertiaryedu_c + EarlyEducation_c + Employmentrate_c[b]	9	Variance Components	9		
Repeated Effects	time	7	First-Order Autoregressive	2		
Total		25		20		

Information Criteria[a]

-2 Log Likelihood	-11,196
Akaike's Information Criterion (AIC)	28,804
Hurvich and Tsai's Criterion (AICC)	49,292
Bozdogan's Criterion (CAIC)	91,347
Schwarz's Bayesian Criterion (BIC)	71,347

The information criteria are displayed in smaller-is-better form.[a]

a. Dependent Variable: Y (income).

Fixed Effects

Type III Tests of Fixed Effects[a]

Source	Numerator df	Denominator df	F	Sig.
Intercept	1	8,873	1,681	,227
earlyleavers_mean	1	8,716	89,733	,000
tertiaryedu_mean	1	8,170	,718	,421
earlyeducation_mean	1	8,889	,915	,364
employementrate_mean	1	8,002	,099	,761
EarlyLeavers_c	1	3,819	2,135	,221

Tertiaryedu_c	1	10,309	1,009	,338
EarlyEducation_c	1	49,460	,105	,747
Employmentrate_c	1	43,206	,847	,362

a. Dependent Variable: Y (income).

Estimates of Fixed Effects[a]

Parameter	Estimate	Std. Error	df	t	Sig.	95% Confidence Interval Lower Bound	
Intercept	10,346974	7,980005	8,873	1,297	,227	-7,744450	
earlyleavers_mean	,196740	,020769	8,716	9,473	,000	,149523	
tertiaryedu_mean	-,019203	,022661	8,170	-,847	,421	-,071271	
earlyeducation_mean	-,090229	,094350	8,889	-,956	,364	-,304069	
employementrate_mean	,024331	,077369	8,002	,314	,761	-,154075	
EarlyLeavers_c	-,040646	,027816	3,819	-1,461	,221	-,119338	
Tertiaryedu_c	,022674	,022573	10,309	1,005	,338	-,027417	
EarlyEducation_c	,001434	,004425	49,460	,324	,747	-,007457	
Employmentrate_c	,002928	,003180	43,206	,921	,362	-,003485	

Covariance Parameters

Estimates of Covariance Parameters[a]

Parameter		Estimate	Std. Error	Wald Z	Sig.		
Repeated Measures	AR1 diagonal	,041828	,018850	2,219	,026		
	AR1 rho	,466420	,236033	1,976	,048		
Intercept [subject = Country]	Variance	,059137	,123770	,478	,633		
earlyleavers_mean [subject = Country]	Variance	,000000[b]	,000000	.	.		
tertiaryedu_mean [subject = Country]	Variance	4,366488E-5	,000162	,270	,787		
earlyeducation_mean [subject = Country]	Variance	,000000[b]	,000000	.	.		
employementrate_mean [subject = Country]	Variance	,000000[b]	,000000	.	.		
EarlyLeavers_c [subject = Country]	Variance	,001505	,002910	,517	,605		
Tertiaryedu_c [subject = Country]	Variance	,000000[b]	,000000	.	.		
EarlyEducation_c [subject = Country]	Variance	,000000[b]	,000000	.	.		
Employmentrate_c [subject = Country]	Variance	,000000[b]	,000000	.	.		