European Commission

Creating More Equal Societies What Works?

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Evidence Review

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Background
The London School of Economics and Political Science (LSE) was contracted to conduct three evidence reviews on behalf of the DG for Employment, Social Affairs and Inclusion of the European Commission (EC). The aim of these reviews is to provide the EC with high-quality evidence on the effectiveness of interventions in three policy areas – 1) The Link between Income Support and Activation, 2) Preventative Measures and Preventative Approaches to Low Pay and In-Work Poverty, and 3) Economic Inequality. These reviews are intended to help promote the development of comprehensive policy strategies, are designed to help inform the EC's future impact assessments and hopefully inspire future reforms across the EU.

The scope of the reviews is defined by:

- Identifying evidence that closely matches the European Commission's interest (in terms of intervention, target group and outcome);
- The type of evidence: net impact studies are not always available and therefore the reviews will consider a broad range of evaluation evidence;
- The geographical area: maximising the evidence available from within the European Union, conditional on language constraints.

Here we report the findings from the third evidence review *Creating More Equal Societies – What Works?*

Executive Summary

Income inequality has increased within many EU countries over the past 40 years and a lot of research has been conducted trying to understand the causes behind this increase. Many of the causes are thought to be global in nature (a demand shift favouring highly skilled workers in advanced nations, technological change and international trade patterns) but the fact that inequality has not increased in every country or to the same extent, or even during the same time periods, suggests that policy and institutions play an important role.

With an unprecedented consensus on the need to tackle economic inequality and generate the conditions favourable for inclusive growth, the timing is perfect for an assessment of the evidence on what policies are likely to be the most effective in ensuring that the gains from future economic growth are shared fairly. Given the lack of any strong evidence that inequality reduction hampers growth or that growth per se leads to a reduction in inequality in mature market-based democracies, it is right for these societies to focus on how to maximise the potential for the fruits of future growth to be more evenly distributed and to explore how policies could redistribute the gains from historical growth.

There is now a considerable body of research on economic inequalities but much of this research has focused on mapping inequality trends, examining cross-country differences, investigating the root causes of inequality, and estimating the impact of inequality on a range of outcomes. More recently attention has started to shift to exploring the effectiveness of different social and economic policies on relieving inequality pressures or reducing inequality. The aim of this review is to assess the evidence on a selected number of policy areas to provide an assessment of policy effectiveness.

The review examines three key policy areas: *education* due to the importance of educational attainment in the determination of wages; *wage setting institutions* given their role in shaping the distribution of wages; and, *welfare states,* in particular their role in redistribution through cash transfers. Here we summarise the key findings:

Education

Educational attainment is a key determinant of earnings and therefore education inequality is linked to income inequality through earnings inequality. The so-called 'race' between education and technology suggests a need for producing highly skilled workers to fulfil the increasing labour demands of our globalised and technological economies at a similar rate. Many countries have focused on 'raising the floor' through improving the educational outcomes of the lowest performers but this is not necessarily enough to tackle inequality. Individuals with higher educational qualifications continue to earn, on average, high wage premia. Over the last few decades there has been a rapid expansion in tertiary education but this has led many countries to reform funding models which have distorted access.

Improving attainment, re-evaluating expenditure and reducing inequality

- Investing in education is crucial for reversing inequality across Europe and OECD countries and in particular, higher education is "one of the most important elements to foster economic growth in the long run" (OECD, 2015b, p.44).
- Education expenditure particularly benefits those on a low income, and plays a significant role in reducing income inequality (Piketty, 2014).
- Despite a 40% rise in tertiary school attainment across OECD countries, drop-out rates (non-completion of upper secondary school) in many member states still remain high. In many countries there exist wide disparities in terms of literacy and numeracy rates.
- These trends matter because "the higher the secondary education, the tertiary education, and the educational inequality, the higher the income inequality in the long-run" (Rodriguez-Pose and Tselios, 2009, p.433).

Schooling systems: effects of compulsory and non-compulsory education policies

- Evidence in favour of implementing early intervention strategies in education reform suggests that additional schooling reduces conditional wage dispersion, and compulsory school reforms affect mainly the individuals at the lower end of the distribution of educational attainment (Brunello *et al*., 2009, p. 526).
- In some countries "returns to longer compulsory schooling were as high as 15%-20%" (Brunello *et al*., 2009, p.526).
- Policies such as early tracking and grade repetition have been found to be inequitable, and instead implementing both compulsory schooling reforms, and non-compulsory policies such as Early Childhood Education and Care (ECEC), have had much more rewarding results for students.
- As the OECD argues, "investing early on and in good quality education up to completion of secondary education is among the most profitable policies" (OECD, 2015a, p.31).

Equity: broadening access, improving quality, and increasing social mobility

- Broader access to high-quality education for people across skills levels promotes economic growth and social inclusion.
- Increasing inclusive and more egalitarian access to education could reduce the intergenerational transmission of income inequality and increase opportunities for upward mobility.
- Evidence shows that "the highest-performing education systems are those that combine equity and quality", however only 16% of recent education reforms focused on equity and quality in education (OECD, 2015a, p.31, 19).

- Most of the Nordic countries have the most inclusive educational systems across the EU and OECD countries, which is made possible through substantial public financing (Atkinson, 2015, p.486).
- Due to rising tuition costs and increasing student loan debt, particularly in the United States, student-centred approaches to funding tertiary education, such as increasing scholarships and expanding bursary schemes, are crucial for ensuring equitable access to higher education for all individuals from lower socio-economic backgrounds.

Labour market institutions and wage setting

Wage rates are set in a variety of ways with considerable variation across countries and within countries. The practices have evolved over time with pay sometimes determined at an individual level between a single worker and an employer according to market forces driven by demand and supply, or set at a national (aggregate) level according to wage bargaining agreements made by social partners. Wage setting systems contribute towards differential rates of pay and therefore have a direct impact on earnings inequality. Collective wage bargaining systems have been shown to be associated with lower earnings inequality but where coverage is low, collective wage setting systems can increase pay inequality between 'insiders' and 'outsiders'. Wage setting may be limited to setting pay rates of the lowest paid workers as is the case with minimum wages. Minimum wages, where they are generous enough, help to reduce inequality at the lower end of the wage distribution. A feature of recent inequality trends in some countries has been the increased concentration of earnings, income and wealth among a small group of people. Different cultures of executive pay setting and norms can play an important role in terms of keeping inequality down, or conversely exacerbate inequality of economic resources and power.

Collective wage bargaining

- Collective wage setting is associated with lower wage inequality and, therefore, has a positive impact on primary income inequality. These systems are found to be most effective where coverage is greatest.
- Collective wage setting was a strong feature of the industrial era, but has declined in many countries due to a failure to adapt to new forms of working, the rise of the service sector and increases in female employment.
- The decline in collective wage setting is associated with increases in wage inequality for men in particular; women are less affected.
- Countries in which wage bargaining institutions have remained current and continued to play an active and constructive role have lower rates of inequality.
- Atkinson (2015) proposes reinstating and strengthening the role of social partnerships in wage setting to address wage inequality.

Minimum wages

- Statutory minimum wages have filled the void left by the decline of collective bargaining in many countries and receive strong support from policy advisers due to the role they play in protecting the lowest paid workers from exploitation and extreme low pay. Their potential to reduce wage inequality in the lower half of the wage distribution and their role in nudging employers to pursue higher-skill, higher-productivity, higher-wage strategies makes them an attractive policy option.
- Minimum wages have been shown to reduce inequality particularly when complemented by wage bargaining systems. Research evidence shows that where minimum wage values have declined, wage inequality has increased.
- Evidence reviewed shows that minimum wages can reduce wage inequality, but to be effective they must be set relative high in relation to median pay; they need to raise the wages of a large enough group of workers; there need to be spill-over effects; they mustn't be set so high that they lead to large increases in unemployment.
- Minimum wages are particularly effective at compressing the wage distribution for women in countries where women are concentrated in low paid jobs.

Top executives' pay

- Increases in the concentration of earnings, income and wealth have been driven by large increases in executive pay and bonuses paid to finance workers, particularly in a number of Anglo-Saxon countries.
- Evidence shows that this super-rich group are politically powerful, often making large donations to political parties. This group has been very successful at ensuring that policy reforms do not threaten their economic position.
- A separation of power over financial resources from power over politics needs to be achieved before reform is possible.
- Policy suggestions are: increasing marginal tax rates for high earners; removing tax loop-holes; limiting the size of donations to political parties; reforming wage setting systems for top executives; linking pay to better measures of performance; curbing bonuses.

Welfare states

The welfare state and cash transfers systems play a key role in determining the extent to which inequality in the labour market translates to household-level income inequality. We reviewed the evidence on the relationship between different welfare regimes and inequality, looking beneath different welfare regime types to examine which institutional characteristics help explain cross country variation with a particular focus on cash transfer system.

Welfare state regimes

- The increased post-World War II tax revenues of European countries allowed governments to expend these revenues in new, innovative ways that created rapid growth in welfare states (Piketty, 2014). However, the growth of welfare states has slowed considerably in the twenty-first century.
- Welfare states are successful at redistribution in an egalitarian direction, with Gini coefficients, decile ratios and poverty rates all lower than in primary income distribution, sans intervention.
- Experts argue that governments must constantly evaluate methodologies and institutions within welfare states in order to increase their effectiveness, efficiency and public support.
- The relationship between political power, particularly of vested interest groups, and welfare reform needs close attention to avoid harming the democratic fabric of our societies.
- In terms of effectiveness at reducing inequality and poverty, there is a strong redistributive incidence in Social Democratic welfare regimes and a weak incidence in Continental/Corporatist welfare regimes (Esping-Andersen and Myles, 2009).
- Contrary to commonplace arguments that welfare regimes inhibit economic growth, the introduction of European welfare state programmes is seen as complementary with, rather than in competition with, the achievement of economic goals (Atkinson, 2015, p.265).

Cash transfers

- The generosity of welfare benefits is critical to reducing inequality but so too is the proportion of those eligible for transfers. This is a contested area in the literature; however, the latest evidence suggests that a greater concentration of net cash transfers is less successful at reducing inequality than more universalistic models.
- The most equalising public pension schemes are non-contributory schemes financed out of general revenue, while pay-as-you-go schemes tend to implement an earnings ceiling that tends to be quite regressive.
- Pension obligations are typically subjected to statutory indexation, which has led to income increases and a more favourable position for pensioners. In contrast, non-pension welfare benefits are adjusted on an *ad hoc* basis and tend to lag-behind indexation. This creates inter-generational economic inequality between fortunate pensioners and less fortunate non-pensioners receiving other types of welfare benefits.
- Unemployment Benefit coverage has decreased in the majority of European Union member nations over the period 1995-2005, both in terms of generosity and eligibility. The concern is that a lack of financial support for the unemployed will further widen inequality.

The cause of high and rising economic inequality is multi-faceted. Some experts believe that there is an unstoppable force behind rising trends, yet cross-country analysis provides evidence that there is at least an element of choice and collectively much can be done to create more equal, fairer societies. A successful policy assault needs to tackle the main pressure points head-on; tinkering around the edges of the problem will reap little reward and waste invaluable time. If the rich nations of the world are going to rise to the challenge of creating the right conditions for fairer societies, set out by the United Nations, the World Bank, the World Economic Forum, the OECD, Oxfam and many others, then national level policies need to be combined with a co-operative international approach. International co-operation is required to tackle tax avoidance (for big business and the 'super-rich'), prevent spill-over effects (for example, the establishment of excessive pay-norms for top executives) and reduce inequalities between countries (at the very least to help reduce the flow of migrants from poorer to richer nations). The recent financial crisis of 2007-08 demonstrated only too clearly how entwined and interconnected are the fortunes of different nations and the economic well-being of their populations. If the 'War on Inequality' is going to be won action needs to be taken now as countries begin to emerge from the shadow of the crisis to ensure that the gains from future growth are shared equitably and to put economies on a stronger, more stable footing.

In this evidence review we have examined three key areas where governments can actively help to shape more equitable outcomes. *Education* both empowers people and provides them with tradeable skills to secure a decent income – greater equality in individuals' ability to generate income in the labour market is key to producing more equitable outcomes. *Wage determination* – imbalances in power result in some workers being underpaid while others are overpaid. Collective wage bargaining and minimum wages have proved to be successful in reducing wage inequality. Curbs on the power of top executives, power which has allowed them to take an increasing share of the wage bill to the detriment of other workers and form a politically powerful elite, need further development. *Welfare states* need to evolve to meet the challenges of 'new inequalities' and changing employment landscapes but are essential now and will continue to be essential in the future to help individuals redistribute income over their own lives as well as between the rich and poor.

The Theme: Creating More Equal Societies

Income inequality has increased within many EU countries over the past 40 years and a lot of research has been conducted trying to understand the causes behind this increase. Many of the causes are thought to be global in nature (a demand shift favouring highly skilled workers in advanced nations, technological change and international trade patterns) but the fact that inequality has not increased in every country or to the same extent, or even during the same time periods, suggests that policy and institutions play an important role.

With an unprecedented consensus on the need to tackle economic inequality and generate the conditions favourable for inclusive growth, and as EU countries begin to emerge from the financial crisis of 2007-08, the timing is perfect for an assessment of the evidence on what policies and changes are likely to be the most effective in ensuring that gains from future growth are shared fairly. Given the lack of any strong evidence that inequality reduction hampers growth or that growth per se leads to a reduction in inequality in mature market-based democracies, it is right for these societies to focus on how to maximise the potential for the fruits of future growth to be more evenly distributed and explore how policies could redistribute the gains from historical growth.

There is now a considerable body of research on economic inequalities, however much of this research has focused on mapping inequality trends, examining cross-country differences, investigating the root causes of inequality, and estimating the impact of inequality on a range of outcomes. More recently attention has started to shift to exploring the effectiveness of different social and economic policies on relieving inequality pressures or reducing inequality. The aim of this review is to assess the evidence on a selected number of policy areas to provide an assessment of policy effectiveness.

In this third 'What Works' review we examine the evidence on the effectiveness of different policies, welfare regimes and institutions in terms of reducing inequality, keeping inequality pressures down and maximising the potential for future growth to be inclusive.

We cover the evidence put forward in a number of key publications on this subject. Anthony B. Atkinson published *Inequality: What Can be Done?* in 2015, and in his book Atkinson reviews the evidence on the economic causes of inequality in rich countries drawing in part on his own extensive research output. He makes a number of proposals for what can be done to ensure that future growth in income is shared more evenly. Thomas Piketty's book *Capital in the Twenty-First Century* (2014) focuses on the concentration of income and wealth among a small elite, using evidence on cross-country differences and trends over an extensive period of time. Piketty explores a number of potential policy solutions, from global and regional perspectives, to reduce economic inequality. Piketty explores a number of potential policy solutions to reducing concentration taking a global perspective. Joseph Stiglitz, in his book *The Price of Inequality* (2012), considers the role of power in modern market-based democracies in shaping economic inequalities. He outlines how concentrations of power acquired through the accumulation of income and wealth have distorted the proper functioning of markets. Stiglitz also considers the role of governments and political institutions and how the dominance of a rich and powerful elite has sought to shape policies that favour the already well-off. He too puts forward a concrete set of proposals to tackle inequality.

In addition to these key contributions from highly regarded economists we review evidence contained in *The Oxford Handbook of Economic Inequality* (edited by Wiemer Salverda, Brian Nolan and Timothy Smeeding, 2009) and the output from the EU FP7 funded Growing Inequalities' Impacts (GINI) project which was published by Oxford University Press in two volumes: *Changing Inequalities and Societal Impacts in Rich Countries: Analytical and Comparative Perspectives (*Salverda, Nolan, Checchi, Marx, McKnight, Tóth, and van de Werfhorst (eds)) and *Changing Inequalities and Societal Impacts in Rich Countries: Thirty Countries' Experiences (*Nolan, Salverda, Checchi, Marx, McKnight, Tóth, and van de Werfhorst (eds)).

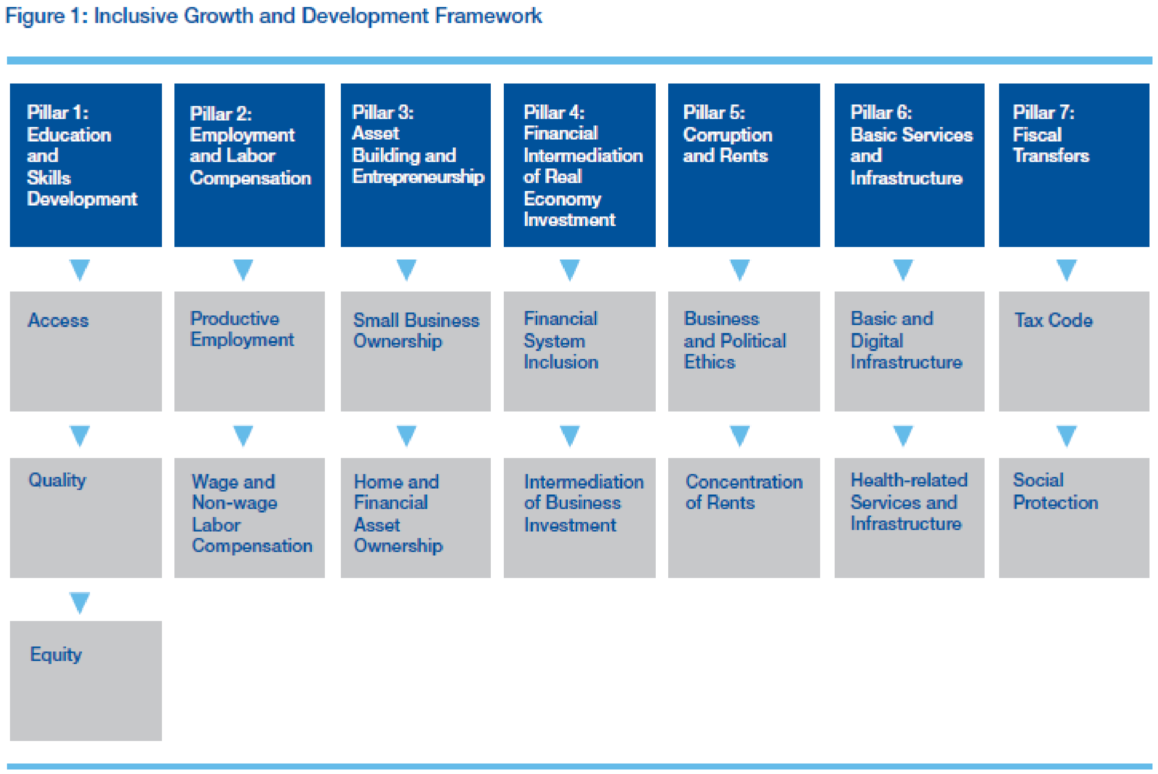
Highly influential publications by the OECD - *Growing Unequal: Income Distribution and Poverty in OECD Countries* (2008); *Divided We Stand: Why Inequality Keeps Rising* (2011) and *In It Together: Why Less Inequality Benefits All* (2015) - have drawn attention to international trends in inequality, the harmful effects of inequality (including lower growth) and policy solutions to tackle inequality. The European Commission recently published a policy note: *High and Rising Inequalities; What Can be Done About it (at EU level)?* (Maquet *et al*., 2015). We pay special attention to these publications in this review and also consider the evidence put forward by the World Bank, the World Economic Forum, the United Nations, and Oxfam.

Economic inequality was high on the agenda at recent meetings of the World Economic Forum (WEF); from 2012, inequality has been identified by WEF members as the most likely threat to the global economy. A paper published by the WEF in advance of the 2015 meeting in Davos and then published as a full report in September 2015 - *The Inclusive Growth and Development Report* (Samans *et al*., 2015) - stressed the need to come up with concrete plans to tackle inequality and not simply lament about the widening gap between rich and poor. The report identifies seven principal policy domains and fifteen sub-domains (reproduced in Figure 1) where they believe governments need to focus attention to ensure that the benefits from economic growth are shared more equally.

> "These pillars and sub-pillars describe the structural and institutional features of a modern economy that particularly matter for achieving broad-based improvement in living standards" (Samans *et al*., 2015, p.9).

To support their initiative, and with the intention to assist policy makers, the WEF has produced a set of country profiles and a statistical dashboard of national key performance indicators.

Figure 1: Inclusive growth and development framework



Source: Reproduced from (Samans *et al.*, 2015) *The Inclusive Growth and Development Report*, WEF, 2015, Figure 1, p.8.

The World Bank recently set twin goals to reduce extreme poverty alongside boosting "shared prosperity" (growth in the income of the bottom 40% in *every* country) (World Bank, 2014); with the intention to focus the work of the World Bank on "increas[ing] the incomes and welfare of the less well-off wherever they are, be it the poorest of nations or in thriving, middle-income countries". The United Nations Sustainable Development Goals, outlined in the UN report *Transforming Our World: The 2030 Agenda for Sustainable Development*, also emphasize the importance in reducing economic inequality through public policy "within and among countries". The UN Sustainable Development Goals take aim at "adopt[ing] policies, especially fiscal, wage and social protection policies, and progressively achieve greater equality" and "promot[ing] sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all". Oxfam released a report in 2013 titled *Even It Up: Time to end extreme inequality*, in which it stated, "Economic inequality has reached extreme levels" which "corrupts politics and hinders economic growth". The overview of the report concludes, "The world has woken up to the gap between the rich and the rest. From Spain to South Africa, and Peru to Pakistan, people are already demanding a world that is fairer".

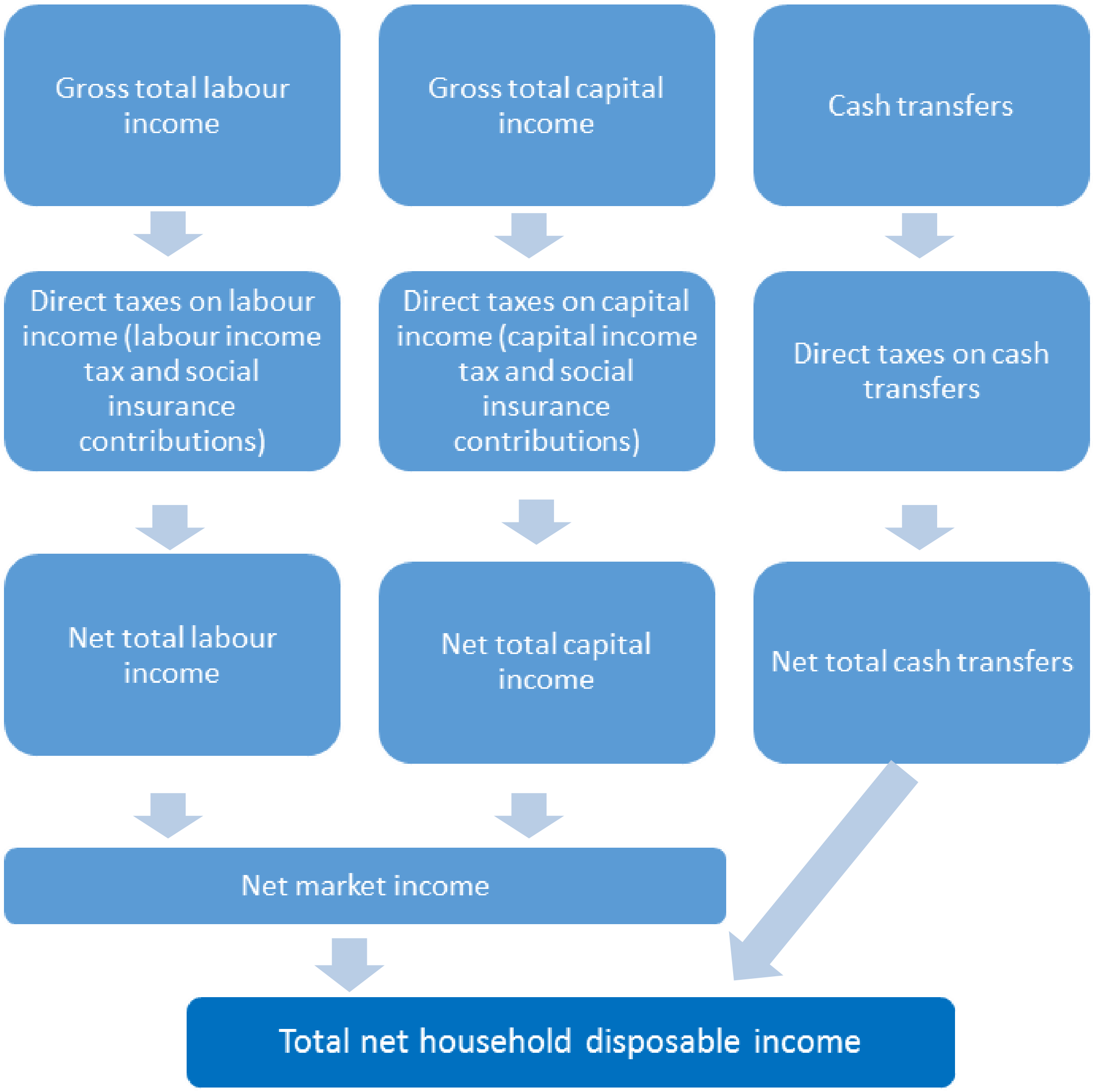
More recently, the Ford Foundation announced in 2015 that it would shift its entire philanthropic agenda towards addressing inequality through focusing on the interconnected drivers and the structural causes of inequality. The five areas which the Ford Foundation have identified as the main drivers of inequality are: 1) entrenched cultural narratives that undermine fairness, tolerance, and inclusion; 2) rules of the economy that magnify unequal opportunity and outcomes; 3) persistent prejudice and discrimination against women, as well as racial, ethnic, and caste minorities; 4) a failure to invest in and protect vital public goods such as education and natural resources; and 5) unequal access to government decision-making and resources. Drawing upon Piketty and Atkinson's research, the Ford Foundation has committed to joining in an international effort to reduce inequality.

The WEF report urged governments to adopt a benchmarking framework to measure a list of policies including minimum wages, trade union membership, investment in public services and corruption as part of an action plan for tackling rising inequality. They have also suggested ways of measuring policies that affect inclusiveness, including business ethics, social safety nets and the quality of basic infrastructure. The authors of the report note that there is little in the way of concrete policy guidance and a growing need for analytical frameworks and evidence-based solutions, which we seek to explore in this review.

The OECD and the WEF both conclude that there is no single solution to addressing rising inequality and achieving inclusive growth in the future. Their view is that a country's optimal response to the challenge will depend on the origins of inequality in the specific national context. In this review we set out to dig a bit deeper to see whether there are clear policy pointers, based in evidence, on what works and we organise the review in three main parts reflecting the policy areas covered: (Part 1) Education; (Part 2) Labour market institutions and pay determination; (Part 3) Welfare regimes and redistribution through cash transfers systems.

To help understand how these policy areas have the potential to impact on income generation and income inequality, Figure 2 provides a simple flow diagram describing the components in the generation of total net household disposable income. In this review we will mainly be concerned with policies that affect gross total labour income and cash transfers, although capital income has an important role to play particularly for inequality driven by concentration among the most well-off.

Figure 2: Components of total net household disposable income



The European Commission is rightly looking to address economic inequality and, as noted above, is in good company with influential organisations dedicating time and resources to not only understanding causal factors of economic inequality, but also policies and measures which are effective at mitigating the negative effects of this global problem.

Part 1: Education

Education

Skills are a key determinant of wages and therefore an unequal distribution of skills will feed through to an unequal distribution of earnings; the exact mapping will depend on a range of factors. Educational attainment is unequally distributed within populations partly reflecting differences in ability but also differences in opportunities. Schooling systems and their financing vary between countries, giving rise to differences in the distribution of educational attainment and the link between family background and attainment. In this part of the review we look at the evidence on the impact of educational inequality and the relationship between education and unequal income distributions.

1.1 An Introduction to Education and Inequality

The issue of inequality has mostly been associated with unequal income distributions and is most frequently analysed as such: a labour market and wage issue. However, as recent literature has proliferated on the topic of inequality, the notion of educational inequality as a core component of income inequality has gained much traction. Recent research conducted by the OECD, scholars such as Thomas Piketty and Anthony Atkinson, as well as other authors, highlight the relationship between access to education, educational attainment, and income inequality on a national, regional and global level. Specifically, current concerns about rising income inequality in European Union countries and amongst OECD member countries suggest that efforts to reduce the wage gap distribution must take into account the ‘race’ between education and technology, to be successful. As the literature on education and income inequality re-contextualises the issue, “theoretical studies suggest that the relation between education and income inequality is not always clear” (Gregorio and Lee, 2002, p.396) and is “still a long way from being perfectly understood, especially at a regional level” (Rodriguez-Pose and Tselios, 2009, p.412). However, regardless of perfect correlation, educational inequality is no doubt a key component for analyzing income inequities in the EU and OECD labour markets.

As authors Rodriguez-Pose and Tselios note in their study, “by analyzing the microeconomic processes underpinning the relationship between individual educational endowments and income inequality”, we can better understand “whether education policies contribute to a more equal income distribution and whether the EU labour market is responsive to differences in qualifications, knowledge, and skills” (Rodriguez-Pose and Tselios, 2009, p.412). This review will highlight key relationships and concerns of educational inequality as they relate to the broader context of income inequality across the European Union and OECD member countries. First, this section will highlight historical links between human capital and income distribution, the current ‘race’ between education and technology, and the impact of education on social mobility and intergenerational inequality. Next, the following section will investigate differences in educational attainment and public expenditure, through looking at issues of equity in primary and secondary school, and the costs of inequality in higher education. Finally, this review will present several implications of educational policy responses.

Human Capital, Educational Attainment and Income Distribution: Narrowing the Gap

Broadly, human capital can be defined as the set of accumulated skills or knowledge an individual holds, which can be used to participate in the labour market. In other words, a person's human capital enables that individual to work and receive an income. As rudimentary as this definition is, it highlights the "notion of education as an underlying factor in income differences", which "has a long history, dating back to the work of Adam Smith" (Rodriguez-Pose and Tselios, 2009, p.414). The work of Mincer (1958), Schultz (1961), and Becker (1962) also consider the notion that educational attainment -"a process that is sometimes referred to as 'skills deepening'," has an important impact on income inequality (Rodriguez-Pose and Tselios, 2009, p.414). These authors align with the human capital model of income distribution, which "implies that the distribution of earnings (or income) is determined by the level and the distribution of schooling across the population" (Rodriguez-Pose and Tselios, 2009, p.396). An older study by Chiswick (1971), which used cross-sectional data from nine countries, also suggests that earnings inequality increases with educational inequality (Rodriguez-Pose and Tselios, 2009 p. 396). In this perspective, increasing rates of educational attainment alongside reducing education gaps, enhances human capital and can reduce income inequality.

Historically, global efforts to close the gender education gap have been a particularly salient example of how broadening and increasing equitable educational attainment can reduce income inequality. Anthony Atkinson discusses this impact in his work, noting that "we need [...] to distinguish between differences attributable to characteristics such as educational attainment, which may justify differential pay, and those that reflect discrimination" (Atkinson 2015, p.39). By attributing the narrowing of the gender wage gap to the increase in women's educational levels, Atkinson notes that there has been a reversal of the gender education gap in the United States and most OECD countries, in which "women are now the majority of US college graduates [...] and outrank men in twenty-nine of the thirty-two OECD countries" (Atkinson 2015, pp.39-40). However, the United Kingdom for instance has one of the lowest percentages of female graduates from tertiary programmes (56 Index, rank 18/24) (OECD, 2015c). As a result of increasing women's access to higher education, women's educational attainment helped reduce income inequality, yet continues to remain an important issue. This example highlights how education is essential to enhancing human capital, which plays an important role in reducing unequal income distributions over time. Not only is improving general education and average skill levels key to economic growth and social progress, but "countries with fewer low-skilled adults and more highly skilled ones do better in economic terms," meaning that broader access to high-quality education for people across skill levels promotes economic growth and social inclusion (Friends of Europe, 2015, p.2).

The ‘Race’ Between Education and Technology

While increases in access to education have certainly helped to reduce wage gaps across social groups overall, literature on income inequality also argues that earned income inequality did not decrease significantly because, as qualification levels shifted upwards, wage levels also increased at similar rate, so that inequality did not change (Piketty, 2014, p.484). In this regard, an important concept emerges: the idea of a ‘race’ between education and technology. First introduced in 1975 by Nobel Prize in Economics winner Jan Tinbergen as a “race” between an increase in the demand for educated workers and the expansion of the educated population, both Atkinson and Piketty also identify this trend as an important concept for understanding present income inequality dynamics in relation to educational inequality (Atkinson, 2015, p.83; Piketty 2014, p.304). The ‘race’ between education and technology suggests that in order to fulfill the increasing labour demands of our globalised and technological economies, the labour supply needs to acquire the necessary skills for those roles at a similar rate.

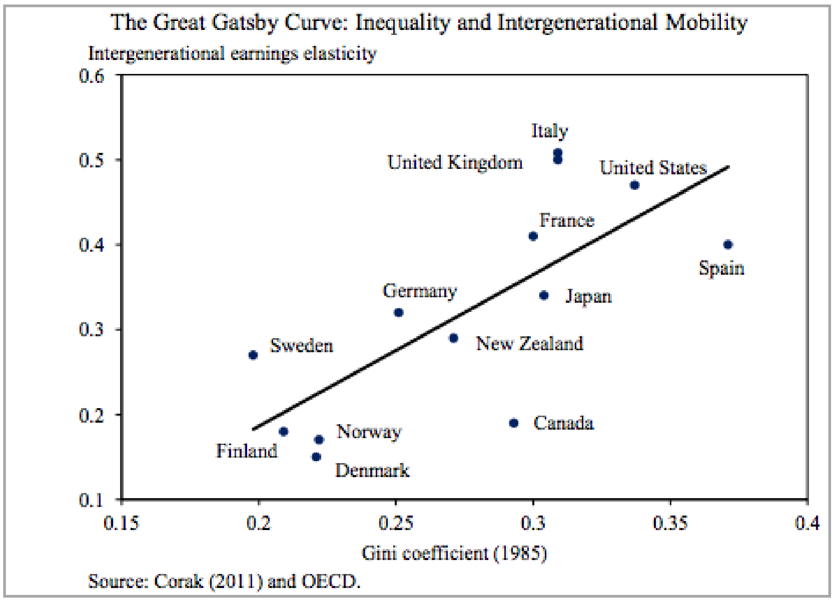
However, in order to truly decrease inequality, “the educational system must increase its supply of new types of training and its output of new skills at a sufficiently rapid pace [...] especially for the least well educated” (Piketty, 2014, pp.305-306). While Piketty views the general theory as simplistic, he acknowledges the value of both education and technology as social and economic forces that “play a fundamental role in determining wage inequality” (Piketty, 2014, p.305). Piketty argues that the best way to increase wages and reduce wage inequalities in the long run is to invest in education and skills because over the long run, education has the power to multiply wages more so than minimum wages and wage schedules (Piketty, 2014, p.305). Increasing productivity of the labour force will thus affect the overall growth of the economy. In this regard, the state of the educational system (i.e. quality of teaching, access to certain educational tracks and professional opportunities, the cost of study, etc.) is central to increasing individual labour output and reducing unequal income distributions (Piketty, 2014, p.305). Overall, the theory of the ‘race’ between education and technology offers a foundational premise for understanding the dynamics between education, the labour market and income inequality.

Impacts of Education on Social Mobility and Intergenerational Inequality

A core feature of income inequality is its ability to be reproduced in subsequent generations. The cycle of inequality is often associated with intergenerational transmission of resources, such as financial capital. Taking Piketty’s perspective on what equity in education should look like, that “every child should have access to education, regardless of his or her parents’ income” (Piketty, 2014, p.477), it is clear that income inequality should not be a premise for educational inequality. However, since income levels are often repeated across generations, “low inequality in education and income in the parent generation implies lower inequality of opportunities for the offspring generation,” (Piketty, 2014, p.325). Research has shown that intergenerational wage inequality reproduction is lowest in the Nordic countries, which have relatively egalitarian educational systems and more social mobility than Anglo-Saxon countries, and highest in the United States, where university tuition fees are extremely high (Checchi, 2006; Piketty, 2014). Meanwhile, France, Germany, and Britain displayed moderate mobility (Piketty, 2014, p. 484).

The "Great Gatsby Curve"[1], shown below, ranks OECD countries in order of inequality and intergenerational mobility, also reflects similar findings about the United States as highly unequal with a high intergenerational earnings correlation, and the Nordic countries as less unequal with low intergenerational income inequality. The relationship between family income background and children's educational attainment also varies across countries (OECD, 2012). This research suggests that increasing inclusive and more egalitarian access to education could reduce the intergenerational transmission of income inequality and increase opportunities for upward mobility.

Figure 3: The Great Gatsby Curve: inequality and intergenerational mobility



Source: Reproduced from 'Economic Report of the President' (2012), Chapter 6, p.177.

Differences in social mobility between countries also suggest that efforts to address inequality need greater international cohesion in order to account for the effects of migration and mobility, address tensions between generations and enhance trust across States (Friends of Europe, 2015, p.13). In particular, EU and OECD Member States must take action to accommodate the rapidly increasing number of migrants to ensure that educational attainment translates to social mobility (Friends of Europe, 2015, p.22), reducing intergenerational income inequality regardless of national origin. Addressing intergenerational wealth through a cross-country approach is crucial because, the "OECD warns that the biggest threat to inclusive growth is the risk that social mobility could grind to a halt" (Friends of Europe, 2015, p.22). Across OECD welfare states, obtaining social mobility through education has

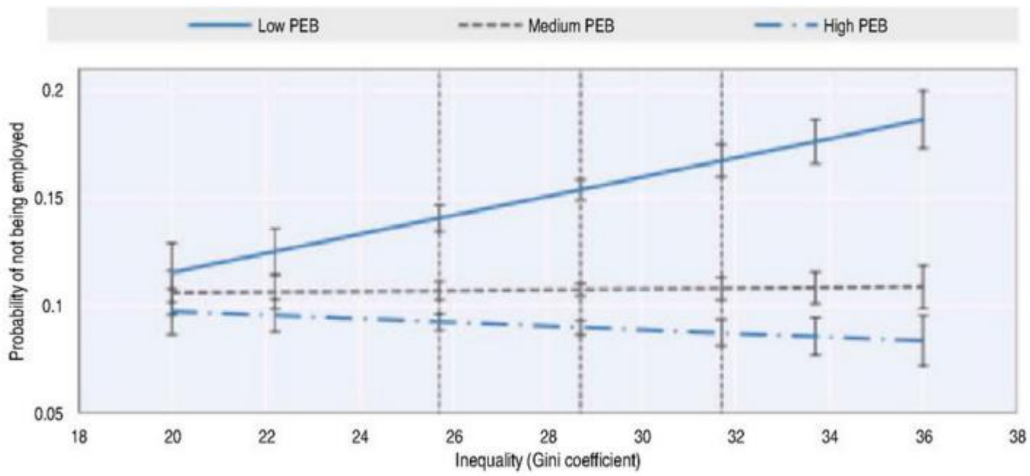
[1] Alan Krueger referred to the "Great Gatsby Curve" for the first time in a speech, "The Rise and Consequences of Inequality", to the Center for American Progress on January 12, 2012, in his capacity as the Chairman of the Council of Economic Advisors.

not significantly improved, in many countries "young people whose parents were university students are still five or six times more likely to go to university themselves than those whose parents are not graduates" (Friends of Europe, 2015, p.22). Such a significant correlation between education and intergenerational social mobility can be explained through a variety of factors that influence intergenerational manifestations of educational differences.

According to Checchi *et al.* (2006), there are four main factors. The first issue is that "transmission of unobservable ability can be genetic," meaning that some skilled or cognitive abilities are genetically transmitted, which are not necessarily a product of education, but should not necessarily be overlooked by the educational system either. Examples of such a genetically transmitted skill could be a strength in a particular subject matter or a learning disability. The second source is the role of culture in influencing educational attainment. Most empirical evidence shows that "children of educated parents are more likely to acquire education," which is often due to the reproduction of educational choices (Checchi, 2006, p.216). A third factor is financial liquidity. Limited family financial resources can affect access to education and as a result access to higher-paid jobs, which "opens the door to a poverty trap" (Checchi, 2006, p.216). As the OECD graph below (Figure 4) demonstrates, individuals from a medium or high PEB (parent educational background) are less likely to be unemployed than individuals from a low PEB, who are at a higher risk of being unemployed over their working life.

Figure 4: Probability of not being employed over the working live by parent educational background and inequality

Figure 2.5. Probability of not being employed over the working life by parent educational background (PEB) and inequality



Note: The graph plots the average predicted probability of not being employed over the working life for individuals from low, medium and high parental (educational) background, as a function of the degree of inequality (Gini points) in the country at the time they were around 14 years old. Low PEB: neither parent has attained upper secondary education; medium PEB: at least one parent has attained secondary and post-secondary, non-tertiary education; high PEB: at least one parent has attained tertiary education. Dotted lines represent baseline probabilities for each group. The bars indicate 95% confidence intervals. The vertical dashed lines indicate the 25th, the median and the 75th percentiles of the underlying distribution of inequality.

Source: OECD Secretariat calculations based on PIAAC data. See Box 2.3 and Annex 2.A1.

Source: OECD (2015b). *In It Together: Why Less Inequality Benefits Us All,* OECD Publishing, Paris.

Also related to family wealth, is a fourth source of intergenerational inequality resulting from residential segregation, in which resident income levels influence school quality and resources that in return, affect house prices. In this predominant case, “richer families will gain access to better schools by locating closer to them” (Checchi, 2006, p.216). Educational segregation, which is particularly salient in the United States for example, is thus an important factor for understanding intergenerational income transmission through the education system. As Checchi (2006) explains, structural mobility is “the divergence between the marginal distributions of educational attainments in two adjacent generations” and “can be attributed to the relaxation of liquidity constraints and/or to the increase in public resources invested in education” (Checchi, 2006, p.217). In other words, not only do household or family incomes matter in determining educational attainment and reducing intergenerational inequality, but also, public expenditure is a determining factor.

1.2 Differences in Educational Attainment and the Role of Public Expenditure

Educational attainment is differentiated at each level (i.e., primary, secondary, and tertiary), and its impact on income inequality can vary according to a country’s level of development and public expenditure on education. According to the OECD (2008, p.230), depending on the country, primary and lower secondary education can account for 30% to 60% of public education expenditure. However, tertiary education is usually considered the most important for the variation in income for developed countries. Generally, countries with higher educational attainment tend to have more equal income distribution (Rodriguez-Pose and Tselios, 2009, p.414). A study by Rodriguez-Pose and Tselios on education and income inequality in 2009 compared human capital and income distribution across countries from 1960 to 1990, and found that government public expenditure on education helped explain cross-country differences or similarities in income and educational inequality.

With each level of schooling, primary, secondary and tertiary, citizens are affected by public investment in education, which defines both access and the quality of schooling. Overall, “high-performing education systems will improve the lives of citizens in many ways” (OECD, 2015a, p.17). Each level of schooling affects future earnings and employability. According to the OECD (2015a, p.17), “those with at least upper secondary education are more likely to be employed than those without, and those who have completed tertiary education will earn more” and “higher literacy proficiency and educational attainment are associated with higher levels of social outcomes, including health, interpersonal trust and political efficacy”. Such findings raise important questions about trends in educational attainment and skill gains according to age, gender, generation and country. Has progress been made in educational participation across generations despite widespread intergenerational inequality? How do levels of educational attainment reflect equity in education? In order to analyze specific educational inequities, the following sections focus on educational inequality at the primary, secondary and tertiary levels of school, which each highlight different insights about how educational attainment is differentiated across age groups and countries, as well as how it is affected by public expenditure.

Age, Educational Attainment and Skills

First, on average across OECD countries, educational progress can be seen through educational attainment rates across age groups. According to the OECD (2015a, p.68), on average, educational attainment rates of those with a tertiary qualification have increased to 39% among 25-34 year olds compared to 24% among older adults (55-64 year-olds); 82% of younger adults (25-34 year-olds) have attained at least upper secondary education, compared to 64% of older adults (55-64 year-olds); and 84% of younger women have attained at least upper secondary education, compared to 61% of older women. In Finland for instance, the percentage of 25-34 year-old adults whose educational attainment is higher than that of their parents is one of the highest among OECD and partner countries at 39.2% or at a rank of 6/20 (OECD, 2015c). In the United Kingdom, the level of tertiary attainment among 25-64 year-olds is one of the highest among OECD and partner countries (42.2 %, rank 7/40) (OECD, 2015c). These findings suggest that significant strides have been made in educational attainment for OECD countries, yet drop-out or non-completion rates still remain high in certain countries such as Italy, Spain, Portugal, Turkey and Mexico, where 25% of young adults have not completed upper secondary school (OECD, 2015a, p.26). On average across OECD countries however, the rate is 18% (OECD, 2015a, p.26). With at least 18% of young people not attaining a minimum of upper secondary school, this rate has concerning implications for the future workforce because it jeopardizes skills levels and future earnings for the about 1/5th of OECD member populations (OECD, 2015a, p.26).

Second, improvements in educational systems and outcomes are seen through increases in specific skill levels across generations, such as numeracy and literacy rates. According to the OECD Survey of Adult Skills, "among the 22 OECD national and sub-national entities participating [...], younger adults (25-34 year-olds) showed higher proficiency in numeracy than older adults (55-65 year-olds), with average scores of 279.4 for 25-34 year-olds and 252.7 points for 55-65 year-olds" (OECD, 2015a, p.26). Of particular note is the cross-country variation in numeracy performance between 10.2 points in the United Kingdom to 48.9 in Korea, with an average difference of 26.7 points (OECD, 2015a, p.26). Significant differences in math and reading performances across OECD countries reveal that almost one in four performed below the baseline level (Level 2) in mathematics on the PISA exam in 2012 and about one in five performed below Level 2 in reading (OECD, 2015a, p.24). On a similar note, in the United Kingdom, 16-65 year-olds achieved below-average scores in literacy and numeracy in the Survey of Adult Skills Work (OECD, 2015a, p.303). This is concerning due to the clear link between literacy and numeracy skills with regard to future employment prospects.

Without baseline proficiency in math or reading, students will not be able to participate effectively in school, risk dropping out of upper secondary school, and will "enter the workforce unprepared, requiring additional support and struggling more than their peers".

(OECD, 2015a, p.25). Such baseline proficiencies in math and reading need to be addressed across OECD countries. In addition, literacy rates vary widely between countries. For instance, the mean literacy score in European countries is higher than in the U.S., but in others such as "in Spain and Italy, the mean literacy score is 10%, lower than in the Netherlands, Finland and Sweden" (Friends of Europe, 2015, p.23). Additionally "literacy scores of graduates vary widely," which suggests that "that formal educational qualifications can be misleading: educational policies do not lead to the same level of skills across Europe, so reform is clearly needed" (Friends of Europe, 2015, p.24).

Impacts of Primary, Secondary and Tertiary Education on Wage Inequality

The majority of EU and OECD countries have substantial differences between educational attainment and wage premia. For instance, in "Germany, France, Portugal and Italy, individuals with higher education earn wages that are at least 75% higher than the wages earned by individuals in the lowest educational category and more than 40% higher than those earned by individuals in the upper secondary group" (Budria and Telhado-Pereira, 2011, p.12). Large in-country differences reflect unequal wage distribution with regard to educational attainment in both national and regional contexts. Both the 2011 Budria and Telhado-Pereira study and 2009 Rodriguez-Pose and Tselios study on educational returns and income inequality reveals trends in educational attainment and wage dispersion across the European Union.

First, through testing the relationship between education and income inequality in the regional context of the European Union, the 2009 Rodriguez-Pose and Tselios study (p.433) found that "the higher the secondary education, the tertiary education, and the educational inequality, the higher the income inequality in the long-run," however secondary education had the most influence on unequal income distributions. This was the case in Greece for example, where primary and secondary education mainly benefit the three lowest quintiles of the distribution (OECD, 2008, p.230). Meanwhile, the 2011 study finds that tertiary education might be a more determining factor in linking educational attainment to wage inequality. For instance, in France, Portugal and Sweden, "the returns to all education levels decreased over the sample period, contributing towards wage compression" (Budria and Telhado-Pereira, 2011, p.25). However, in Germany and the UK, "changes in average returns had an ambiguous effect on wage inequality" (Budria and Telhado-Pereira, 2011, p.25). Compared to other countries, Sweden had a low rate of return on higher education at 28.4% (Budria and Telhado-Pereira, 2011, p.12). Finally, in Norway and Finland, the effects of tertiary education on wage inequality were the opposite. Tertiary education correlated positively with rising wage inequality in Norway, and negatively in Finland (Budria and Telhado-Pereira, 2011, p.25).

These findings suggest that "an educational expansion towards tertiary education may increase overall wage inequality in Europe," more so than primary or secondary school educational expansion (Budria and Telhado-Pereira, 2011, p.28). Alternatively, this means that in "in Europe, there has been a tendency towards wage dispersion among the high-educated," which has contributed towards overall wage inequality (Budria and Telhado-Pereira, 2011, p.28). Because of the higher rates of return to higher education in most European countries, overall income inequality within countries continues to increase, which reflects a gap between educational expansion and wage levels.

The Costs of Inequality in Higher Education

Access to higher education has long been a challenging issue, especially with regard to funding tertiary school. As seen in the previous section, literature on educational inequalities highlights the notable disparities of educational attainment across different educational levels. Tertiary school or higher education, was found to have the most variation in terms of public expenditure (OECD, 2008), which in return reflected the highest disparities in equitable access to higher education. Due to low levels of public expenditure on tertiary education in many OECD countries (such as the United States, Portugal, Spain, Greece and Australia), access to higher education relies on an individual and their families being able to afford the high costs of university. Inequitable access and attendance to higher education is thus highly correlated with income inequality in all OECD countries (Piketty, 2014). As Atkinson puts it, "only a very small slice of the educational elite has entered the new economic elite [in the U.S.]," - a phenomenon that is occurring widely across OECD countries (Atkinson, 2015, p.107). The association between tertiary educational attainment with a more unequal distribution of resources, means that the socio-economic benefits of higher education mostly "accrue to individuals coming from richer families" (Piketty, 2014, p.231).

While many countries in the European Union such as France, Germany and most Nordic countries have fairly low variation in disparities between public expenditure on primary, secondary and tertiary education, upon closer analysis, funding distributions vary highly across the OECD countries, in particular at the tertiary education level. The OECD's 2008 report *Growing Unequal?: Income Distribution and Poverty in OECD Countries,* highlights disparities across different levels of education, showing that little difference was linked between income and pre-primary education expenditure, while with regard to differences between income and primary, secondary and tertiary education, there was a huge increase in expenditure. In particular, very high differences were visible for the United States, Portugal, Spain, and Greece.

Despite variations between countries, an important take-away point that these studies highlight is that education expenditure particularly benefits the three lowest quintiles of the income distribution, which is a significant determinant in reducing income inequality (Piketty, 2014, p.242).

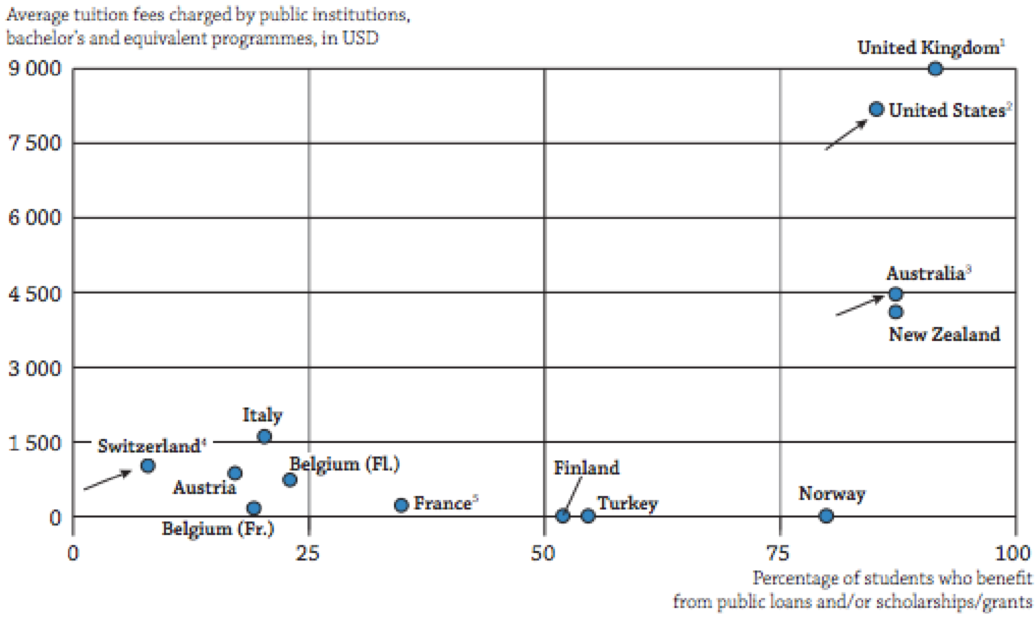
Most of the literature on inequality emphasises the case of the United States, which has the most unequal higher education system amongst OECD countries, in order to analyze the impacts of inequitable tertiary education systems and suggest alternative ways to approach public expenditure for tertiary education more broadly. According to Piketty (2014, p.306), scholars such as Goldin and Katz attribute rising income inequality in the United States to "a failure to invest sufficiently in higher education," which results in families not being able to afford high tuition costs (Piketty, 2014, p.306). In particular, over the past twenty-five years, there have been disproportional changes in the distribution of economic and educational gains in the U.S. (Atkinson, 2014, p.486). The exorbitant amount of student loan debt in the U.S. is highly reflective of such disproportional outcomes because it poses a high risk, in particular for lower income families. In 2013, "about 24 percent of young families' education debt [was] held by those making less than $30,000," and the level of educational loan debt continues to rise (Piketty, 2014, p.166).

According to the OECD, in Belgium, Estonia and Finland, only "9% to 22% of students benefit from a loan," with the average annual gross amount of loan not exceeding 3,500 USD (OECD, 2015d, p.272). Yet, in a country such as the United States, where tuition fees are high and "some 62% or more of students benefit from a public loan during their tertiary studies," and the average gross amount held is higher than 4,000 USD, financing higher education is a crucial concern for reducing educational inequality (OECD, 2015d, p. 271-272). As Figure 5 demonstrates, United Kingdom, United States, Australia and New Zealand had the highest average tuition fees charged by public institutions for bachelor's and equivalent programmes in 2013-2014. As a result those countries also had the highest percentage of students who benefit from public loans and/or scholarships/grants. While Figure 5 does not make the distinction, as seen previously, the impact of higher education cost on educational inequality is significantly higher when this translates to increasing loan debt for students and their families.

Figure 5: Average tuition fees charged by public institutions related to the proportion of students who benefit from public loans and/or scholarships/grants at bachelor's and equivalent level (2013-14)

Chart B5.1. Average tuition fees charged by public institutions related to the proportion of students who benefit from public loans and/or scholarships/grants at bachelor's and equivalent level (2013-14)

For full-time national students, in USD converted using PPPs for GDP, academic year 2013/14



Note: Arrows show how the average tuition fees and the proportion of students who benefit from public support have changed since 1995 further to reforms.

1. Tuition fees refer to England only.
2. Reference year 2011-12.
3. Only includes the major Australian Government scholarships programmes. It excludes all scholarships provided by education institutions and the private sector.
4. Swiss data refer to the financial year 2013 and the academic year 2012/2013.
5. Tuition fees range from USD 215 to USD 715 for university programmes depending from the Ministry of Higher Education.

Sources: OECD. Tables B5.1a and B5.3. See Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

StatLink http://dx.doi.org/10.1787/888933284064

Source: Reproduced from OECD (2015d) *Education at a Glance 2015: OECD Indicators*, OECD Publishing.

In response to this concerning evidence, investing significantly in public expenditure on both secondary and tertiary education could broaden access and effectively reduce inequality (Piketty, 2014, p.306) (Rodriguez-Pose and Tselios, 2009, p.317). According to Piketty (2014, p.477), these investments would play a critical role in the long run in the United States and elsewhere. Recent trends in access to higher education have differed across regions with some countries broadening access such Greece, Korea, Baltics, and Sweden, and others becoming more restrictive such as Slovenia and Spain (Checchi, 2014, p.317).

Most of the Nordic countries have the most inclusive educational systems across the EU and OECD countries, which is made possible through substantial public financing (Atkinson, 2015, p.486). While there is no one perfect solution for achieving equality in education, it is possible to move towards more inclusive and equitable educational systems, particularly through policies directed at increasing public expenditure on secondary and tertiary education. As the OECD recommends, these policies include "assuring and improving quality and equity in tertiary education in a context of increased decentralisation and institutional autonomy; promoting internationalisation; and ensuring greater relevance to the needs of the labour market" (OECD, 2015a, p.68). Implementing these policies to build more inclusive education systems "will be a key issue for the social state in the twenty-first century" (Atkinson, 2015, p.486).

1.3 Implications for Education Policy

As seen in previous sections, educational inequality is multifaceted in its creation and complex in its reduction. Policies aimed at increasing public expenditure have been cited as predominant ways to increase secondary and tertiary educational attainment, however as the OECD's *Education Policy Outlook 2015: Making Reforms Happen* report cautions, "education reform can only be effective if policies are well implemented" (2015a, p.22). Approaching education reform requires careful and contextualised analysis, which should be followed closely by evaluations to ensure policy effectiveness. Currently, "OECD countries do not yet systematically include policy evaluation in the policymaking process" (OECD, 2015a, p.37).

While many policies need more analyses over time, a recently released report by the OECD identifies major trends that shape how education systems function, and presents education policy country snapshots for the 34 OECD member countries (OECD, 2015a, p.22). Considered to be "the first comprehensive systematic study of education policies at the international level," the report analyzes "450 education reforms that were adopted across OECD countries between 2008 and 2014" (OECD, 2015a, p.21, 19). While the report does not evaluate the impact of the policies, it offers potential areas of focus for education policy for EU and OECD countries. Currently, the three major sociodemographic, economic and technological trends shaping education policy across OECD countries are:

- The growing importance of international trade;
- More diverse communities;
- The digital society.

First, the *growing importance of international trade*, refers to the "need and an opportunity to develop new curricula to provide students with the skills required in a globalised economy", which could range from emphasizing language acquisition, to analytical and problem-solving skills in an international context. The second trend of *more diverse communities*, highlights the reality of our transnational labour force and high migration patterns in OECD. As the report notes, with migrants representing 11.5% of the population on average in OECD countries, "this diversity has a strong impact on schools" (OECD, 2015a, p.23). Current and future implications of migration on educational systems, range from accounting for the transferability of skills and qualifications, to equitable inclusion for immigrant students. Finally, the third trend of a *digital society,* calls for democratizing access to educational resources and enriching learning environments within and outside of the classroom via the Internet (OECD, 2015a, p.23).

The growing importance of international trade, increased diversity of communities, and the digital society, are each influential trends with implications for educational policy. The global trends outlined by the OECD align with previous sections on reducing income inequality through educational equity, yet they warrant a closer look at local and national dynamics. Specific areas identified for policy reform included: Preparing students for the future (29%) and School improvement (24%), followed by Equity and quality (16%), Evaluation and assessment (12%), Funding (12%) and Governance (9%) (OECD, 2015a, p.36). The next few sections will take a closer look at a selection of these policies: ensuring equity in education reform, early interventions in education policy, and funding reform for tertiary education.

Ensuring Equity for All

Thus far, this review had focused primarily on understanding and outlining the causes and consequences of educational inequality, however a key component for addressing disparities in educating is defining and using the term ‘equity,’ for a more holistic approach to policymaking in education. According to the OECD (2015a, p.31), “equity in education is achieved when personal or social circumstances, such as gender, ethnic origin or family background, do not hinder achieving educational potential (fairness) and all individuals reach at least a basic minimum level of skills (inclusion)”. Currently, about “one in five 15-year-old students in OECD countries does not acquire the minimum skills necessary to participate fully in today’s society” (OECD, 2015a, p.31). This suggests a significant disparity between general education reform and individual educational achievement and returns.

Evidence shows that “the highest-performing education systems are those that combine equity and quality,” however only 16% of recent reforms focused on equity and quality in education (OECD, 2015a, p.31, 19). Equity in education systems serves a dual purpose by addressing the broader effects of socio-economic inequalities on a large scale while also enabling all students, regardless of their background, to fully benefit from their education on an individual level (OECD, 2015a, p.31). The review previously touched on the transmission of intergenerational inequalities in a general sense, however in order to determine how equity affects particular groups of individuals within the education system, this section will highlight the impact of socio-economic and cultural factors on educational inequities and provide examples of reducing inequality through equity.

From 2003 to 2012, the proportion of immigrants in OECD countries increased from 8.7% to 11.5% (OECD, 2015a, p.45), with a total of permanent migration flows reaching 4 million (OECD, 2014, p.2). As a result, there is more diversity in schools, which could range from socio-economic, ethnic and racial, or gender diversity to religious and political diversity. The OECD found that in many countries “students with a disadvantaged socio-economic background or an immigrant background show higher risks of low performance” by about 21 score points compared to non-immigrant students (OECD, 2015a, p.45). However, the danger of applying this statement to all socio-economically disadvantaged or immigrant students is that it suggests poor academic performance because of their status. In reality, the finding reveals a gap in resources that could compensate for the advantages non-immigrant and wealthier students have, such as more language fluency, financial or social capital for instance. Evidence has shown that schools in London with a high proportion of immigrants are actually doing very well. According to a research report for the Department for Education, ethnic minorities from lower socio-economic groups have higher attainment than White working class pupils at age 16 (National Institute of Economic and Social Research, 2015, p.21).

How can education systems close this gap and achieve both equity and quality? Certain OECD countries reflect high levels of equity and high-performance in their educational systems such as Korea, Japan, the Netherlands, Finland, Canada, Estonia and Australia. One reason for this according to the OECD (2015a, p.23) is that "these systems manage to mitigate the impact of students' background on mathematics performance while delivering high-quality results". Similarly, socio-economic background did not negatively affect student performance on the PISA reading assessment as predicted (OECD, 2015b, p.46). Mitigating the impact of students' background can translate to a variety of policy options for each country depending on priorities in achieving equity. For some countries, diversity is an area of critical importance in education policy such as New Zealand's support for Māori and Pasifika populations, England's Pupil Premium and Chile's Law on Preferential Subsidies (OECD, 2015a, p.19). In other countries, immigrant educational support is a priority such as Canada's supplementary classes for immigrant students and Slovenia's efforts to integrate the Roma population through school training and community work (OECD, 2015a, p.55). Ensuring equitable schooling through targeted support could also be aimed at struggling students in general. In Finland, schools support students who are at risk of dropping out by assigning specially-trained teachers to them, and in France, Greece and Portugal where "targeted multidimensional interventions support groups of low socio-economic background schools" (OECD, 2015b, p.46).

While policies addressing equity in education often focus on individual educational support, as discussed throughout this review, many educational disparities occur outside of the classroom, and often, are a result of family or parental resources. As a result, a number of OECD countries have implemented education policies which focus on equity in education through reducing financial barriers to enrollment and providing financial benefits to increase retention rates. According to the OECD (2015b, p.45), examples of such policies include:

- Mexico's Prospera (former Oportunidades) which encourages the enrolment in school of children belonging to poorer families;
- Brazil's Bolsa Familia, which provides a conditional cash payment for children attending school between the third grade of primary school until age 16;
- France's periodic tax allowance for families with school-aged children;
- Ireland's school-clothing grant;

- Luxembourg's one-off cash "new year" school allowance per child;
- Family cash benefits or tax breaks such as in Austria, the Czech Republic, Germany, and Switzerland, if children stay in school longer.
- The Education Maintenance Allowance is designed to boost staying-on rates for children in low-income families in the UK (it was abolished in England by the Conservative-Liberal Democrat coalition government in 2010).

Although many policies have yet to be evaluated for their impact, the wide range of policies aimed at ensuring equity, inclusion and quality in education systems suggest that achieving equity is possible through appropriate incentives, resource allocation and targeted interventions.

Early Interventions in Education Policy

There exists a variety of policy directions to intervene at different stages in the education system in order to promote equity. The process begins with first tackling system-level policies that "hinder equity in education" such as "grade repetition, early tracking and student selection" in order to better ensure completion of at least upper secondary school (OECD, 2015a, p.30, 31).

While some policies, such as compulsory education expansion or financial support for higher education targeted at low income students, have a clear impact on reducing inequality, others may have more uncertain effects on inequality (Checchi *et al.,* 2014, p.311). For instance, "on average 12.4% of students across OECD countries repeated a grade in primary, lower secondary or upper secondary school (almost 1 in 3 in Belgium, Luxembourg and Portugal)," yet grade repetition is costly and does not necessarily lead to improved results (OECD, 2015a, p.31). Although the particular impact of such policies are debatable, multiple studies have found that overall, early intervention policies in education, such as early tracking, compulsory school reforms and early childhood education and care (ECEC), were considered to be the most influential for determining or at least understanding the causes of inequities in education systems (Checchi *et al.,* 2014; Brunello *et al*., 2009; OECD, 2015a).

First, a recent study conducted by Checchi *et al.* (2014), examined the relationships between educational policies, educational distributions and income inequality by using EU-SILC data on educational attainment and wage earnings with comparative student achievement data from the 1960s onwards. The study analyzed how "educational policies affect quality and quantity of education, and how these educational distributions relate to the level of income inequality" (Checchi *et al*., 2014, p.294). Policies ranged from "the structure and length of pre-primary education; length of compulsory education; school tracking;" to "student funding; university autonomy and selectivity" (Checchi *et al*., 2014, p.295). Early tracking in schools was reported to cause "larger skill inequalities between students of different origins than systems with comprehensive education" (Checchi *et al*., 2014, p.298). The danger with early tracking is that it predetermines a student's interests and skills, excluding them from other potential paths. Checchi *et al*. suggest that an alternate approach to tracking which would promote inclusion could be to encourage a strong vocational sector in the education system (Checchi *et al*., 2014 p.304).

The practice of tracking in secondary school is of particular concern because of the strong evidence on educational attainment and performance prospects (Dronkers and Korthals, 2015, p.58). The term “tracking” means that secondary school students are separated into different tracks, according to ability, with their own curriculum and requirements (Dronkers and Korthals, 2015, p.10). Schools select students for the different tracks based on a variety of criteria including prior academic performance or parental background for instance (Dronkers and Korthals, 2015, p.10). According to the OECD (2012, p.58), tracking “exacerbates differences in learning between students” and has an important “impact on educational inequities” and even “educational failure” because the teaching environment could be less stimulating in certain tracks which affects student outcomes. Lower level tracks or streams can create “a vicious cycle in the expectations of teachers and students” since students enter the track with lower scores and both teachers and students lower their expectations accordingly (OECD, 2012, p.58). In addition, there is fairly little mobility between tracks, which reflects larger inequities for future educational and earnings prospects (OECD, 2012, p.59).

Tracking is a common practice in Belgium, Germany, Poland and the Netherlands (Dronkers and Korthals, 2015, p.5). Germany and Poland have both recently implemented new strategies towards tracking to mitigate for the risks of inequities. In Germany, some states have postponed tracking to later stages or from the age of 10 to 12, merging the two lower level tracks - *the Realschule and the Hauptschule,* and making tracks more equivalent to improve access to upper secondary school (OECD, 2012, p.59). Poland is an example of a country that has successfully reformed its system of tracking in secondary education. In 1999, Poland replaced its prior system of eight years of primary school followed by four-year secondary or three-year vocational school, to a shortened primary school career of 6 years, followed by 3 years academic school and 2 years vocational education (OECD, 2012, p.62). This change meant that tracking was deferred by a year until students were 15 years old, which was proven to be successful in raising student performance, in particular for those in vocational tracks (OECD, 2012, p.60) and substantially improving performance on international assessments (OECD, 2012, p.62).

While as the following table (Table 1) lists, many countries such as Austria, Belgium, and Hungary begin tracking students starting at ages 10-12, other countries such as Denmark, Finland, and United Kingdom do not track students until age 16 (OECD, 2012). While there is no specific age that has been found to be ideal for tracking, reducing early tracking and reassessing the number of school types or educational programming options available for secondary students can help reduce educational inequalities due to tracking.

Table 1: Types of differentiation in lower secondary across countries

Table 2.2. Types of differentiation in lower secondary across countries

	Age of first selection	Number of school types or distinct educational programmes available to 15-year-old students	Percentage of students in schools where students' record of academic performance are considered for admittance (1)	Percentage of students in schools that group students by ability (1)
Australia	16	1	60	95
Austria	10	4	74	46
Belgium	12	4	52	46
Canada	16	1	53	90
Chile	16	1	70	65
Czech Republic	11	5	69	69
Denmark	16	1	24	50
Estonia	15	1	73	56
Finland	16	1	18	58
France	16	1	w	w
Germany	10	4	77	51
Greece	15	2	27	15
Hungary	11	3	90	68
Iceland	16	1	8	75
Ireland	15	4	24	96
Israel	15	2	78	97
Italy	14	3	55	56
Japan	15	2	99	67
Korea	14	3	61	90
Luxembourg	13	4	95	71
Mexico	15	3	59	69
Netherlands	12	7	97	80
New Zealand	16	1	43	98
Norway	16	1	7	73
Poland	16	1	49	46
Portugal	15	3	16	32
Slovak Republic	11	5	73	73
Slovenia	14	3	68	55
Spain	16	1	11	60
Sweden	16	1	5	74
Switzerland	12	4	70	75
Turkey	11	3	66	62
United Kingdom	16	1	20	99
United States	16	1	45	91

1. (1) refers to schools where principals indicated "always" or "sometimes" and may include responses from principals in upper secondary schools. Data not collected is referred as "w".

Source: OECD (2010b), *PISA 2009 Results: What Makes a School Successful?* Vol. 4, OECD, Paris.

Source: Reproduced from OECD (2012). *Equity and Quality in Education: Supporting Disadvantaged Students and Schools*, OECD Publishing.

Next, Brunello *et al.* (2009) analyze data on changes to minimum school leaving age or *compulsory school policies*, from twelve European countries over a period of time in order to evaluate the effects of the quantity of education on wage distribution (Brunello *et al*., 2009, p.536). The study found that at first glance, "the effect of compulsory school reforms on educational attainment [were] broadly similar across European countries," however the length of compulsory school did affect wage levels significantly between countries. Evidence from some countries suggested there was no effect while in other countries "returns to longer compulsory schooling were as high as 15%–20%" (Brunello *et al*., 2009, p.526). The study's three main findings were:

- Additional schooling reduces conditional wage dispersion;

- Compulsory school reforms affect mainly the individuals at the lower end of the distribution of educational attainment;
- Education and ability are substitutes in the generation of earnings.

These findings introduce strong evidence in favor of implementing early intervention strategies in education reform. As the OECD argues, "investing early on and in good quality education up to completion of secondary education is among the most profitable policies" (OECD, 2015a, p.31).

Along with compulsory schooling reform, non-compulsory policies such as Early Childhood Education and Care (ECEC) for children ages 0 to about 7 across OECD countries can increase equality of opportunity within the early stages of education. ECEC for instance, has been shown to increase academic performance amongst participants and improve child well-being, particularly for children from disadvantaged backgrounds. ECEC has also improved a wide range of equitable socio-economic returns including: reduction of poverty, increased intergenerational social mobility, increased female labour market participation, and better social and economic development, according to the OECD (2015a, p.31). For instance, Australia and Poland have focused on increasing "enrolment in, and improving the quality of, early childhood education and care" (OECD, 2015a, p.19). In 2012, Turkey implemented an ECEC policy called 4+4+4, which increased the length of education from 8 to 12 years and aims to restructure the system into primary, lower and upper secondary education (OECD, 2015a, p.31).

Investing in Higher Education: Broadening Access and Achievement through Funding

Beyond investing early in education, education policy must carry through to the tertiary level, where the level of educational attainment highly affects wage inequality. Investing in education is crucial for reversing inequality across Europe and OECD countries and in particular, higher education is "one of the most important elements to foster economic growth in the long run," (OECD, 2015b, p.44). The OECD reports (2015a, p.32) that "today more than one-third of young adults complete tertiary-type A education in OECD countries," which reflects a need to better address "challenges of quality, equity, internationalisation, adequate funding and implementation of policies targeted at this level of education". Funding is a key component for ensuring educational attainment at the tertiary level and encompasses not only monetary values of investment in tertiary education, but also the efficient distribution of resources – "according to needs, priorities and capacities" (OECD, 2015a, p.32). Providing funding for tertiary school requires sustainable funding reform.

Policies targeting funding vary from comprehensive system resources (public and private funding) such as the United States' "Race to the Top" and Germany's "Investing in the Future" to targeted policies at either the institutional level such as Mexico's "Dignified Schools" programme and Belgium's school-funding reforms or the individual student level. Given the focus on equity in education and addressing individual and group educational attainment disparities, the following are examples of recent student-centred funding reforms in OECD member countries from 2008 to 2014 (OECDa, 2015):

- Canada: Scholarships for innovation and research (2013) for tertiary students
- Chile: Scholarship for tertiary education and subsidies for private student loans
- Estonia: Higher education reforms through means-tested financial support for students, free education (2013)
- Finland: Student financial aid reform (2014)
- Germany: Student Aid Programme (BAföG) (amended 2010)
- Hungary: Tied Student Loan (2012)
- Ireland: Higher education reforms including a gradual increase in student tuition fees in tertiary (2011-15) with grants; Third Level Bursary Scheme - scholarship scheme (2012)
- Japan: Scholarship loan programme (2012)
- Mexico: Cash transfer programmes for upper secondary and tertiary disadvantaged students (2008-12)
- New Zealand: Aspire Scholarship
- Portugal: Graduate Studies Grant Programme (2013)
- Turkey: Funding support for foreign students (2012)
- United States: Increase of Federal Pell Grant (2008); American Opportunity Tax Credit (2009); Model financial aid disclosure form (2011); College Scorecard (2013); Pay as You Earn Plan (2013)

Country Snapshot: Greece

Given the current economic crisis, educational attainment in the Greek context has become a major issue of concern for Greece and the European Union. According to the BBC (2015), "average incomes [are] down by a third and unemployment rising to over 25%". Historically, Greece's higher education system has been very unequal and costly. Due to expensive entrance exams for tertiary education, "Greek households spend considerable sums of money in order to prepare their children to succeed" (Antoninis and Tsakloglou, 2001, p.219). As a result, many students from lower socio-economic backgrounds are excluded from access to higher education. According to the BBC, "in 2008, the year before the crisis, families with children in upper secondary education spent more than 950m euros (£704m) on these lessons, which represented nearly 20% of these households' expenditure - more than any other European country" (BBC, 2015). Such costly expenses exclude poorer students from receiving more tuition lessons and in 2005, "students from the wealthiest families in Greece received nearly four times more private tuition than the poorest". Over the past five years, some 200,000 students emigrated to universities abroad, which is considered to be a " 'catastrophic loss of human capital' that could make Greece's economic recovery more difficult in future" (BBC, 2015). Clearly education reform is needed, not only for improving equality of opportunity in Greece, but also for addressing the spillover effect of educational inequality across EU States.

According to a 2001 study by Antoninis and Tsakloglou (p.218), "the most effective policy for the improvement of the distributional performance of public tertiary education in Greece is likely to be the improvement of the progressivity of public post-compulsory secondary education". Poorer students were found to attend technical school more often than general education, however those who do participate in the entrance examinations are "less likely to succeed than students from rich households" (Antoninis and Tsakloglou, 2001, p.219). This leads to both educational attainment and wage earning disparities, perpetuating systemic socio-economic inequality in Greece. In order to counteract this trend, Antoninis and Tsakloglou (2001, p.219) recommend that education policy address funding reforms to incentivize and enable poorer students to continue on to post-secondary school either through grants or free supplementary tuition for public schools.

As briefly mentioned in the list of student-centred funding reforms, a number of OECD countries have been working on improving students' access to tertiary education through providing grants and scholarships. More specifically, recent efforts made by Chile, Ireland, and Slovenia reflect how education reforms, which focus on improving access and equity through both structural funding policies and a student-centred funding approach are important for mitigating the high tuition costs of tertiary education for lower income students. In 2012, in an effort to address inequalities in higher education, Chile implemented its *Scholarship for Tertiary Education Programme*, which was aimed at expanding scholarships for those in the lowest 60% of the household income distribution to cover either full or partial tuition costs (OECD, 2015a, p.117). Similarly, in 2012 Ireland also introduced a new scholarship system called the *Third Level Bursary Scheme* to improve access to higher education for students of lower economic status by awarding regional scholarships based on upper secondary school results (OECD, 2015a, p.117). Given that, “tuition fees of tertiary institutions [in Ireland] have been increased and are expected to reach EUR 3,000 by 2015”, providing additional support to improve access and equity are crucial (OECD, 2015a, p.117). On a multidimensional level, in 2002 Slovenia implemented a new HEI financing system for higher education which has shown several strengths in terms of implementing holistic funding reforms according to the OECD (2015a, p.286) through:

- providing clear rules and transparency of subsidy allocation from the state budget
- motivating HEIs to increase teaching and research activities
- specifying and providing targeted support for development
- focusing on access to higher education through introducing social scholarships
- incentivising students through motivation scholarships.

As a result, the variety of bursary schemes and scholarship options that OECD countries have explored and implemented, from Ireland’s *Third Level Bursary Scheme* and Chile’s *Scholarship for Tertiary Education Programme*, to Slovenia’s HEI financial restructuring for higher education and a variety of others - as listed previously in this section - show the potential for further reducing inequalities in access to higher education and improving equity in education systems across OECD countries.

1.4 Concluding Thoughts and Recommendations

The first part of this section highlighted the importance of investing in education reform in our globalised world in which the ‘race’ between education and technology increases the demand for highly skilled workers and the impact of intergenerational wealth continues to act as a strong predictor for social mobility. Authors, including Piketty (2014), Atkinson (2014), as well as Rodriguez-Pose and Tselios (2009), have all emphasized the close relationship between income inequality as a result and detriment of educational inequality and low levels of attainment.

The next section analysed the differences in educational attainment and public expenditure, and showed that early intervention policies, such as ECEC, in primary and secondary schools were key for ensuring equity, as well as moving away from early tracking policies, along with student-centred funding reform at the tertiary level, can help increase access to higher education.

The wide range of potential educational policy interventions demonstrate that not all policies operate the same in each education system. As a result, in order to have a significant impact on reducing inequality, education policies aimed at broadening access through more equitable financing for tertiary education and vocational training, as well as inclusive curriculae and educational programming, can significantly reduce educational inequality and have a major impact on the future of income inequality overall. In particular, as shown throughout this review, across national education systems, policies which focus on equity, early interventions in school, and student-centered funding reforms at the secondary and tertiary level have been found to be the most successful and promising policies for reducing educational and wage inequality. This review recommends further research and analysis to specify and implement targeted policies in relation to national and regional contexts.

Addressing educational inequalities is not only important for 'raising the floor' in terms of within country educational attainment levels, but also in terms of reducing the impact of other forces that interfere with education as the potential 'equalizer' and key factor for social mobility. From a range of intergenerational factors which affect a person's economic, social and cultural capital, to the increasing costs of education, external factors interfere just as much with a person's attainment level, employment opportunities and social mobility prospects as do the specifics of education policies. As a result, policy makers should take into account how external dynamics must be considered within testing and implementing national and local education strategies at all levels of schooling.

Part 2: Labour market institutions and pay determination

Labour market institutions and pay determination

The main source of household income is generated in the labour market not just during individuals' working lives, but as the accumulation of savings and pensions are principally generated from labour income it also has a strong influence on determining income during retirement. It is therefore not surprising that a root cause of market income inequality is inequality in income from employment. Inequality in employment income is driven by differences in rates of pay, hours worked, and the distribution of work across households.

Wage rates are set in a variety of ways with considerable variation across countries and within countries between different professions, occupations and industries. The practices have evolved over time with pay sometimes determined at an individual level between a single worker and an employer according to market forces driven by demand and supply, or can be set at an national (aggregate) level according to wage bargaining agreements made by social partners. Different factors come into play for private sector employees and public sector employees (for whom public finances have a larger part to play in determining rates of pay). Wage rates are also affected by non-wage costs of employment (social insurance contributions, labour taxes, pension contributions, fringe benefits such as health insurance, housing subsidies, transport, etc).

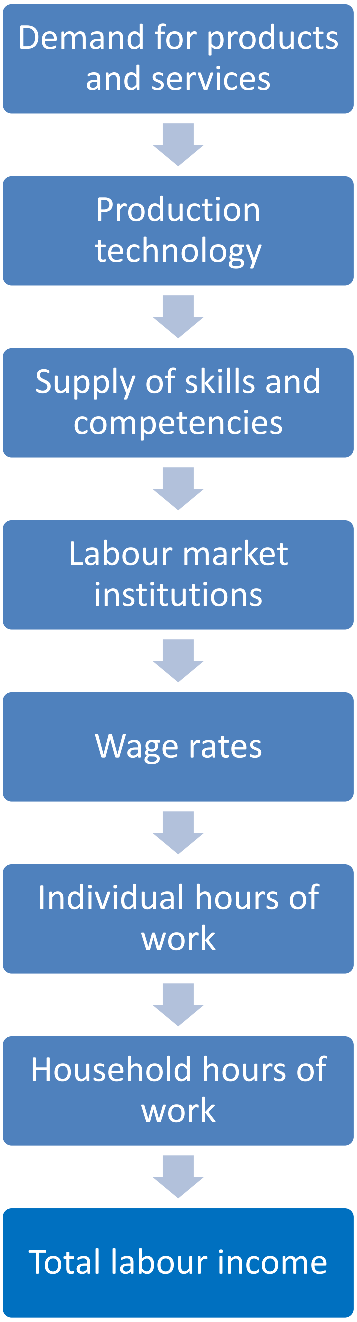
Wage setting systems contribute towards differential rates of pay and therefore have a direct impact on earnings inequality. Collective wage bargaining systems have been shown to be associated with lower earnings inequality but where coverage is low collective wage setting systems can increase pay inequality between 'insiders' and 'outsiders'. However, the extent to which collective wage setting can keep inequality down may be temporary as in the long-run market forces can play a greater role. Wage setting may be limited to setting pay rates of the lowest paid workers as is the case with minimum wages. Minimum wages, where they are generous enough, help to reduce inequality at the lower end of the wage distribution. Some evidence suggests that while minimum wages may only have a small impact on overall inequality, they are an important part of a package of measures that can help to reduce inequality.

A feature of recent inequality trends in some countries has been the increased concentration of earnings, income and wealth among a small group of people. Different cultures of executive pay setting and norms can play an important role in terms of keeping inequality down, or conversely exacerbate inequality.

2.1 Introduction to labour market institutions and inequality

The extent to which changes in wage inequality have driven changes in income inequality varies between countries. A complex mapping exists between individual gross hourly rates of pay and household net disposable income inequality; driven by employment rates, the distribution of hours of work, the distribution of work across households and the distribution of income from other sources. The literatures on earnings inequality and household income inequality have largely developed in parallel with only a limited number of attempts to bring the two together (see, for example, Salverda and Haas, 2014). This is partly because labour economists have tended to focus on earnings inequality while researchers with a wider knowledge of social policy and the welfare state (in particular cash transfers) have tended to focus on income inequality. In Figure 2 we showed how labour income contributes to net household disposable income, while Figure 6 provides a bit more detail on the determination of labour income. In this section of the review we focus on the role of institutions in wage setting. This rather simple stylised linear flow diagram does not illustrate the various feedback mechanisms (for example wage rates can impact on the supply of labour hours), but provides a useful graphical representation that can highlight where policies and labour market institutions impact on wage rates.

Figure 6: Wage determination to total household labour income



The pattern of inequality trends and the drivers behind changes in inequality vary across country and across time (Nolan *et al*., 2014). One factor that has been picked up by a number of scholars is variation in the concentration of pay at the top of the wage and income distributions. For France, the share of the top wage decile in the total wage bill is around 25% (similar to the share received by the least well paid 50% of workers) (6-7% for the top centile), and Piketty concludes that in France changes in income inequality (1910-2010) were driven by changes in the distribution of capital income (p.273) rather than wages. This is in stark contrast to the US where Piketty shows that the rise in inequality has largely resulted from substantial increases in wage inequality after 1970 (p.298) with growing inequality in capital income accounting for around one-third of the increase in income inequality (in 2010 the share of the top wage decile in the total wage bill was 35%; increasing from 25% in the 1960s). Piketty singles out an emergence of 'supersalaries' among top managers of large firms, who he refers to as 'supermanagers', as a key driver of increasing wage inequality in the US.

There are a number of points within the process of income inequality generation that labour market institutions play a critical role. Here we focus on institutions involved in the setting and regulation of wage rates. This covers the setting of the lowest wages (minimum wages and wage floors), more general wage setting (collective wage bargaining systems and the role of trade unions) and setting of the highest wages (executive pay agreements and controls on pay and bonuses). These policies can have a direct impact on the distribution of hourly wages, and contribute to household net disposable income inequality.

Wage regulating labour market institutions in capitalist economies face market generated 'shadow' wages. These market generated shadow wages are shaped by demand for goods and services, the supply of skills and competencies (which may be located in a remote country or limited to very local labour markets), technologies, the cost of capital, and the extent to which components of goods and services can be produced and supplied remotely.

For a given demand for goods and services, production technologies and supply of skills and competencies in the workforce, labour market institutions can have a direct impact on the difference between market generated shadow wage rates and final gross rates of pay. The coverage of collective wage bargaining and setting agreements can directly impact on the distribution of final gross hourly rates of pay through influence on the pay of workers within sectors (public/private; industrial sectors), for occupational groups (nurses; care assistance; drivers, etc), for trainees and for the workforce as a whole. Such agreements can reach beyond workers directly covered through a system of voluntary adherence to agreed rates of pay by employers with workers not directly covered, or through their influence on the supply of workers willing to work for lower rates.

These agreements typically include wage floors, alternatively wage floors can be set through minimum wage regulation. Minimum wages can vary across geographical areas, sectors or for different types of workers (young workers or trainees, for example) or a single rate can cover all workers. Minimum wages affect the lower tail of the wage distribution and can impact on wage inequality through compressing the lower portion of the wage distribution.

They can also have a ripple effect if wage differentials are maintained (in whole or in part). They can also have a positive effect on production technologies and training if the higher rates of pay force employers to increase the productive output of their workers. If minimum wages increase unemployment or lead to a reduction in hours worked then potentially minimum wages can increase income inequality.

At the other end of the wage spectrum pay controls on the highest paid workers can help to limit inequality driven by very high rates of pay for managers, administrators, executives, CEOs or high value bonuses; particularly those paid to workers in the financial sector.

Some economists have raised concerns about the extent to which wage-setting outside the market will impact on employment and efficiency. "Centralized wage-setting mechanisms which reduce wage variation tend to limit firms' flexibility in responding to differences in market conditions across industries or geographical areas" (Blau and Kahn, 2009, p.178). In contrast, others have argued that due to imbalances in power between workers and employers some workers (in particular the low-skilled) will be paid less than the value of their productivity (Manning, 2003) while others are able to claim a larger share of the wage bill relative to their productive contribution.

2.2 Wage bargaining institutions and wage setting

As noted in Part 1 of this evidence review, Piketty outlines the widely accepted theory that variation in wage inequality results from a 'race between education and technology' (p.304). According to this theory, if skill-biased technological change advances at a faster pace than up-skilling of the workforce (through education and training) leading to excess demand for skilled workers, then wage inequality between skilled and unskilled workers will increase in the short-run. The theory assumes that the labour market is perfectly competitive and when demand and supply are in equilibrium, workers are paid according to their marginal productivity. However, as Piketty points out, in reality this theory doesn't fit the facts of rising wage inequality or of wage setting in the real world. This simple economic model of wage setting does not take into account differences in the power of different employers and workers, barriers to entry (both to professions and education and training programmes), imperfect information and the role of institutions. While the demand for and supply of skills clearly play an important role in the setting of wages, the influence of power, barriers and institutions have played a large role in shaping wage inequality trends in rich countries since the middle of the 20th Century.

Atkinson (2015) concludes that "To a considerable degree the market outcome [pay] is currently the result of the bargaining power of different participants" (p.147). He states that "If people take zero-hours jobs with no guarantee of pay, it is because they are powerless in the labour market" (p.147). Atkinson believes that in order to make progress towards less inequality a society-wide approach to earnings determination is required.

Stiglitz (2012) describes the rise of excessive inequality in some advanced industrial countries as an interlinkage of political and economic systems "the inequality is cause and consequence of the failure of the political system, and it contributes to the instability of our economic system, which in turn contributes to increased inequality" (page xi, Preface).

Unions have played an important role in terms of re-dressing the asymmetry of power between individual workers and large employers. They achieve this by working as a collective, representing large groups of employees in negotiations with employers over pay and working conditions, as well as defending the rights of workers in disputes over breaches in employment regulations, contracts and laws. Consequently, unions hold more power than workers negotiating on their own. Disagreements and disputes can lead to withdrawal of labour (strikes) which can cause considerable disruption (and costs) on a large scale while such action is largely ineffective at an individual level. There is, therefore, a greater incentive for employers to improve pay and conditions for a unionised workforce. The fact that any pay settlement applies to all represented workers rather than a single worker can reduce inequality.

As Visser and Checchi (2009) note in their review of inequality and unions for the *Oxford Handbook of Inequality*, for a long time unions were assumed to increase inequality in countries where union coverage was incomplete by creating a wage differential between union and non-union sectors (p.232). Freeman and Medoff (1984) demonstrated that overall unions in the US had an equalizing effect on wages through unions reducing wage inequality within union sectors which more than off-set any increase in inequality between sectors. Since then, numerous cross-country studies have shown the existence of a positive relationship between union coverage and compression of the wage distribution (See, for example, Card *et al.*, 2004, for the US, UK and Canada). Blau and Kahn find a negative association between union presence and wage inequality across 25 countries with higher bargaining coverage and minimum wage legislation the most important factors explaining this association. Centralisation of wage bargaining appears to be an important explanatory factor, although they find some evidence that the relationship has weakened over time (Blau and Kahn, 2012, p.241).

Other research has shown that changes in unionization is associated with changes in wage inequality. Gosling and Machin (1995) found that the decline in unionisation in the UK over the 1980s accounted for 15% of the increase in wage inequality. However, Gosling and Lemieux (2004), comparing the US and the UK, show that the effect of de-unionization has been to increase male wage inequality but has had little effect on female wage inequality. In fact they estimate that de-unionization can account for 34 per cent of the increase in male wage inequality in the UK between 1983 and 1998, and 41 per cent of the increase in the US over the same period. They find little effect for women, for whom the decline in the unionization rate is much smaller. They conclude that the convergence in the unionization rate between the US and the UK explains about one-third of the convergence in male wage inequality. Their conclusion is that wage inequality increased fastest for US women during the 1980s because of the decline in the minimum wage (rather than unions); reflecting the greater incidence in low pay among women and lower rates of unionization. Over the 1980s and 1990s inequality increased for men faster in the UK because of the decline in unionization.

Italy

Like many European countries, Italy has experienced large falls in unionisation since the 1980s but a system of wage indexation (*Scala Mobile*) initially limited the impact on the distribution of wages. This system meant that there was an automatic extension of centrally set wages to non-unionised workers. Manacorda (2004) estimates that the *Scala Mobile* effectively neutralised market forces on wages and prevented wage inequality in Italy from increasing to US levels. Checchi and Pagini (2004) describe how this system combined a nationwide wage indexation with a system of national contracts signed for each wage sector, some sectorial agreements and a limited number of big companies signing workplace agreements (p.1). However, the wage indexation mechanism was abolished in 1993 and this coincided with the start of increasing wage inequality. Under the reformed system there exists two-tiers of wage bargaining with national contracts, which are expected to preserve the purchasing power of wages, combined with decentralised wage bargaining at the firm level, which should be devoted to rent-sharing where a surplus is available (Checchi and Pagini, 2005, p.1).

Stiglitz notes that in the US "unions have been seen as a source of rigidity and thus of labour market inefficiency. This has undermined support for unions both inside and outside of politics" (p.65). This is not exclusive to the US, unions have been in decline in many countries including the UK where a bitter struggle between unions and politicians occured in the 1970s and 1980s. Arguably unions in some countries were slow to adapt to sectoral change and increases in female labour force participation but in other countries unions have been more successful at adapting to change and remaining relevant. An important difference between countries is the role unions play in administering unemployment benefit and the relationship between unions and politicians.

In the so-called 'Ghent system' the main responsibility for unemployment benefits is held by trade unions. Typically unemployment benefits are earnings related. Although unions hold unemployment funds they are generally regulated and in some cases subsidised by governments. In Denmark, Finland, Sweden and Iceland the majority of unemployment benefit is administered under this system. The Ghent system also operates in Belgium but the government also plays a significant role. Union membership rates tend to be higher in these countries as a consequence.

Stiglitz suggests that strengthening unions is an important policy for tackling inequality but there is no blueprint for how to build strong and successful unions and broader social partnerships in countries where they have been in long term decline. An important aspect appears to be building partnerships and avoiding conflict but this requires a spirit of co-operation on all sides; not easy where different parties are seeking to secure opposing outcomes.

Atkinson (2015) suggests the establishment of a Social and Economic Council where all stakeholders would be involved in agreeing a national pay policy "consisting of two elements: a statutory minimum wage and a code of practice for pay above the minimum" (p.148; proposal 4).

2.3 Minimum wages and wage floors

The majority of OECD countries now have some form of statutory minimum wage (OECD, 2015e), with Germany becoming one of the latest countries to introduce a minimum wage in January 2015. Bosch (2013; 2015) describes "The Bumpy Road to a National Minimum Wage in Germany" which highlights how the erosion of collective wage bargaining, in many countries including Germany, meant that trade unions were no longer able to set effective wage floors. Employers took advantage of this void and the incidence of low pay increased along with the dispersion of pay in the lower half of the wage distribution. The response by many governments has been to introduce statutory minimum wages.

Although minimum wages are introduced to protect the pay of the lowest paid workers, and therefore to effectively compress the lower tail of the wage distribution, most impact assessments have focused on employment effects. This is because the greatest concern of policy makers introducing or uprating minimum wages is that they will lead to an increase in unemployment or a fall in hours worked. Simple economic models of the labour market predict that an increase in the wage rate of low paid workers will lead to a fall in demand and consequently an increase in unemployment. However, these simple economic models are based on assumptions about the labour market which don't necessarily hold in practice.

Research on minimum wages in rich countries has frequently found that minimum wages have been successfully introduced without significant negative effects on employment. Extensive reviews of this literature can be found in Card and Krueger (1995) and Neumark and Wascher (2007). This can be seen as evidence that there is a tendency for workers at the bottom end of the labour market to be paid at rates less than the value of their productivity when wages are not regulated, challenging simple economic models of the labour market and wage setting. Manning (2003) puts forward a model of monopsony where workers (particularly the low skilled) hold a weak bargaining position relative to their employers who hold some monopoly power. This imbalance in power enables employers to pay workers below the value of their marginal product and explains how a minimum wage can increase pay without having a negative impact on employment.

Minimum wages create a (legal) wage floor and therefore compress the lower end of the wage distribution by truncating the lower tail. Simple cross-country analysis by the OECD in

1998 found that the generosity of minimum wages measured in terms of 'bite' – minimum wage rate as a percentage of median full-time earnings – is negatively correlated with earnings dispersion. Piketty describes the role of minimum wages in France and the US and the association between changes in the generosity of minimum wages and the evolution of wage inequality in these two countries. He concludes that during periods when minimum wages are more generous wage inequality is lower and when minimum wages are weaker wage inequality is higher; at least in the lower half of the wage distribution (2014, pp.308-310).

However, more detailed statistical analysis of the relationship between minimum wage rates and wage inequality within countries shows mixed results. There are a number of reasons why this might be the case and these are to do with:

- The share of workers who directly experience a pay increase from the introduction or uprating of a minimum wage;
- The size of any direct pay increase;
- Whether or not there are 'spill-over' effects, sometimes called 'ripple' effects – i.e. the indirect effect on the pay of higher paid workers above the minimum wage rate;
- The time horizon over which any assessment is made – short, medium and long run effects can vary;
- The impact on education and training decisions by workers and firms;
- The impact on technological change;
- Statistical methods used in any assessment, particularly in relation to assumptions about counterfactual wage rates and wage distributions.

In general minimum wages are introduced at cautious rates and therefore only a small share of workers are directly covered by them. This limits the extent to which minimum wages can reduce wage inequality but also limits potential negative employment effects. For example, in the UK the National Minimum Wage (NMW) directly increased the pay of around 6% of employees and therefore common measures of inequality in the lower tail of the distribution such as the ratio of the median to the 10th percentile (50:10 ratio) will be left unchanged unless there are spill-over effects. Dickens and Manning (2004) found no effect on earnings at the 10th percentile for the first three years after the NMW was introduced in 1999 and no detectable spill-over effects.

The degree of spill-over effects will be largely determined by the power of workers originally paid above the minimum wage rate being able to wholly or partially maintain pay differential after the introduction or uprating of a minimum wage. Spill-over effects can also be affected by the extent to which firms substitute slightly higher skilled workers for lower skilled minimum wage workers leading to an increase in demand and an increase in their wage rates. Firms may re-organise production to increase productivity of minimum wage workers which can lead to an increase in the productivity and wages of slightly higher skilled workers (Stewart, 2012). There is also evidence that spill-over effects are greater in countries with widespread adherence to collective pay agreements (Grimshaw and Bosch, 2013) where workers are in a stronger position to maintain pay differentials. In this case, minimum wages and collective wage bargaining act in a complementary fashion leading to a reduction in inequality.

Recent assessments of the impact of the UK NMW on the distribution of earnings have been able to cover longer time periods of 10 years or more since it was introduced, and this allows analysts to exploit the fact that the bite of the minimum wage has varied year to year. Dolton *et al*. (2012) use variation in the bite (value of the minimum wage relative to median pay) both across local labour markets and over time to evaluate the impact of the NMW on inequality. They find a negative association between the bite of the NMW and wage inequality in the lower tail of the distribution (a higher NMW bite is associated with lower wage inequality). Butcher *et al*. (2012) also examine the impact of the NMW on wage inequality in the UK 1998-2010 and conclude that the NMW can explain a "sizeable part of the evolution of wage inequality in the bottom half of the distribution" over this period. They argue that the empirical estimates are consistent with the NMW having a positive impact on wage inequality; with the greatest reductions in inequality found in low-wage segments of the labour market (women, youth, low-wage regions). They also find evidence of spill-over effects as high as the 25th percentile of the wage distribution. These are much greater spill-over effects than have been estimated in previous studies for the UK which had typically found very little, if any, effects (Dickens and Manning 2004a; 2004b). However, Stewart (2012b) analyses a similar time period but finds no evidence of spill-over effects and concludes that the absence of spill-over effects means that the minimum wage could not have contributed to trends in wage inequality in the lower tail of the UK wage distribution. The reasons for these conflicting findings are the different assumptions made about counterfactual wage distributions and the precise timeframe over which the assessments have been made. The bite of the UK NMW was initially low but increased significantly in 2003 so early assessment may not have picked up any spill-over effects and earlier evaluations may not have had sufficient time series to allow for time-lags (it may take some time for spill-overs to occur).

Findings from US studies are more clear-cut although there is some disagreement about the scale of effects. In general they conclude that the fall in the real value of the federal minimum wage in the 1980s drove the rise in wage inequality in the lower tail of the wage distribution over this decade (diNardo, Fortin and Lemieux, 1996; Lee, 1999; Teulings 2003). Falling minimum wage rates 'spilled over' to the pay of workers earning above the minimum rate and increased the dispersion of pay in the lower tail of the wage distribution.

Very few studies have examined the impact of minimum wages on wage inequality among different groups of workers – particularly among those most likely to be affected by the minimum wage, but a study by Gosling and Lemieux (2004) finds that the introduction of the UK NMW reduced wage inequality among women, pulling the UK female wage inequality below that observed for males. This suggests that aggregate effects, while important, may mask important differences between different groups of workers.

Raising wages through a minimum wage can force employers to make better productive use of their workers either in terms of complementary technology or simply taking advantage of workers' skills which were previously underutilised. They can also have a positive impact on employment by increasing labour supply and reducing employers' recruitment and retention costs. In the medium to long run wage floors can help to move economies to higher-skill, higher-productivity, higher-wage economies than would exist if the market was left unfettered in terms of wage setting. However, there is clearly a limit to the level at which minimum wages can be set without having negative impacts on employment.

While it is intuitive to assume that minimum wages are most likely to impact on the distribution of wages in the lower half of the wage distribution, Bárány (2016) demonstrates that in a general equilibrium model with endogenous skill choice, minimum wages can also have a significant impact on the top end of the distribution as well. She outlines a model in which minimum wages affect skill prices changing the incentives that people face when making educational decisions. The impact of falling minimum wages on increasing wage inequality is assessed in a general equilibrium model where both the supply of high-skilled workers and the direction of technical change is endogenous. In this model, a fall in the minimum wage leads to an increase in the wage premium for high skill and therefore an increase in the incentive to acquire education for high 'ability' workers but also a fall in the minimum wage makes it easier for low skilled workers to find work and thus reduces the role of education for lower 'ability' workers. The result is that a fall in the minimum wage can lead to an increase in wages at the top end of the distribution. Conversely, the implication is that the introduction or raising of a minimum wage can potentially compress the top as well as the bottom of the wage distribution.

The review of the academic literature finds evidence that minimum wages can lower wage inequality but very few studies have assessed whether or not minimum wages reduce household income inequality. In the Second Evidence Review in this series (McKnight, Stewart, Mohun Himmelweit and Palillo, 2016) we show that not all low paid workers are living in low income households and there is some evidence that the concentration of low paid workers in low income households has fallen in some countries and certainly varies between countries. Metcalf (1999) states that the main beneficiaries of minimum wages are typically in the middle of the income distribution as non-working households tend to be concentrated at the bottom of the distribution (pensioners, unemployed and economically inactive). This limits the extent to which minimum wages can reduce income inequality by increasing the incomes of low income households. However, when the sample is restricted to working households, Metcalf shows that the introduction of the UK NMW was most beneficial to households at the bottom of the distribution and reduced income inequality among working households (Metcalf, 2007). Volscho (2005) shows that state minimum wages in the US reduced family income inequality (1960-2000).

An important factor when considering the mapping between minimum wages and household income inequality is that minimum wages and in-work benefit systems are highly inter-connected. A rise in the minimum wage can increase a household's income from employment but this can simply lead to a fall in in-work benefit entitlement and little overall change in household income. It is, therefore, not a simple task to estimate the impact of changes in minimum wages on income inequality. The relationship between the minimum wage and in-work benefit entitlement has been the focus of a large debate in the UK. In 2015 the UK government announced relatively large increases in the minimum wage (with the aim of reaching 60% of median pay by 2020) alongside considerable cuts in the generosity of in-work benefits (tax credits). The objective was to shift the cost of low paying work from public expenditure (topping up low wages through cash transfers) back to employers. Analysis of the likely impact of these announced reforms demonstrated that low paid workers likely to experience a pay increase were relatively evenly distributed across the household income distribution (a change since Metcalf made his initial assessment in 1999) but in-work benefit recipients were concentrated at the bottom (as you would expect given that these benefits are means-tested). The result would have been to make low income households worse-off overall (Browne, 2015; D'Arcy *et al.,* 2015). The UK government has since halted the planned changes to existing in-work benefits (Working Tax Credits) but there will be cuts to in-work benefits in the near future (when Universal Credit replaces Tax Credits) and the most likely impact is that the increase in the minimum wage will not result in a fall in income inequality but may reduce wage inequality.

Atkinson, Stiglitz, the OECD and the WEF are all in favour of appropriate use of minimum wages to reduce inequality in the lower half of the wage distribution. A review of the evidence highlights that for minimum wages to have a positive impact on inequality:

- Minimum wage rates have to be set high enough so that they compress the wage distribution below the median;
- A significant share of workers must benefit;
- Spill-over effects need to be present;
- Minimum wages must not be set too high or unemployment could rise or hours of work could fall;
- They need to be considered alongside in-work benefit systems.

The literature review has also highlighted difficulties in assessing the medium and long-run effects on inequality which can vary from short-run effects. Few studies have adopted general equilibrium frameworks or explicitly studied the effects of minimum wages on education and training decisions, price effects, taxes and cash transfers and other indirect effects. The evidence for the US seems largely consistent and convincing that the fall in the real value of the minimum wage over the 1980s was an important explanatory factor for increasing wage inequality in the lower half of the wage distribution. The evidence for the UK is less conclusive but this may be due to factors such as the cautious rate that the NMW was initially set at and weaknesses in the methodological approaches giving rise to conflicting findings. The introduction of a minimum wage in Germany in January 2015 could provide more evidence on the relationship between minimum wages and inequality.

2.4 Top wages, CEO pay determination and bankers' bonuses

Another segment of the labour market where there exists an imbalance of power is at the very top. Piketty notes that supersalaries among CEOs and managers in large firms appear to be largely a phenomenon prevalent in Anglo-Saxon countries (US, Canada, UK, Australia). The salaries that top executives command in these countries far exceeds those paid elsewhere. The rise in their salaries is linked to increasing concentration of labour income at the top of the distribution (top 1% and even more so the top 0.1%) and inequality in the top half of the distribution. There is no evidence that top executives in these countries are 'worth' more than those performing the same tasks in other countries, that their skills are particularly in short supply or that technological advances are unique to these countries. Privatisation of many of the utilities in countries like the UK in the 1980s and 1990s saw the pay of managers in these organisations increase by staggering amounts over a very short period of time with very little change, if any, in job descriptions and responsibilities.

Explanations for these supersalaries are: barriers to entry to this elite group, non-competitive wage setting practices (often involving small groups of similarly paid executives setting wages where there is a risk that setting lower salaries will impact on their own salaries), reputational factors (so even where shareholders are involved in agreeing CEOs salaries there is a tendency for them to agree high remuneration packages for commercial reasons). Piketty (2014) notes "…the explosion of very high salaries occurred in some developed countries but not others. This suggests that institutional differences between countries rather than general and *a priori* universal causes such as technological change played a central role" (p.315). Piketty puts some of this down to differences in 'social norms' across countries (p.332). He concludes that "In all the English-speaking countries, the primary reason for increased income inequality in recent decades is the rise of the supermanager in both the financial and nonfinancial sectors" (p.315). Piketty does show that the share of total income going to the top 1% increases in continental European countries and Japan but the scale of the increase and the overall share is of a different magnitude altogether.

Denk (2015) examines the relationship between the level of earnings in the financial sector and labour income inequality across and between European countries. He estimates that financial sector workers make up 19% of the top 1% earners even though the employment share of finance is only 4%. In 2010 the average wage premium in finance is estimated to be 28% on average across European countries, but with considerable variation between countries. The UK and Italy have the highest wage premia (around 50%) and the Netherlands and Belgium have the lowest (the Netherlands is negative - 0.5% - and Belgium is around 7%) (Denk, 2015, p.16). These premia are estimated after controlling for a number of explanatory variables including: age, education, experience, firm size, firm location, paid overtime hours, occupation.

Guy (2005) shows that prior to 1984 top executive pay in Britain was found to be a stable function of both firm size and earnings differentials with lower management. However, he identifies a structural break in 1984 associated with the widespread adoption of executive share option schemes breaking down the relationship between lower management pay differentials and the pay of CEOs. Changes in CEO pay in Britain over the 1970s and 1980s are shown to explain the widening in the top half (90:50 ratio) of the weekly earnings distribution (non-manual adult male workers). The rise in the use of stock options to reward top executives is also a feature of the US, although in both countries the attractiveness of receiving different forms of payment vary over time depending on variable tax rates. Piketty highlights the erosion of corporate governance which has contributed to increases in CEO pay – ownership shifts to shareholders while managers capture control. Managers are then largely free to set their own pay (or have their pay set by a small committee of similarly paid managers).

In terms of policy proposals, Piketty and Stiglitz tend to focus on increased taxation of both income and wealth for those at the very top of the distribution. Atkinson favours a pay code which adopts limits on top earnings through adopting maximum pay multiples – which could be benchmarked to a minimum wage. He discusses the need for any pay code to be concerned with whether people are being paid equally for work of equal value.

Other relevant policies that have been explored are curbs on bankers' bonuses, and more diverse and representative composition of pay review bodies for CEOs and top executives. In January 2014 the EU introduced the Capital Requirements Directive IV (CRD IV)[2] and while the bulk of the legislation is to do with regulating capital requirements of financial institutions (banks, building societies and investment firms) to improve financial stability in Europe, it also includes new rules on corporate governance and remuneration. Curbing excessive remuneration in the financial sector is of wider benefit than inequality reduction as previous freedoms were seen to have encouraged excessive risk-taking behaviour which posed a threat to credit institutions and investment firms as well as the wider economy. The new regulations on remuneration included:

- A capped ratio on the fixed and variable component of remuneration at a ratio of 1:1 or 2:1 with shareholder approval[3]. This cap applies to staff whose activities have a material impact on the risk profile of the institution in which they work.
- 50% of any variable remuneration to be in the form of share based awards.
- At least 40% of variable remuneration to be deferred for not less than 3-5 years to align incentives with the longer-term interests of the institution.
- Strengthening of malus and clawback arrangements.
- Additional disclosure and transparency requirements for individuals earning more than EUR 1million per year.

These new regulations have faced a number of challenges. Initially the UK government launched a legal challenge on the cap on bankers' bonuses with the European Court of Justice. Later this challenge was withdrawn but a number of countries (UK, France, Ireland, Luxembourg and the Netherlands) have so far refused to implement the bonus cap on smaller

[2] http://ec.europa.eu/finance/bank/regcapital/legislation-in-force/index_en.htm#maincontentSec1
[3] Shareholders or owners or members of the institution shall act by a majority of at least 66 % provided that at least 50 % of the shares or equivalent ownership rights are represented or, failing that, shall act by a majority of 75 % of the ownership rights represented.

financial institutions, prompting the European Commission to announce a review to assess whether smaller institutions should be exempt ('Brussels reviews rules on bonus cap for smaller EU banks', *Financial Times*, 1 March 2016). In addition, the ability to apply discretion to some aspects of the regulation and greater flexibility for institutions which are non-EU foreign subsidiaries reduces the effectiveness of the regulations. It is still too early to tell what impact, if any, these regulations will have on wage or income inequality.

In 2010 the US passed a law (Dodd-Frank Act) that will require public companies from 2017 to publish the ratio of the pay of their chief executive to their median employee. The hope is that this will shame companies to lower CEO pay. *The Economist* calculates that average pay among the top 350 chief executives was $16m in 2014, $5m among a broader group of 3,000 companies (*The Economist*, 6 August 2015). While "nudge" policies are growing in popularity they can have unintended consequences and *The Economist* expresses some concern that companies may act in undesirable ways to keep the ratios artificially low such as pushing some lower paid staff off the payroll and then employing them as contractors on even lower rates of pay, and a general increase in outsourcing. They suggest that the regulation will do little good, but much harm and will not address the broader problem of income inequality in America. However, such reforms may play an important role in shifting culture norms even if they require other reforms to result in meaningful change. Another component of the Dodd Frank Act was the Say-on-Pay provision which requires all public companies to give their shareholders the opportunity to make a nonbinding advisory vote on their top executives pay (Morrissey, 2013). This seems unlikely to have any great impact and initial results show that only in a small number of firms do the majority of shareholders vote against executives' pay packages. However, it does provide an avenue for shareholders to take a stand against overly generous pay increases. Unfortunately shareholders may fear the reputational effects on share values from publically voting against CEO pay packages. A recent example is the case of 59% of shareholders voting against BP's chief executive Bob Dudley's bumper £14 million pay deal for 2015 despite BP profits falling and thousands of staff losing their jobs. However, the vote was advisory and non-binding and will not result in immediate changes to Mr Dudley's pay package which had already been put in place before shareholders had been given the opportunity to vote. BP say they will take this vote into consideration in the future.

Mishel and Davis (2015) argue that high CEO pay reflects rents and concessions CEOs can draw by virtue of their position and that the rise in executive pay in the US has deprived other workers of broader-based wage growth. They suggest a number of policy options to curb escalating executive pay which include higher marginal income tax rates at the very top to help limit rent-seeking behaviour, further tax reforms to disallow the deductibility of performance pay and reduce the financial incentive to take stock options, higher corporate tax rates for firms with higher ratios of CEO-to-worker compensation. They also propose changes in corporate governance that could potentially limit executive pay growth.

Bell and Van Reenen (2013) focus on financial sector workers as bankers make up a large share of high-wage workers in the UK; 28% of the top 1% were London bankers in 2008. They show that in the UK rising bankers' bonuses accounted for two-thirds of the increase in the share of the top 1% after 1999. The financial crisis appeared to have no impact on the bankers' share of earnings nor on their relative employment position three years after the crisis. They suggest that if financial sector rents are resulting in high bankers' pay then reforms need to remove or lessen the ability to generate such rents. However, they are sceptical of the likely success of such reforms and propose a focus on taxing rents and higher marginal income taxes for these high earners.

A recent OECD working paper examined the relationship between finance and income inequality in OECD countries (Denk and Cournede, 2015). Finance[4] has expanded strongly in many countries with financial firms paying very high levels of compensation. The authors find that more finance is associated with higher income inequality. This is not surprising given that financial sector employees are highly concentrated at the top of the earnings distribution (Denk, 2015). However, they also find that more finance is associated with lower income growth for many households in the middle to lower part of the income distribution. Consequently the rise of finance appears to limit inclusive growth as well as increase inequality.

Increases in the concentration of income and wealth at the top end of the distributions have driven recent increases in inequality in a number of countries. Supersalaries and the rise of supermanagers seem to be a phenomenon mostly associated with Anglo Saxon countries for the time being but may spread to other countries. These countries also tend to have large financial sectors which pay large bonuses to bankers and other finance workers. This small but sizeable super-rich group wields considerable power – making large donations to political parties – and so far appear to have managed to effectively block policy changes that would see a reduction in their earnings, such as increasing marginal tax rates, introducing maximum pay multiples, limits on share options, curbs to bankers bonuses, improved regulation on remuneration packages.

2.5 Concluding Thoughts and Recommendations

In this part of the review we have focused on three areas of wage determination – minimum wages, collective bargaining and top executives' pay. The evidence suggests that within all three areas policy designed to bolster labour market institutions has the potential to reduce wage inequality. Minimum wages have the capacity to increase the pay of the lowest paid workers and reduce inequality if they are set high enough, cover enough workers and don't result in significant reductions in employment. Spill-over effects appear to be important if inequality reduction is to be achieved and some evidence suggests that these are more likely in systems where minimum wages are complemented by collective wage bargaining systems. Depending on where in the household income distribution minimum wage workers are situated, affects the extent to which minimum wages can reduce household income inequality. Research evidence has also highlighted the need to co-ordinate minimum wage

[4] Measured in terms of greater intermediated credit or higher stock market capitalisation.

policy with in-work benefit policy to maximise the impact on inequality. Collective wage bargaining is also found to reduce wage inequality despite the fact that it can lead to increases in the differentials between those covered by an agreement and workers external to any wage setting agreement. Fuller coverage is likely to be the most effective. While it is some time since a collective wage bargaining system has been introduced within a country (in many countries they are waning), Atkinson (2015) advocates the introduction of such a system for the UK as a key proposal to tackling inequality. Very high levels of CEO pay/bankers' bonuses and increasing concentration of wages, income and wealth among a small proportion of the population have been observed in a number of Anglo-Saxon countries but are not widespread features across all EU or OECD countries. The behaviour of wage setting committees, the use of share options and changes in taxes help to explain this trend. There is no evidence that it is driven by improved productivity, profitability, scarcity or exceptional talent. Some reforms have been put in place to try and curb supersalaries such as shareholder voting on top executives' remuneration packages, publishing wage multiples and reforms to the payment of bankers' bonuses but few are optimistic that these will have a significant impact. Without co-ordinated action on tax rates it seems unlikely that there will be any change. This has significant implications for rising income inequality and the extent to which any future growth will be inclusive because this super-rich elite are politically powerful and have been successful at shaping policies to their advantage.

Part 3:

Welfare states and redistribution through cash transfers

Welfare states and redistribution through cash transfers

The welfare state and the system of cash transfers play a key role in determining the extent to which inequality in the labour market translates to household-level income inequality. In this section of the review we examine the evidence on the relationship between different welfare regimes and inequality, we look beneath regime types to examine which institutional characteristics help explain cross country variation and focus in particular on cash transfer system.

3.1 Introduction to Welfare States and Inequality

Most notably over the last century, the growth of fiscal states of developed democracies has been reflected in the constitution of social states (Piketty, 2014, p.479). Also referred to as welfare states, they have played a crucial role in reducing poverty, as they are viewed as the "primary vehicle[s] by which our societies seek to ensure a minimum level of resources for all members" and are a response to the "precariousness of employment in Europe" between 1870 and 1914 (Atkinson, 2015, p.205, pp.264-265). Social reformist governments arose across Europe and pushed for more egalitarian social policies, which attempted to dismantle social hierarchies that were formed and sustained by the original Bismarckian welfare states (Esping-Andersen and Myles, 2009, p. 639). This original understanding, focusing on the reduction of poverty for the most disadvantaged members of society, seems to remain as the main objective of modern-day welfare states. Esping-Andersen and Myles (2009) note, as is often the case, but not exclusively, poverty reduction is the single most relevant measure of welfare state redistribution and has become the favoured approach in empirical research, "namely that any redistribution should be to the greatest benefit of the worst off" (p.655). This was affirmed in Article 2 of the Treaty on European Union, whereas one of the main objectives of the EU is to enhance economic and social cohesion between and within member countries.

However, studies of the redistributive effects of welfare states based solely on monetary measures of redistribution from the wealthy to the poor may provide an incomplete and distorted view of the complexity of the modern day welfare state. As Hills (2015) frames it, a view of welfare states and social policies in modern economies "acting as an industrial-scale modern-day 'Robin Hood', taking from one group and giving to another" would be a "simplistic view of what is actually going on" (p.2). One must also analyse the impact of in-kind support from welfare states, i.e. direct non-cash support in the form of goods or services, and the overall impact on social and economic inequality.

A new purpose of the modern-day welfare state seems to be emerging in policy discussions – reducing not just poverty, but also tackling rising inequality. The role of reduction in social and economic inequalities is not formally entrenched in most of the modern-day welfare states, no matter geography and regime type, save a few Nordic and Continental European examples. Arguably, many welfare states do not see inequality reduction as part of their direct role; rather, as Hills (2015) writes, most social policies must be understood as "directed at coping with or mitigating problems caused by the complex dynamics of people's lives, both the predictable ones…and the ones facing people as they make their way in an uncertain world" (p.5).

One reason that governments have been able to craft these social policies as described by Hills (2015) is due to an increase in revenues over the twentieth century as documented by Piketty (2014). Moreover, these increased revenues allowed governments to expend tax revenues in new and/or increased ways, specifically social spending. Focusing attention on these social expenditures of the mid twentieth century, Piketty writes, "The growing tax bite enabled governments to take on ever broader social functions, which now consume between a quarter and a third of national income, depending on the country" (2014, pp.477-478). The post-World War II growth rates of welfare states in Europe were unprecedented in western democracies and have since slowed; however, the possibility of future, even greater, expansion of welfare states to address rising inequality raises very different issues today than it did in times past. For Piketty (2014), "…once the government takes on the central role in economic and social life that it acquired in the decades after World War II, it is normal and legitimate for that role to be permanently questioned and debated" (pp. 473-474). This section of the evidence review will attempt to raise the aforementioned pertinent questions through a thorough analysis of past, current, and future welfare states.

Most importantly, empirical research concludes that welfare states are successful at redistribution in an egalitarian direction, with Gini coefficients, decile ratios, and poverty rates all lower than in primary income distributions, sans intervention. However, different welfare states achieve this differently and vary in their degree of equalisation (Esping-Andersen and Myles, 2009, p.652). Market income inequality is an example of this varied equalisation. Public pension schemes and provisions often reduce incentive for individuals to make alternative or additional private pension provisions, thus increasing market income inequality. This second-order effect leads to the impression that the welfare state has an even greater redistributive role but this is partly due to the fact that it changes the counterfactual income distribution (market income).

This section proceeds in three parts: 1) a definitional understanding of welfare regime types, 2) a brief historical analysis of the impact of welfare states on inequality trends, and 3) an examination of institutional features of welfare states, such as cash transfer systems as universalistic or means-tested.

3.2 Welfare States as Regime Types

As stated previously, welfare states may take many different forms, depending upon their generosity and the characteristics of the governments and labour market institutions shaping them, i.e. organized labour's influence on collective bargaining and the setting of replacement rates or the presence of a "Social and Economic Council" in the welfare state policymaking process (Atkinson, 2015, pp. 129-130). The highly influential works of Esping-Andersen (originally in 1990) and Esping-Andersen and Myles (2009) categorize democratic welfare states into three basic regime types: liberal, social democratic, and continental/corporatist (pp.645-648), though recent academic literature by Christopher Whelan, Richard Layte, and others has suggested separating additional regime types, such as a Southern European (residualist) welfare state regime (2003). Methods of social spending, generosity of benefits, degrees of targeting, and employment patterns are all reflected in a country's welfare state classification.

Liberal welfare regimes, also referred to as Anglo-Saxon regimes, favour minimal public intervention, due to a preference for citizens to obtain welfare from the private market, i.e. private health insurance, private pensions, etc. The role of liberal welfare regimes is to maximise private welfare, rather than replace it - most often through tax deductions as a means of subsidisation (Esping-Andersen and Myles, 2009, pp.645-646). Liberal welfare regimes have a preference for targeting public benefits at the neediest section of the population, traditionally via means-testing, and have seen a recent shift toward work-conditional benefit policies (Esping-Andersen and Myles, 2009, pp.645-646). They often have less-regulated labour markets, associated with greater labour turnover and greater wage inequality, thus putting individuals at an increased risk of poverty. Therefore, individuals are forced to turn to the private market for welfare provisions, which is often home to greater inequality. Within the European Union, Ireland and the United Kingdom are categorized as having Liberal welfare regimes; whereas, non-EU countries such as Australia, Canada, and the United States also fall under this category (Esping-Andersen and Myles, 1990, pp. 645-646).

Social Democratic welfare regimes, also referred to as Nordic regimes, are characterized by an emphasis on universal inclusion and a comprehensive definition of social entitlements, with an aim to marginalise the role of targeted assistance and private welfare (Esping-Andersen and Myles, 2009, pp.646-647). Social Democratic welfare regimes attempt to de-familialize care for children and the elderly through generous welfare programs, with Denmark and Sweden having de facto complete coverage. This, in turn, helps to boost female labour supply to bring it closer to that of men, even on a full-time basis. Social Democratic welfare regimes have high levels of coordination of social and labour market policies - i.e. hiring, firing, wage bargaining - and have high incentives for the unemployed to participate in training and relocation programs (Esping-Andersen and Myles, 2009, pp.646-647). Within the European Union, countries such as Sweden, Denmark, [Norway], Finland, and in some cases Belgium fall under this category.

Continental or Corporatist welfare regimes, also referred to as Continental European regimes, are often rooted in conservative origins with foundations built around obligatory social insurance tied to occupational distinctions. In that, entitlements depend primarily on life-long employment, historically built around the male breadwinner model (Esping-Andersen and Myles, 2009, pp.647-648). The Continental welfare regime assumes primary responsibilities lie with family members, with a historical lack of support for working mothers and low female employment. Additionally, youth unemployment tends to be extremely high (excluding Germany) due to high, non-wage labour costs and early retirement mandates used to clear the labour market of older workers, thus lowering employment rates and increasing pension expenditures (pensioner-bias) (Esping-Andersen and Myles, 1990, pp.647-648). Within the European Union, countries such as Austria, France, Germany, Italy, the Netherlands, Spain, and in some cases Belgium fall under this category.

See Table 2 for a visual representation of this aforementioned information regarding welfare state regime types (Dafermos and Papatheodorou, 2013).

Table 2: Typology of welfare states

	Liberal	**Conservative**	**Social-Democratic**	**Southern**
Region	Anglo-Saxon	Continental	Nordic	Mediterranean
Countries	IR, UK	AT, BE, FR, GE, LU, NL	DK, FI, NO, SW	CY, GR, IT, PT, SP
Social security	Means-tested	Contribution based	Universal, equal benefits	Contribution based
Social expenditure	Low	High	High	Low
Tax rates	Low	High	High	Low
Tax revenue	Middle	High	High	Low
SIC	Low (Beveridge)	High (Bismarck)	Middle (Beveridge)	Middle (Bismarck)
Redistribution	Middle	High	High	Low
Participation women	High	Low	High	Low

Source: Table 1 reproduced from Dafermos and Papatheodorou (2013).

In terms of effectiveness, there is a strong redistributive incidence in the Social Democratic regime and a weak incidence in the Southern European grouping of the Continental regime when examining poverty reduction across households. However, "[r]esearch that centers on child poverty suggests…that two Continental European welfare states (Belgium and France) perform more similarly to Scandinavia, while others, especially Italy, more similar to the US" (Esping-Andersen and Myles, 2009, p.656). Questions often arise regarding what changes could be observed should a country transition from one regime type to another. Esping-Andersen and Myles (2009), in citing Rainwater and Smeeding (2003), put forth that child poverty in the Nordic countries, Belgium, France, Germany, and the Netherlands would, as much as, triple if their welfare states performed like the American (Liberal) welfare state (p.660). Further, "[o]nly in Spain and Italy would the adoption of the US [Liberal] policy model actually contribute to a fall in child poverty" (Esping-Andersen and Myles, 2009, p.660). Additionally, Dafermos and Papatheodorou (2013) suggest that a transition from a Southern European welfare regime to a Social Democratic welfare regime would increase impact on reducing inequality.

> More precisely, if the social protection system was to shift from the Southern European to the social-democratic one, the reduction in the Gini coefficient and the poverty rate, following a 1 percentage point of GDP rise in total social transfers, would be 0.36–0.40 and 0.45 percentage points higher, respectively (p.13).

However, Esping-Andersen and Myles (2009) assert that there is no clear connection between institutional features and the relative size of the welfare state, with Liberal regimes, as of 2009, spending approximately 19 percent of GDP on public social spending and the Social Democratic and Continental regimes, also as of 2009, spending 26 percent and 25 percent of GDP on public social spending, respectively (p.648). Additionally, Atkinson (2015) addresses the commonplace argument as to whether or not welfare states promote or inhibit economic growth. He writes that prior to a shifting of view in the 1980s and 1990s, the introduction of welfare state programs in Europe was "seen as complementary with, rather than in competition with, the achievement of economic goals" (p.265).

In summary, the above findings have a straightforward interpretation: welfare regimes that are characterised by more universal benefits use their social spending more effectively in alleviating income inequality and poverty. Conversely, welfare regimes that rely on means-testing and/or highly fragmented social transfers are less capable of using the social resources effectively (Dafermos and Papatheodorou, 2013, p.14).

3.3 Welfare States Then and Now

In assessing the current arena in which European Union welfare states operate, one must examine recent historical trends, foundations, and adaptations of welfare states. For the purpose of this review, the historical context will focus mainly, but not exclusively, on post-World War II Europe until present day. Atkinson (2015) paints the picture of an initial fall and eventual rise in inequality in post-war Europe, explaining that the initial fall in inequality was due to a period of constant expansion of the welfare state and social provisions, financed by progressive income taxation (p.65). He attributes the eventual rise in inequality in post-war Europe to several important factors: changes in state pension policies, decline in union participation, less labour-friendly legislation, and a heavy reliance on means-testing for public benefits.

State Pension Policies

After 1984, in the UK, inequality in post-tax incomes sharply increased due to a rise in market income inequality and a decrease in taxes and transfers. "This reflected policy decisions such as the change in up-rating for state pensions, which meant that basic pension for a single person fell by nearly one-fifth relative to average take-home pay in the second half of the 1980s, and the scaling back of unemployment insurance" (Atkinson, 2015, p.66). A reduction in the generosity of state pensions increased the gap between pensioners and the working population, but also widened the gap between fortunate pensioners with private pensions and those who rely solely on the state pension (Atkinson, 2015, p.205). In other words, the value of transfer incomes – i.e. pensions – fell relative to market incomes.

Union Participation and Labour Laws

Atkinson (2015), discusses the decline of union participation, particularly in the US, UK, and Germany. More specifically, German union participation rates have fallen from 33 percent in 1980 to 22 percent in 2004. Additionally, Atkinson (2015) cites legislation in the UK between 1980 and 1993 that considerably weakened the legal status and protection of unions (pp.128-129). In keeping with the United Kingdom, "there is the issue of engagement of UK trade unions in the making of social policy, whereas a "social partnership" is largely absent in the UK. Colin Crouch drew attention in 2000 to the 'total absence of the unions' from discussions of the reform of the welfare state and observed that this seemed to be peculiar to Britain, unlike, for example, continental European countries, where unions have a formal role in schemes for pensions, sickness insurance, and unemployment benefits" (Atkinson, 2015, p.128-129).

Means-Tested and Targeted Benefits

Atkinson (2015) emphasizes that the level of welfare state benefits may be less important than the proportion of those eligible for transfers, claiming tighter eligibility rules and the increase in proportion of 'non-standard' workers in the following countries between 1995 and 2005: Austria, Belgium, the Czech Republic, Denmark, Estonia, Finland, Hungary, Italy, the Netherlands, Poland, Slovakia, Switzerland, Sweden, the UK, and the US (p.67). Atkinson (2015) cites that these welfare states have increasingly adopted policies of income testing, in an effort to improve the degree of targeting to those at the bottom of the income distribution. He says, however, that this increasingly contributes to inequality and is not sufficiently recognized. Whereas, income targeting has failed to reach those in need, in an effort to not make unjustified payments (pp.205-206). This is crucial because, according to the OECD (2011), "[b]enefits had a much stronger impact on inequality than the other main instruments of cash distribution" (p.263). The report goes on to say that benefit levels were not the most important factor in reducing inequality; rather, it was the number of people entitled to a transfer, and this number was reduced with tighter benefit eligibility rules (p.263), agreeing with the earlier point made by Atkinson. Recipiency rates for unemployment benefits have fallen in Italy, United Kingdom, Spain, and most Nordic countries; whereas, rates rose strongly in Belgium, Germany, and Portugal. "Reduced redistribution was sometimes the main source of widening household-income gaps in the ten years that followed [the 1990s]" (OECD, 2011, p. 292).

The Cases of Germany and Finland

In post-war Germany, initial inequality of market income widened substantially, but it was not accompanied by an equivalent rise in disposable income inequality due to the generosity of the German tax and transfer system. Atkinson, quoting Richard Hauser, writes, "the German social security system, despite the increasingly unfavourable conditions, largely reached its goals from 1973 to 1993" (2015, p.66). The case is also true in Norway, although the accelerating growth in market-income inequality resulted in a less equal distribution of disposable income (OECD, 2011, p.271).

Whereas, during the deep recession in Finland of the 1990s "income inequality did not change, since redistribution of cash transfers compensated the growing inequality of factor incomes. After the recession…income inequality has increased, because redistribution of cash transfers has declined [due to a fall in benefit level generosity], while factor income inequality has continued to grow" (Atkinson, 2015, pp.66-67; OCED, 2011, p.18). The OECD (2011) report also uses Finland's history as an example. "For instance, in Finland, greater equalisation through taxes and benefits offset more than three quarters of the 23% increase in market-income inequality up until 1995, but by 2004, this has dropped to 50%" (p.271).

These examples demonstrate the positive role of the welfare state in lowering levels of income inequality, citing examples of immediate post-war decades as examples of successful European welfare states. A successful post-war welfare state (Germany and Finland) prevented a rise in market income inequality from spilling over into disposable income inequality. "But in each case, too, the race was eventually lost, and more generally there has been an unwinding of redistributive policies in OECD countries, with serious adverse distributional consequences" (Atkinson, 2015, pp.66-67). This is corroborated by the OECD (2011) report, stating:

The sheer volume of redistribution through social policies increased. But with more people needing support, these systems were unable to reduce inequality by as much as they had done before. Overall, tax-benefit policies offset some of the large increases in inequality attributable to growing market-income disparities, the main driver of inequality trends between the mid-1980s and the mid-1990s. However, from the mid-1990s to 2005, the reduced redistributive capacity of tax-benefit systems was sometimes the main source of widening household income gaps (p.18).

Particularly in the last fifteen to twenty years, rising income inequality can be linked to less effective redistribution through benefits—i.e. benefit levels were cut and eligibility rules were tightened to contain social expenditures—and "market income inequality rose by about twice as much as redistribution (OECD, 2011, summary; pp.268-270). This is not the case, however, in Germany and most Nordic countries, save Sweden, as "[they] have avoided any major surge in disposable income inequality by increased redistribution" (Esping-Andersen and Myles, 2009, p.653).

3.4 Welfare State Institutions and Cash Transfer Systems

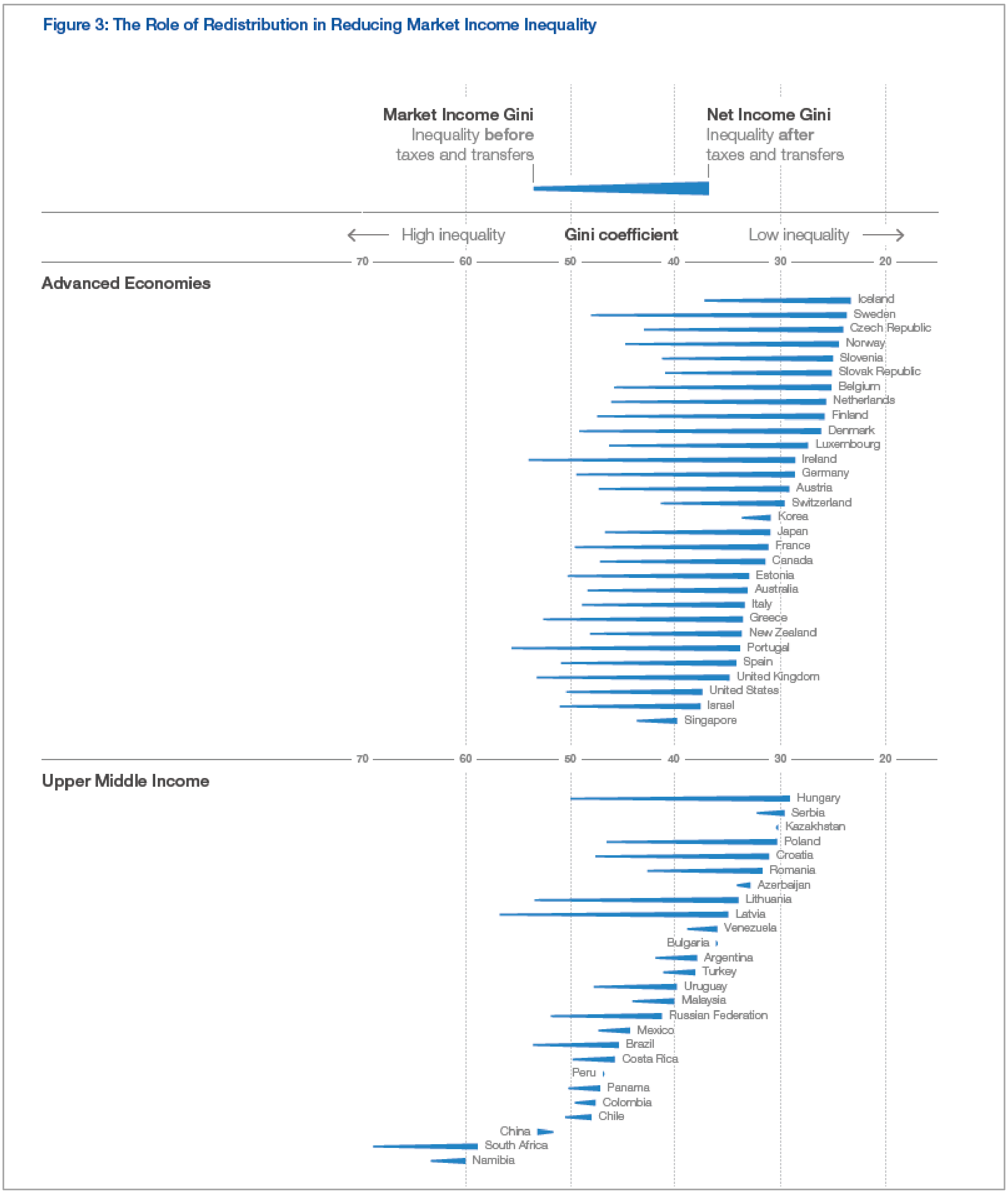
According to the OECD (2008) report *Growing Unequal?: Income Distribution and Poverty in OECD Countries,* when analysing the impact of welfare states and social programs on inequality reduction, it is important to assess their impact via targeting, progressivity, and redistribution - i.e. who gets the payments, do worse-off groups get more than well-off groups, and does it actually change the distribution of income (OECD, 2008, p.100). In slight contrast to the evidence outlined above, some evidence does emphasise the importance of the level of expenditure, in addition to those eligible to benefit. For example, Atkinson (2015) claims that full coverage of unemployment insurance and generous replacement rates tend to give rise to less inequality (p.77); and Atkinson citing Marx, Nolan, and Olivera (2015), "…no advanced economy achieved a low level of inequality and/or relative income poverty with a low level of social spending, regardless of how well that country performed on other dimensions that matter for poverty" (p.2081).

Welfare state cash transfer systems remain significantly more efficient than systems of taxation at reducing inequality, as well as more effective (OECD, 2008, p.115). Welfare state cash transfer systems can be categorized as universalistic—wherein nearly all individuals in a society are eligible beneficiaries as a right through citizenship—or concentrated—wherein the benefits are targeted through means-testing (or otherwise) and aimed at the worst-off economically in the population, though some systems use a hybrid model. More generous payments are often made to the poor under a means-tested system than under a universal benefit system; however, "these characteristics of welfare systems may also impact on the overall size of spending, as the middle class may be more supportive of welfare programmes when benefits are universally provided (Korpi and Palme, 1998)" (OECD, 2008, p.102). This is also known as the "paradox of redistribution" thesis—arguing that narrowly-targeted policies are less generous and stigmatizing due to a lack of broad electoral support; whereas, universal benefits usher broad citizen support and offer more generous benefits that will reach those in need with more certainty (Esping-Andersen and Myles, 2009, p.642).

Welfare state cash transfers are more targeted to the poorest 20% of the population in Denmark, Finland, the Netherlands, Ireland and the United Kingdom (where the lowest income quintile receive more than 30% of all transfers) and least targeted in Poland (where the poorest 20% receive less than 10% of all transfers) (OECD, 2008, p.116). Nordic countries transfer large amounts of benefits to low-income people, but also levy a significant amount of taxes on them; conversely, most English speaking countries pay less generous transfers but offset this partly by levying lower taxes (OECD, 2008, pp.116-117). It is important to note that, while universalistic versus concentrated cash transfer payment distinctions explain a significant piece of the inequality trends, institutional aspects of in-work and out-of-work benefits also need to be analysed.

The World Economic Forum recently published an assessment of the role of redistribution due to taxes and transfers across countries. In Figure 7 we reproduce their results for advanced economies and upper middle income economies. It is clear from these figures that there is considerable cross-country variation in the use and impact of redistributive transfers.

Figure 7: The role of redistribution in reducing market income inequality



Source: Reproduced from *The Inclusive Growth and Development Report*, WEF, 2015, Figure 3, p.18 (The Standardized World Income Inequality Database, 2012 or most recent).

The OECD Report (2008) *Growing Unequal?: Income Distribution and Poverty in OECD Countries* outlines drivers in income inequality and poverty over time; one such driver is in-work poverty. “Work is very effective at tackling poverty. Poverty rates among jobless families are almost six times higher than those among working families. However, work is not always sufficient to avoid poverty. More than half of all poor people belong to households with some earnings, due to a combination of low hours worked during the year and/or low wages. Reducing in-work poverty often requires in-work benefits that supplement earnings” (OECD, 2008, pp.5-6). “A key challenge for policy is therefore to facilitate and encourage employment and earnings growth that benefit low-income groups in particular (OECD, 2011, p.293). In the second evidence review in this series we explore in some detail preventative measures and preventative approaches to in-work poverty (McKnight, Stewart, Mohun Himmelweit and Palillo, 2016)

3.5 Welfare States and Public Policies

Article 2 of the Treaty on European Union sets out to enhance economic and social cohesion both between and within member countries as one of its main objectives. As has been documented above and will be documented below, there are sizeable differences across member states in the levels of household-income inequality, particularly after the addition of twelve new member states since 2004 (Fuest, Niehues, and Peichl, 2009). However, since roughly 2007, the outbreak of economic crises across Europe, coupled with austerity measures, have put this goal of economic and social cohesion under extreme pressure (Dafermos and Papatheodorou, 2013). Yet most importantly, crafting the appropriate mix of public policies specifically targeted to reduce inequality is both achievable in the short run and “a research issue of growing importance” in the long run (Dafermos and Papatheodorou, 2013).

De Agostini, Paulus, and Tesseva (2015) corroborate the urgency in needing to understand which policy “cocktail” is most effective in reducing inequality. After observing rates of relative poverty and inequality increase in more than half of the European Union member nations between 2008 and 2012, De Agostini *et al*. examined empirical evidence on the policy effect of tax and benefit programs in ten European Union member nations (Austria, Bulgaria, Estonia, Germany, Greece, Italy, Latvia, Poland, Romania, and the UK) to better understand what policies worked and which failed to reduce inequality over that time frame (2015, p.2). The research of De Agostini *et al*. (2015) concluded that public policy changes in some of these ten European Union member nations “contributed to reductions in poverty and inequality levels” (p. 3); or in other words, there are policies that have been proven to reduce inequality levels. The countries with the largest policy-induced inequality reductions were Greece, Bulgaria, Estonia, and Romania (De Agostini *et al*., 2015, p.8). Whereas, Greek policy changes contributed to reductions in relative poverty and inequality with the 2014 policies (the most recent) accounting for more than half of the reduction in the six-year period. It is important to note, however, that while Greece reduced levels of poverty and inequality, it also substantially reduced household incomes by 13 percent in real terms and 4 percent relative to market incomes (De Agostini *et al.*, p.10; p.21). In contrast, UK policy changes gave rise to increases in poverty and inequality over the same period (De Agostini *et al*., 2015. p.9).

Up until this point, the evidence review has covered characteristic features and historical trends of different welfare states in the European Union. We now move to discuss three specific policy structures and tools used to combat household-level income inequality, with literature and examples of the aforementioned studies and beyond, and discuss whether or not these structures and tools have immediate and/or lasting effects on inequality reduction. The three tools to be examined are: minimum income schemes, pension systems, and unemployment benefit schemes. This list of reviewed policy tools is certainly not exhaustive; however, we believe these three tools to be of the utmost and immediate importance in shaping welfare states to be more responsive to reducing household-income inequality.

Minimum Income

Minimum Income schemes provide cash benefits to individuals of a particular country and are intended to guarantee a minimum level of support when other incomes (market and otherwise) are insufficient. A Minimum Income scheme provides the "social minimum deemed acceptable for that category of person by the social protection system in that country" (Figari, Matsaganis, and Sutherland, 2013, p.4). Present day Minimum Income schemes represent the ultimate safety net in protecting working-age individuals (those usually older than 18 years of age) from poverty and are rooted in a long European history. Since 1601, the following legislation has led to the development of the modern day Minimum Income scheme: the British Poor Law (1601), the National Assistance Act of Great Britain (1948), Social Bistand in Denmark (1961), Sozialhilfe in Germany (1962), Algemene Bijstand in The Netherlands (1963), Socialbidrag in Sweden, Minimex in Belgium (1974), Revenu Minimum d'Insertion (RMI) in France (1988), Basque Country scheme in Spain (1988), Catalonia's scheme (1990), Rendimento Minimo Garantido (RMG) in Portugal (1996), and Mii in Italy (1998) before being terminated (2003) (Figari *et al*., 2013, pp.3-4).

Minimum Income schemes can take several different forms and one overarching definition or description does not exist to adequately capture the variations in schemes across countries. In this section, we discuss two metrics on which Minimum Income schemes are evaluated (coverage and adequacy) and several of their variations: a Citizen's Income, a Participation Income, a Child Benefit, and an example of a comprehensive increase of benefits across the board in three European Union member states. This section concludes by discussing the recent development in Finland to implement a Citizen's Income.

Coverage and Adequacy

Figari *et al*. (2013) set out to enhance the literature on Minimum Income schemes by addressing unanswered questions left by previous studies. The first question centres on coverage: how many impoverished individuals are entitled to a Minimum Income in each country? The second question centres on adequacy: is the actual amount of Minimum Income being provided sufficient to lift individuals above a given income threshold and reduce levels of inequality?

After examining fourteen European Union member states, Figari *et al.* (2013) concluded that: 1) with respect to coverage, when the poverty line is set at 40 percent of median income, a sizable proportion of working age individuals are ineligible for Minimum Income; and 2) even after the Minimum Income benefit is added, a large fraction of those entitled remain at very low levels of income (p.12). The research reveals that Belgium and Luxembourg outperform France and Germany in terms of wider coverage and higher adequacy, Austria provides generous benefits but few beneficiaries, the UK does well on both coverage and adequacy, and "Poland stands out, clearly outperforming Slovenia and leaving Estonia far behind" (p.12). Figari *et al.* emphasise that coverage and adequacy are not positively correlated; rather, "the correlation between our two dimensions of effectiveness [of Minimum Income schemes] is weak and negative (and very far from being statistically significant)" (2013, p. 12).

Moving forward, Figari *et al*. (2013) see Minimum Income schemes as becoming the main (perhaps the only) social safety net for large groups of individuals across Europe, but they caution against this trend. Because the research also notes that Minimum Income schemes will continue to perform better in the context of a well-functioning labour market and a strong welfare state, *but* they cannot be "the only game in town" (p. 13). Figari *et al*. (2013) concludes, "MI schemes can act as efficient social shock absorbers and play a counter-cyclical role by boosting demand and consumption, so as long as extending coverage and/or improving adequacy are part of the agenda" (p.13).

Citizen's Income

A Citizen's Income is an unconditional, non-withdrawable income for every individual as a right of citizenship in a country (Torry, 2015, p.2). According to some researchers, it would deliver reduced marginal deduction rates and would increase employment incentives, offer greater social cohesion (Article 2 of the Treaty on European Union), eliminate the stigma generated by means-tested benefits, and substantially reduce fraud and error rates while being simpler to administer (Torry, 2015, p.2).

In his most recent work on a Citizen's Income for the United Kingdom "Two feasible ways to implement a revenue neutral Citizen's Income scheme", Torry (2015) presents clear and direct policy proposals which live up to the title of the work. He does so by advocating for an all-at-once approach and a phased approach; we will focus on the former.

Table 3 outlines the dimensions of three possible ways in which to introduce a Citizen's Income scheme in an all-at-once fashion. The figure takes into account which benefits, if at all, the new scheme would be replacing or joining, the different allocations for different demographics, the increase needed in the Income Tax rate to fund the new scheme, and the amount of administrative savings and total scheme cost (see below).

Table 3: Two feasible ways to implement a revenue neutral citizen's income scheme

	Scheme A	**Scheme B**	**Scheme C**
Relationship of Citizen's Income to means-tested benefits	Citizen's Incomes replace means-tested benefits except for Housing Benefit and Council Tax Benefit. Child Benefit and State Pension are no longer paid.	Means-tested benefits are left in place and the Citizen's Income is taken into account when means-tested benefits are calculated. Basic State Pension and Child Benefit are still paid.	Citizen's Incomes replace means-tested benefits except for Housing Benefit and Council Tax Benefit. Child Benefit ans State Pension are no longer paid.
Citizen's Pension per week	£145.40	£30	£120
Working age adult CI per week	£71.70	£50	£160
Young adult CI per week	£56.80	£40	£120
Child CI per week	£56.80	£20	£80
Income Tax rate increase required for strict revenue neutrality	5%	3%	28%
Income Tax, basic rate (on £0 - £42,010)	25%	23%	48%
Income Tax, higher rate (on £42,010 - £150,000)	45%	43%	68%
Income Tax, top rate (on £150,000-)	50%	48%	73%
Proportion of households in the lowest disposable income decile experiencing losses of over 10% at the point of implementation	28.03%	1.5% (and 4.37% with losses over 5%	29.0%
Proportion of households experiencing losses of over 10% at the point of implementation	15.2%	1.24% (and 15.2% with losses over 5%)	30.2%
Administrative saving assumed	£4bn	£1bn	£4bn
Net cost of scheme	£1.8bn	-£1.9bn: i.e. a saving of £1.9bn	-£0.47: i.e. a saving of £0.47bn

Source: Torry, M. (2015). "Two feasible ways to implement a revenue neutral citizen's income scheme." *EUROMOD Working Paper Series*.

While all three schemes would be revenue neutral in the "strictest sense, the only scheme likely to be politically viable would be scheme B" (Torry, 2015, pp.6-7). Torry then outlines three additional advantages attached to scheme B:

- On average, it would deliver a modest redistribution from the rich to the poor, with the Gini coefficient being reduced from 0.3 to 0.28.
- The number of children in poverty would be reduced from 12 per cent to 9 per cent, nearly a quarter.
- The scheme would be implemented easily and quickly because all existing benefits are left in place.

Torry (2015) comments, somewhat disparagingly, on the "tradition of cautious and piecemeal change to the benefits system" in the United Kingdom. It is for this reason that he also discusses a layered implementation of scheme B through the slower introduction of universal benefits based on age group over a longer period of time (pp.8-11).

Torry (2015) concludes his argument by stating that any proposed Citizen's Income scheme should be comprised of three non-negotiables: it should be strictly revenue neutral, it should not propose large increases in Income Tax rates, and it should impose very few losses on low-income households (p.12).

Participation Income

In his most recent book, *Inequality: What can be done?*, Anthony B. Atkinson (2015) advocates for a Participation Income, similar to the idea outlined by Torry, but paid on the basis of participation, not citizenship. Atkinson goes on to define participation as:

> [M]aking a social contribution, which for those of working age could be fulfilled by full- or part-time waged employment or self-employment, by education, training, or an active job search, by home care for infant children or frail elderly people, or by regular voluntary work in a recognised association [with provisions for those unable to participate on the grounds of illness or disability] (2015, p. 219).

He argues that the citizenship criterion put forth by Torry and others is too restrictive for individuals working in one country and being a citizen of another, for example individuals living in Denmark, working in Sweden and contributing to its economy, but not eligible for a Swedish Citizen's Income due to citizenship status. Atkinson (2015) views Participation Income as a more equitable route to providing this modicum of welfare. Atkinson advocates that the Participation Income be implemented on an EU-wide scale as a bold political move. "Proposing such an initiative would appear to fly in the face of decades of EU failure to make progress on social security harmonisation […] The EU would be breaking new ground" (Atkinson, 2015, p.222).

Child Benefit

Child Benefit is a direct cash transfer to a parent or set of parents based on them having a dependent child or multiple children. Child Benefit can be administered universally or be means-tested, as the UK shifted from a universal Child Benefit to a means-tested one in the last decade. Atkinson (2015) advocates for a child benefit to be paid with respect to all children and subject to the taxation of the individual claiming it (usually the mother, or both if filing jointly):

> A Child Benefit that is substantial but taxable, combined with a progressive rate structure…is an effective way of ensuring that all families receive some recognition

> of their family responsibilities but that more is given per child to those on lower incomes" (Atkinson, 2015, p.214).

He argues that a substantial Child Benefit is central to any program to reduce inequality, but it is not superior to providing other services for children, for example in-kind transfers such as the infrastructure and services related to caring for and educating children. Rather, he believes that in-cash transfers are complimentary with in-kind transfers, but emphasises that current circumstances of children and their families render them requiring "cash in their hands" (Atkinson, 2015, p.213).

Atkinson's implementation plan for an EU-wide Child Benefit is as follows: The first step would be to enact an EU-mandated child benefit of a certain specified level, with countries already at that or exceeding that level requiring no action. The benefit would be administered and financed by each member state and paid to the mother. He recommends that the child benefit be 18 percent of median equivalised income (UK currently stands at seven percent) in each member state for each child. He argues this would contribute to the reduction of intergeneration inequality and also reduce gender inequalities due to the payment to the mother. Atkinson cites a study by Levy, Luetz and Sutherland which measures the reduction of child poverty based on a child benefit at X percent of median equivalised income:

> The 10 percent benefit is estimated by Levy, Luetz, and Sutherland to reduce EU child poverty from 19.2 to 17.8 percent, and the 20 percent benefit would lower it further to 13.5 percent. A reduction of more than 5 percentage points is indeed salient. The reduction exceeds 4 percentage points in all except Belgium, Denmark, Germany, and the UK (2015, p.223).

Atkinson argues that this initial introduction of an EU-wide Child Benefit could parlay into the introduction of an EU-wide Participation Income.

Costs and Effectiveness of Increasing MI in Belgium, Sweden, and the UK

Figari, Haux, Mastaganis and Sutherland (2009) conducted a study with the aim to show how an increase in the Minimum Income rates of payment in Belgium, Sweden, and the UK would affect poverty rates, number of recipients, and total costs in the respective countries. Their findings are displayed in Table 4 below. Note that "Baseline" refers to status quo policies.

Table 4: Relative cost of effect of increases in MI schemes

		Maximum benefiti increased by		
Country	**Baseline**	**10%**	**20%**	**50%**
No. of recipients as % of working age people				
BE	12.2%	14.1%	16.5%	23.4%
SE	5.0%	5.5%	6.1%	8.4%
UK	12.2%	12.9%	13.4%	14.3%
Increase in cost of MI schemes relative to baseline				
BE		+16.6%	+36.1%	+111.4%
SE		+13.4%	+28.1%	+83.9%
UK		+25.3%	+52.2%	+139.9%
Poverty rate (at 60% of median)				
BE	9.0%	8.6%	8.3%	6.3%
SE	6.8%	5.9%	5.2%	4.0%
UK	13.5%	12.4%	11.2%	8.4%

Notes: "Working Age" is defined as being aged 16 to 64 (inclusive), excluding people in current full-time education. The cost increase relative to baseline takes into account only the additional cost for MI schemes received by households with at least one working age individual. Figures refer to various years - 2001 for Sweden, 2003 for Belgium and UK (see table A1 in Appendix 1). Source: Euromod.

Source: Reproduced from Figari *et al.* (2009) (Table 5, p.22).

The proportional increased cost of the scheme in each case is greater than the proportional increase in the payments and the cost rises particularly steeply in the UK and least steeply in Sweden. Also, the proportion of recipients increases somewhat proportionately in Sweden and at a lower rate than the payment in the UK and at a steeper rate than in Belgium (Figari *et al.*, 2009, pp. 20-22).

Further research must be conducted on the wide array of available, and yet to be constructed, Minimum Income schemes, particularly looking toward countries where it will be implemented and evaluated in the near future. As Finland has just outlined a plan to introduce a Citizen's Income-esque scheme within the next several years.

<u>Pensions</u>

Pension wealth is, in aggregate, the largest category of personal financial assets in most OECD countries, including the right to future benefits of both public and private pensions (Davies, 2009, p. 133). For purposes of this evidence review, we will focus on public pension schemes.

Public pension systems can be classified according to three dimensions. First, they can adopt a Pay-As-You-Go (PAYGO) or a fully-funded structure. Second, pension systems can either have a defined-benefit or defined-contribution structure. And third, pension systems can be Beveridgian or Bismarkian (Hachon, 2008, pp.1-2). Defined-benefit structures have a tax rate which adjusts to changes in the economic or demographic environment; whereas, defined-contribution structures have a replacement rate which adjusts to those same conditions. Most OECD countries have a defined-benefit pension system; however, Italy, for example, has elected to utilize a defined-contribution model (Hachon, 2008, p.2). Beveridgian pension systems (Canada, the Netherlands, and New Zealand) allocate the same pension to every individual; whereas, Bismarkian pension systems (France, Germany, and Italy) are dependent upon the previously-earned wages of the individual (Hachon, 2008, p.2). Japan, the United Kingdom, and the United States are examples of a mixed pension system. The Bismarckian pension system, introduced in Germany in 1889, has spread widely across Western Europe; whereas, Beverdigian non-earnings related, flat-rate benefit schemes have found a home in the Scandinavian countries. It should be noted though that many non-earnings related systems are now supplemented with a second tier contributory plan related to an individual's earnings (Davies, 2009, p.134). Over the recent decades, there has been a trend toward at least partial funding of PAYGO public systems.

The most equalizing public pension schemes are non-contributory schemes financed out of general revenue, while PAYGO schemes tend to implement an earnings ceiling which tends to be quite regressive (Davies, 2009, p.134). "On the other hand, benefits are also subject to ceilings, and sometimes floors. Where these are relatively close together, as for example Sweden, the equalizing impact of pension benefits can be very strong" (Davies, 2009, p.134).

Hachon (2008) corroborates these findings and goes further in outlining the redistributive benefits of both a defined-benefit and a defined-contribution pension scheme:

> The increase in the redistributivity of a defined-benefit pension system can: (i) decrease the taxe [*sic]* rate of the pension system; (ii) increase the capital per capita; (iii) increase the wealth and the welfare of every agent; (iv) reduce the inequalities of wealth and of welfare. However, if the pension system has a defined-contribution structure, then the only positive effect is that it increases the wealth and the utility of the poorest agents (p.19).

We will focus on two examples of public pension schemes in the EU: the Czech Republic and Germany. This section of the evidence review will conclude with a point on the important influence of regular indexation and an evidential observation of demographic shifts and their implications on public pensions, a subject needing further research and review.

Czech Republic

The Czech Republic pension security (scheme) is the largest tax-transfer programme in the country at 9.1 percent of GDP and provides replacement income through pensions to retirees, disabled persons, and survivors (Klazar and Slintakova, 2012, p.309). The programme functions as public insurance on the assumption that the free-market economy fails to secure adequate income for individuals in old age and lower levels of income inequality, particularly in Europe (Klazar and Slintakova, 2012, p.310). According to a study conducting by Klazar and Slintakova (2012), the Czech Republic pension security programme significantly reduces the inequality of lifetime earnings of the elderly, moving the Gini coefficient from 0.212 before the programme to as low as 0.177 after the implementation of the program (p.324).

The Czech Republic pension security programme has redistributed funds within one generation from higher-income people to lower-income people, as well as from men to women. The Gini coefficients reflect this redistribution, as the impact of social security income has been more equal than market incomes. Klazar and Slintakova (2012) attribute these results by "interrelated influence of the pension formula and the shape of the lifelong earnings function" (p.325).

$$\text{PENSION} = [(\text{BPENSION} * \text{TPENSION}) + \text{BP}] * M * b$$

We have included the Czech Republic pension security formula above, where the present value of the lifetime pension (PENSION), the number of months spent in retirement (M), the probability to survive (b), the basic pension (BP), the basis (BPENSION), and the earnings at a certain rate (TPENSION) are represented (Klazar and Slintakova, 2012, pp.317-318).

Germany

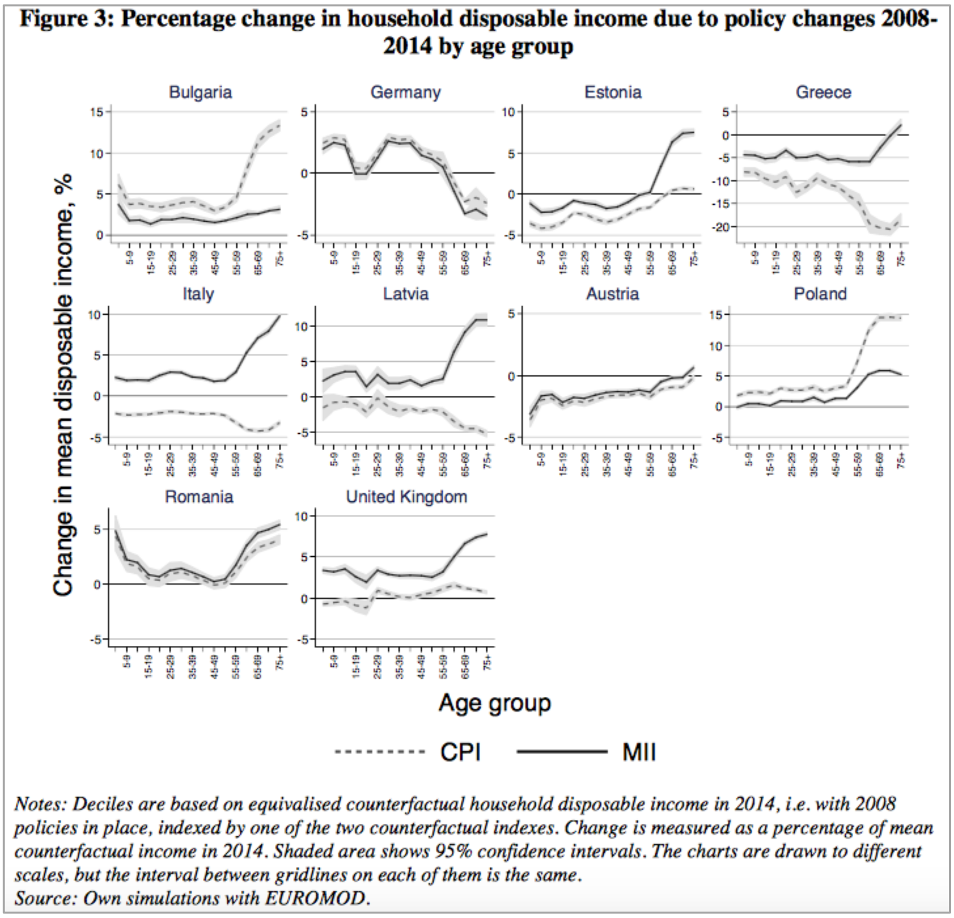
After the German reunification, large economic differences between eastern and western Germany existed. The equalisation of cross-regional disparities in living standards became an important policy target. One of the policy tools used then and now is the German federal social security system, which is financed mainly by contributions and "plays a decisive role in this process of indirect regional income redistribution (Schwengler and Bruckmeier, 2010, p.1). The German federal social security transfer "follow[s] motives of inter-temporal redistribution within an individual's life-cycle insuring individuals against risks" (Bartels, 2011, p.1). The results of a review of the German welfare state, particularly the social security system, confirm that inequality in the long-term is lower than annually (short-term) (Bartels, 2011). One of the main drivers of this long-term inequality reduction is the social security transfers over an individual's lifetime, a form of insurance.

> Results show that the German welfare state clearly gives priority to insurance over redistribution. The scope of this priority depends on the stage of the life-cycle. When persons are young, state intervention also notably redistributes between people through the progressive tax system and public transfers. Getting older and reaching retirement age intra-individual redistribution via social security pensions becomes central. Social security pensions reduce intra-individual inequality by 70 percent for the oldest age group. In an individual's life-cycle perspective one could thus conclude that the welfare state evolves from being a poverty reliever in earlier years to an insurer in later years. Overall, in his role as an insurer, social security pensions is the most important instrument of the welfare state in smoothing income over time (Bartels, 2011, p.14).

Regular Indexation

Throughout the EU, pensions obligations that were subject to statutory indexation led to income increases and a more favourable position for the elderly. Non-pension benefits are typically adjusted on an *ad hoc* basis, with increases not necessarily made each year (De Agostini *et al.*, 2015, p.3; p.14). During the period of 2008 to 2014, households experiencing income losses were mainly driven by the non-indexation of non-pension benefits, i.e. the growth of non-pension benefits for families were lagging behind the growth in prices, thus eroding the real benefit values (De Agostini *et al.*, 2015, p.3). We discuss this point further in the next section.

Figure 7: Percentage change in household disposable income due to policy changes 2008-2014 by age group



Source: Reproduced from De Agostini, P., Paulus, A., and Tasseva, I. (2015). "The effect of tax-benefit changes on the income distribution in 2008-2014." (Figure 3, p.14).

Notes: CPI - Consumer Prices Index; MII - Market Income Index.

According to Figure 7 above, the elderly have mostly experienced larger gains, or smaller losses, relative to younger age groups due to statutory indexation of public pensions. The elderly only saw their incomes slightly eroded in Germany due to an increased tax liability for pensioners (CPI and MII), as well as in Greece, Italy and Latvia (CPI only) (De Agostini *et al.*, 2015, p.13). The elderly populations (65 years and older) of Bulgaria, Estonia, Greece (MII), Italy (MII), Latvia (MII), Austria, Poland, Romania, and the UK all saw a positive percentage change in household disposable income due to policy changes between 2008 and 2014 (De Agostini *et al.*, 2015, p.13).

> Nominal cuts in public pensions in Greece also explained a large proportion of the income losses across the decile groups. In contrast, in Bulgaria and Poland, growth in public pensions ahead of prices contributed to most of the income increases across the distribution in 2008-14 (De Agostini *et al.*, 2015, p.16).

Demographic Shifts

As part of a much larger debate surrounding the effectiveness and viability of welfare states and cash transfer systems is the issue of demographic change. Burtless (2009) cautions that shifts in demography will present challenges to public budgets, as well as severely impact income inequality and poverty within societies (p. 435). He notes that as the post-retirement age population grows larger, a larger percentage of adults will begin to depend solely on public pensions and transfers for support. And, because public pensions tend to be lower than pre-retirement wages, the annual incomes of many families will be relatively smaller (Burtless, 2009, pp.435-436). Burtless then details what will be a common policy reaction by governments and its negative impact on inequality:

> To remain solvent, public pension systems in many countries must raise the benefit-claiming age, which will reduce or eliminate pensions for people who are in late middle age. Most affected workers will continue to work a little longer, but those who cannot keep or find jobs may experience considerable income loss, pushing up inequality (2009, p.436).

This is what Atkinson (2015) would call the "scaling back of state [public] pensions" and he says contributes to the growth of the private pension fund, paradoxically leading to a greater emphasis on short-term profitability. "I say 'paradoxically' because the pension funds are by definition concerned with long-term savings […] the nature of competition in this market that the primary concern of fund managers is the immediate investment performance" (p.257). Atkinson calls on governments to renew investment in state pensions, which will reduce reliance on private pensions, and allow firms to invest with long-term growth and expansion in mind (2015, p.257).

A brief note on Public vs. Private Pensions

In some cases, private pensions are a source of growing inequality. However, a study in 2007 cited by Esping-Andersen and Myles (2009) revealed that private pensions reduce inequality in France but raise inequality in Sweden (p.658). In France, private pension schemes are subject to government mandating and result in a "near-universal inclusion among employees"; while in Sweden, the private pension system is very small and supplements public pensions for fortunate individuals, i.e. it is linked to earnings (Esping-Andersen and Myles, 2009, p.658).

<u>*Unemployment Benefits*</u>

Unemployment benefits are a type of welfare program where governments provide in-cash and/or in-kind transfers to individuals who are unemployed or underemployed and are subject to various contribution conditions depending on the government administering them. Unemployment benefits redistribute income from individuals at low risk of unemployment to those at high risk (Schwengler and Bruckmeier, 2010, p.3) and, to the same extent, smooth income from periods of work to periods of unemployment. The typical unemployment benefit scheme allows for benefits to be paid out only to those who lose their employment voluntarily. People are ineligible for benefit if they have voluntarily left their job or were dismissed for poor conduct. This is one of many “contribution conditions” for unemployment benefit (Atkinson, 2015, pp.253-254).

The unemployed account for a very small fraction of welfare spending. In 2014-2015 spending in the UK on benefits for the unemployed was less than 4 percent of social security and tax credit spending. Or, as Hills writes, is “a tenth of the proportion most people think goes to unemployed people” (Atkinson, 2015, p.227; Hills, 2015). Atkinson also refutes the economic analysis that unemployment benefits cause increased and prolonged unemployment, as it fails to take into consideration the institutional conditions. “Social insurance increases the attractiveness of working in the market economy, rather than in the informal or domestic economy, and helps bind people into participation” (2015, pp.254-255).

Unemployment Benefit coverage has decreased in the majority of European Union member nations over the period of 1995 to 2005. Unemployment benefit coverage is defined “as the proportion of those who are classified as unemployed according to the ILO definition who receive benefits (including unemployment assistance as well as unemployment insurance)” (Atkinson, 2015, p.227). The only countries to see coverage increases over the 1995 to 2005 timeframe were: Germany, Greece, Luxembourg, Norway, Portugal, and Slovenia. While the following countries all saw coverage decline over the same timeframe: Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Hungary, Iceland, Italy, Netherlands, Poland, Slovakia, Spain, Switzerland, and the UK (Atkinson, 2015).

United Kingdom

Currently in the UK, people who are unemployed, underemployed, or inactive can receive contribution- or income-based Jobseekers Allowance (JSA) or Income Support (IS), administered by the Department for Work and Pensions (DWP).

[The contribution-based JSA] is available for individuals who have paid sufficient National Insurance Contribution[s] in the two years before becoming unemployed, and it lasts for 182 days. Income Support is mainly available to lone parents [with very young children], carers and those unable to work, while income-based JSA is conditional on participation in activation policies. Income-based JSA and Income Support are means tested against household income, savings and unearned income" (Pareliussen, 2013, p.27). Individuals qualifying for contribution-based JSA may also claim income-based JSA for additional payments (eg for family dependents).

Under the most recent UK Labour Government (1997-2010), there was an expansion of means-testing of unemployment benefits. Research by Brewer and Clark (2003) examined the effectiveness of this expanded means-testing. The clearest advantage of increasing means-tested benefits is that the strategy allows for larger increases in support to those who claim them than would the same expenditure allocated universally (Brewer and Clark, 2003, pp.1-3). Brewer and Clark (2003) focus on changes in people's behaviours by altering incentives to work due to receipt of social security and in-work benefits. The UK Labour Government expanded means-testing in order to redistribute money to its preferred groups (pensioners and children) without incurring some of the disincentive problems associated with means-testing. One way of achieving this was emphasising in-work support and reductions in the rate of benefit withdrawal. This proved to create both positive and negative outcomes.

"The effect on the incentive to enter work is mixed" (Brewer and Clark, 2003, p.46). The increased in-work support meant that primary earners faced more of an incentive to work than was previously the case. The extension of means-testing to many families (through in-work support) who would previously have been too rich to qualify "means that second earners in couples now face weaker incentives to enter work than previously" (Brewer and Clark, 2003, p.46). "Whether these changes are seen as beneficial will depend on the extent to which the Government cares about reducing the number of workless households as against increasing the total level of workforce participation" (Brewer and Clark, 2003, p.46). Brewer and Clark (2003) also note that the increased means-testing of unemployment benefits have "exacerbated" the number of low-income people remaining single, having children, and to deceiving the benefit authorities about their cohabitation (p.47). In a more recent paper, Brewer (2007) argued that these reforms to active labour market policies (ALMP) were primarily motivated by the desire to "reduce spending on welfare benefits, and to increase labour supply and thereby GDP" (p.27). Or more plainly, inequality reduction was not the main target in 2007.

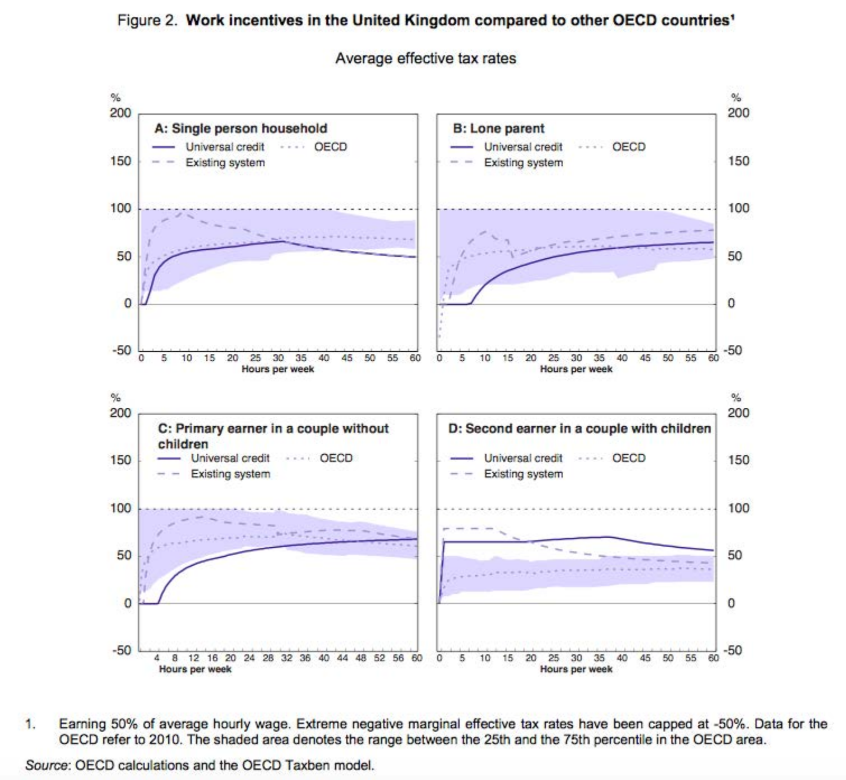
A recent reform in the UK is the phased introduction of a Universal Credit System.

UK Universal Credit (Pareliussen, 2013)

The Universal Credit reform in the UK requires that the main means-tested benefits, except Council Tax benefit, be pooled into one single benefit with one taper rate. The stated goals of the Universal Credit are that it would increase incentives to work, diminish complexity, reduce poverty, and contain a trend of rising welfare costs (Pareliussen, 2013, p.3).

As noted in Figure 8 (below) we see that, except for second earners, Universal Credit generally provides better work incentives than both the current system and the OECD average, particularly when working a low amount of hours. This is especially true for primary earners in couples, who enjoy an earnings disregard which is very high by OECD standards (Pareliussen, 2013, pp.7-8).

Figure 8: Work incentives in the United Kingdom compared to other OECD countries



Source: Reproduced from Pareliussen (2013) (Figure 2, p.9).

"Second earners with children on the other hand, are outliers in terms of poor incentives compared to other OECD countries (Figure 2, Panel D)" (Pareliussen, 2013, pp.7-8). This reflects that other OECD countries have better incentives for second earners, i.e. benefits have been tapered off against the primary earner's income. The literature does not comment on the likely impact of Universal Credit on inequality.

Germany

As is the case across Europe, the German welfare state has been facing an increasing financial burden, one cause of this burden being high unemployment rates (Schwengler and Bruckmeier, 2010, p.6). Due to this burden, in 2004 and 2005, significant reforms in the welfare system were implemented which affected parts of the unemployment benefit scheme, i.e. tightening parameters of eligibility which directly influenced spatial disparities of post-government income (Schwengler and Bruckmeier, 2010, p.6). Means-tested benefits in Germany increased in nominal terms between 2008 and 2014; however, they lagged behind the growth in prices and the real value of the benefits was eroded and caused income losses at the bottom of the distribution (De Agostini *et al.*, 2015, pp.14-15). As of 2010, "Unemployed people with children are entitled to unemployment benefits of 67 per cent of their last net income and unemployed people without children are entitled to 60 per cent" (Schwengler and Bruckmeier, 2010, p.2). Although reducing regional income disparities is not the main aim of federal social insurance in Germany, and elsewhere, equalising effects on income disparities are likely to be expected (Schwengler and Bruckmeier, 2010, p.2).

Bartels (2011) observes the German welfare state, particularly its unemployment benefits and social security pensions, as redistributing through insurance to individuals over their life-cycles, insuring individuals against risks (p.1). Her results confirm that, in Germany and as is usually the case, inequality in the long-term is lower than when measured in the short-term, due to Germany giving priority to insurance (unemployment) over redistribution. "In an individual's life-cycle perspective one could thus conclude that the welfare states evolves from being a poverty reliever in earlier years to an insurer in later years." (Bartels, 2011, p.14).

Regular Indexation

As stated earlier, in the UK and Germany, benefit levels did not keep up with the rate of inflation during the period examined by De Agostini *et al.*, (2015) 2008-2012. However, in countries with indexation, such as Estonia, Greece, Latvia, and Austria, those at the bottom of the distribution saw their incomes rising due to increases in means-tested, non-pension benefits (De Agostini *et al*., 2015, p.15). "A key general lesson is that regular indexation is important" (De Agostini *et al.*, 2015, p.21). Nearly all European countries subject pensions to statutory indexation, yet the indexation of non-pension and non-contributory benefits is much less common and problematic in terms of equalising incomes.

Housing

Assistance with housing costs in the form of cash-transfers or help in-kind plays a crucial role in reducing household-income inequality across the EU and their absence from this evidence review should not be inferred as giving the area any less significance. However, we believe that this topic should be left to a future evidence review.

3.6 Concluding Thoughts and Recommendations

The evidence reviewed demonstrates that welfare states are successful institutions at redistributing resources in an egalitarian direction, giving greatest benefit to the worst-off, yet their composition can take many forms and behave differently in many contexts. Atkinson and Piketty (and certainly others) argue that governments must constantly evaluate methodologies and institutions within welfare states in order to increase their effectiveness, efficiency, and public support. Piketty (2014), in forecasting the future of the modern welfare state, says the debate about the welfare state in the decades to come will revolve mainly around the issues of organization, modernization, and consolidation. “If we do not constantly ask how to adapt our social services to the public’s needs, the consensus supporting high levels of taxation and therefore the social state may not last forever” (p.483). Atkinson (2015) follows this by asserting that fiscal problems of a welfare state in a globalized world will not simply be fixed by transferring social spending from the public to the private sector (p. 270). These viewpoints emphasise the importance of modern welfare states co-coordinating to address “new inequalities” that emerge as a result of multi-dimensional, multi-deprivational institutional shortcomings.

Additionally, it is important to examine the role of welfare states as they relate to inequality from a political economy viewpoint. The distribution of political power is important in understanding the effectiveness of the modern welfare state. On average, those with higher net wealth and income tend to vote for individuals whose policies tend to curb benefits for those at the bottom of the distribution or curb the costs of providing those benefits for those at the top. These policies often manifest in net cash transfers that are more targeted and less universalistic. According to McKnight (2015), “The within country across time evidence presented does not support the case that greater targeting is more effective at reducing poverty or inequality…[and] the reduction of income inequality and the incidence of poverty is generally lower” (p.27).

This raises a larger concern regarding the ability of those who can afford to be clever in reducing their contributory burden at the top or the distributional benefit at the middle and the bottom: welfare regimes can attempt to raise the floor under which no one will fall, but they will remain ineffective should the ceiling continue to race away.

Understanding the true impact of a welfare state on reducing household-income inequality is challenging, to say the least. As Esping-Andersen and Myles write, in order to really estimate redistribution effects of a welfare state, we would need to invent a counter-factual “virgin distribution that was unaffected by social policy altogether” (2009, p.641). No such possibility exists in the real world. As we mentioned above, the three policy tools we have chosen to examine are only a fraction of all tools available to governments within welfare states to reduce inequality. We view this evidence review to begin to understand the routes governments have taken, both successfully and unsuccessfully, to develop welfare states for the problems of the modern day.

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