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Correspondence address: francesco.bogliacino@gmail.com
General contact: gini@uva.nl

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Drivers of Growing Inequalities

Gabriele Ballarino
Francesco Bogliacino
Michela Braga
Massimiliano Bratti
Daniele Checchi
Antonio Filippin
Virginia Maestri
Elena Meschi
Francesco Scervini

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1. **Educational Inequality**

Gabriele Ballarino, Michela Braga, Massimiliano Bratti, Daniele Checchi, Antonio Filippin, Elena Meschi, Francesco Scervini

1.1. **Trends**

1.1.1. **Measurement of educational inequality**

Educational inequality can be defined along two dimensions, inclusion and fairness as suggested by OECD (2007). Inclusion implies a minimum standard of education for all and has to do with whether overall levels of provision are sufficient and effective. Fairness implies that personal and social circumstances, such as gender, socio-economic status, ethnicity, region of residence, should not be an obstacle to educational success. Given the multidimensional nature of educational inequality, when trying to measure it one has to first clarify what definition of inequality has in mind. The first dimension of inequality can be captured looking at the “stock” of education individuals receive and measuring how disperse are the educational levels across the population (static measure). The second dimension is instead related to inequality of opportunities and can be quantified looking at the extent to which individuals’ educational achievement depends on their socioeconomic background.

Regarding the first dimension, describing the distribution of education across the population is not trivial and the possibility of computing synthetic indices of dispersion depends on the underlying variables used to measure educational levels. The literature has identified three main indicators of individual education, namely the number of years of schooling completed, the levels and types of qualification achieved and test scores capturing actual competences. Each of these measures have advantages and drawbacks (a careful discussion of these issues is provided in Meschi and Scervini, 2010) and inequality measures must fit their characteristics.

Typical inequality indices, such as Gini, Theil and Atkinson do not fit well to discrete variables, such as the highest qualification achieved. On the other side, the length of formal education is usually clustered at cycle achievement levels, so that – for instance – different duration of lower secondary cycle can lead *per se* to different values of inequality indices even in two otherwise perfectly symmetric systems. Moreover, opposite to income that is virtually unbounded in the upper tail, education cannot exceed a maximum level represented by postgraduate education.
Other types of widely used inequality indicators are not usable for categorical variables either. When referred to income inequality, percentile ratios measure how many times the x-th percentile individual is richer than the y-th percentile individual. Applying such an index to a categorical variable is not very informative for two reasons: first, there is no cardinality in the measure, since a person attaining, for instance, ISCED-41 is not educated twice as much as an individual attaining ISCED-2. Second, given the little variability, the resulting level of inequality would be the same in most of the relevant cases. Finally, inequality indices always refer to the relative distance among individuals. If a population is partitioned in very few categories, the relative distance is 0 in most cases, leading to a bad indicator for inequality.

We reviewed the methodological problems related to the construction of educational inequality indicators in the state of the art report (“Inequalities’ Impacts: State of the Art Review” GINI DP re1). The survey has identified significant shortcomings in the available measures of educational inequality and we have therefore created a new dataset that constitutes a major advancement in the analysis of educational inequality in Europe and that is made available to the research community. In particular, the dataset created by Meschi and Scervini (see Meschi and Scervini, 2010) collects measures of educational level and inequality for 31 countries over several birth cohorts. Drawing on four representative international datasets (ESS2, EUSILC3, IALS4 and ISSP5), various measures of individual educational attainment have been collected and aggregated to generate synthetic indices of education level and dispersion by countries and birth cohorts. The paper provides a detailed description of the procedures and methodologies adopted to build the new dataset, analyses the validity and consistency of the measures across surveys.

This new dataset presents some remarkable novelties compared to the existing datasets on educational attainment (e.g. Barro and Lee (1996, 2001, 2010); Cohen and Soto (2007)). First of all, the data are organised by birth cohort rather than survey years. This allows to enlarge the period covered, as it contains information from the beginning of the 20s, while existing datasets generally start from the 50s or 60s (see, for example, Barro and Lee (2010); Cohen and Soto (2007)). Moreover, this approach allows to observe the evolution of educational attainment for individuals born in different periods, possibly characterized by distinct institutional features of the school systems and this is particularly useful for analyses of the determinants of educational outcomes. Since formal education occurs mainly in early stage of life and remains invariant over the life cycle, a cohort approach seems more sensible in this case. Second, the dataset uses multiple sources to create the aggregate measures and this improves

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1 ISCED is the International Standard Classification of Education developed by UNESCO in 1976
2 European Social Survey
3 European Union Statistics on Income and Living Conditions
4 International Adult Literacy Survey
5 International Social Survey Programm
the robustness and reliability of the data. Third, this new dataset presents three alternative (but complementary) measures of education. Beside the standard variable on years of education completed, it also contains information on highest qualification achieved and on individual actual competences, that are considered better measures of individual human capital (Hanushek and Kimko, 2000; Hanushek and Woessmann, 2010). Fourth, the new measure of years of schooling is directly derived from microdata and therefore based on people’s answers and not computed by imputation starting from the information on educational attainment that typically only distinguishes six or less categories (see Barro and Lee (2010)). Finally, the dataset is the first one to provide information not only on educational level, but also on educational distribution, using a wide range of synthetic indices calculated on years of schooling (namely standard deviation, coefficient of variation, GINI index, Theil index, mean logarithmic deviation, and Atkinson indices with different inequality aversion parameters).

The inequality measures provided in the dataset by Meschi and Scervini (2010) and discussed above describe how much education is dispersed in a population at a given moment in a given society. However – as pointed out previously – there is another concept of education inequality more closely related to equality of education: intergenerational mobility and equality of opportunity in education. Measuring this kind of inequality is much more difficult than the simple dispersion for two reasons: on the one side, we need data on education or competences of parents and children; on the other, intergenerational mobility deals with two dimensions: education of parents and education of children. This means that each scalar of an education distribution is replaced by a vector with at least two elements: parents’ and children’ education.

Indeed, the most used way to represent intergenerational mobility is the transition matrix, in which each cell includes the share of households with the corresponding set of educational (or competence) levels. The more immediate consequence is that it is very difficult to summarize such matrices with a single index. Nevertheless, there are ways to give a rough idea of intergenerational mobility in a society. First of all, if we look at absolute levels, we can simply count the share of individuals who improved (or worsened) their position with respect to their parents.6 Second, if we want to measure the level of mobility, we can simply count how many individuals stay in the diagonal cells of the transition matrix, that are those with the same education as their parents, either in absolute or in relative terms.

However, opposite to the case of inequality, in the literature there is not a set of frequently used and agreed indices of intergenerational mobility. It is possible, indeed, to build several indicators of intergenerational mobility, based on the correlation between parents’ and children’ position. Two recent examples are Di Paolo et al (2010),

6 In relative terms it is meaningless to count how many people improved or worsened their position, since it is a zero-sum transition.
who exploit the differences between fathers and mothers and sons and daughters, and Checchi et al (2008) who looks at the time path of autocorrelation across cohorts.

Once reviewed the possible definition of education and the related inequality measures, we can focus on trends and inequality in education attainment.

1.1.2. The expansion of education

Figures 1-6 describe the process of school expansion, for the three main school levels: lower secondary, higher secondary and tertiary, using ESS data from waves 2002-2008 divided into 3-years cohorts of birth (see Meschi and Scervini, 2010). We do not consider primary school, as in most of the countries we observe participation rate at this level was already close to 100% for the earliest cohorts. For the three levels we consider, we look at all individuals who reached it: individuals who achieved tertiary education are thus included also in lower and higher secondary. For each level, we present two graphs: the first pools all the countries together, giving a glimpse of the aggregate process, and distinguishing genders, while the second one divides the sample into 5 geo-political areas: Scandinavia (including Denmark, Finland, Norway and Sweden); British Islands (Ireland, United Kingdom); Central Europe (Austria, Belgium, France, Germany, Luxemburg, the Netherlands and Switzerland); Mediterranean (Greece, Italy, Portugal, Spain) and Eastern Europe (former Socialist countries: Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Poland, Romania, Slovak Republic and Slovenia).

We start our comment at the lower secondary level. Figure 1 shows the typical s-shaped, three-stage pattern of educational expansion (Meyer et al. 1977; 1992; Ballarino, Meschi and Scervini, 2012). At the start, few people participate and expansion is slow. We see only the final part of this stage, as our oldest cohorts show an already high level of participation, starting from over 40% for women and over 50% for men. Then, with the cohorts born in the 30s and schooled after WW2, the process gets faster, as the proportion of participants increases (stage of “explosion”). Finally, a third stage is reached, where expansion gets slow again, approaching a saturation point of complete participation, above 90%. We can observe a catch-up process on the part of females: they start disadvantaged, but then their curve gets steeper and they catch up with males by the late 60s. There is just one apparent irregularity in the pattern, concerning individuals born in the 30s: this has to do with WW2, who interrupted the normal social life, including participation to school.
**Figure 1: Lower secondary school — All countries**

![Graph showing the percentage of the population at least lower secondary level by cohort for males and females across different age groups.](image)

*Source: Meschi and Scervini, 2010*

**Figure 2: Lower secondary school — By geopolitical area and birth year**

![Graphs showing the percentage of the population at least lower secondary level by cohort for different geopolitical areas (Nordic, AngloSaxon, Central EU, Mediterranean, Eastern EU) for males and females.](image)

*Source: Meschi and Scervini, 2010*
Figure 2 breaks down our sample into the 5 geo-political areas defined above. A process of convergence can be observed: while in the oldest cohorts the levels of the different geo-political areas vary substantially, from more than 60% to about 20%, in the more recent cohorts the variation goes from 90% to 100%. Areas starting at a lower level grow faster. The Central European and the Nordic areas start at the highest level, above 60%. These areas are those where mass schooling started earlier (Brint 2006), because of both cultural and geo-political reasons. The Central European area has a more regular growth, while the Nordic has a flatter curve in the earlier cohorts, then explodes with the cohorts born in the 30s and reaches the saturation point already with people born after WW2. The Eastern European area experiences a steeper increase with the cohorts born after 1935, so that it outperforms the Central European area by the cohort born after WW2. This growth is related to the Communist regimes then ruling the area, who fostered school participation on the part of the lower classes as a means to reach their egalitarian goals. The British Islands area, that is the UK (we are considering the population, so Ireland does not weight much in this two-country area) starts at a considerably lower level, and fully catches up only with the cohort born in the 70s. The same catch-up point can be observed for the Mediterranean area, who starts at the lowest (below 30%) and grows slowly until cohorts born after WW2. It is in this area, and to a lesser extent in the Eastern one, that the dump in participation for the cohorts born in the 30s can be observed. The dump could also be related, besides WW2, on the Spanish Civil War.

**Figure 3: Upper secondary school — All countries**

Source: Meschi and Scervini, 2010
Figure 3 shows the pattern of participation to higher secondary school. The logistic pattern is still to be seen, but is much less clear than for lower secondary (Ballarino, Meschi and Scervini, Gini DP n.3.3.2). The process gets faster with the 30s, as at the previous level, but the stage of saturation is reached later, with the cohorts born in the late 70, and at a lower level, between 70 and 80%. Also in this case there are some signs of an effect of WW2 for the cohort born in the early 30s. The gender effect is stronger: at the early stage of growth, female disadvantage is stronger than for lower secondary (this could depend on the fact that the early expansion of higher secondary education had a strong vocational component, particularly addressed to males); then the gender difference in the steepness of the second stage is stronger than in lower secondary, so that the catch-up still takes place for the cohorts born in the 60s. Despite some irregularities, the most recent cohorts show signs of a female advantage in higher secondary achievement.

Figure 4 shows the pattern of participation to upper secondary school, broken down by geopolitical area. A convergence pattern can still be seen, but not as clear as for lower secondary, perhaps because of lower saturation effects. In fact, we observe a substantial convergence for the Nordic, Central and Eastern areas since the cohorts born in the 50s, while the British Islands and the Mediterranean area lay behind, even in the most recent cohorts. Concerning gender, we observe different timings of the catch-up process: the Scandinavian area comes first (at the start of the 50s), followed by the British Islands and the Eastern area in the following decade. In the Central
European area the catch-up takes place later, only with the cohort born in the second half of the 60s, as in the case of the Mediterranean area, albeit at lower levels.

Figure 5: Tertiary school — All countries

Finally, figure 5 shows the pattern of expansion of participation to higher education (defined as tertiary education only, excluding vocational post-secondary tracks). The s-shaped pattern is not there anymore. On the contrary, both genders show something like a two-stage pattern (Ballarino, Meschi and Scervini, 2012). Men grow in the cohorts born in the 30s and 40s (who went to university after WW2), then the growth stops, to start again for the cohorts born in the 60s and 70s. Women start lower, grow as men with the cohorts of the 30s and the 40s, then keep on growing, catch up with the cohorts born in the 60s and then show growth rates higher than their male counterpart. In general, the gender reversal pattern is stronger at this level than at the previous ones. A two-stage expansion pattern quite similar to the one we find is to be seen in Schofer and Meyer (2005, figure 1), who plot the world’s higher education students per 10,000 capita in the XX century.

Source: Meschi and Scervini, 2010
If we look at the geo-political areas (figure 6), we see no process of convergence at all: on the contrary, variation among areas appears somehow to increase over cohorts. In the oldest cohorts, the Nordic, Central European and Anglo-Saxon areas are those with higher participation, as it was for the lower levels, but afterwards, the Central Europe remains somewhat behind and does not catch up. The difference depends on the educational policies of Germany and German-speaking countries, that for long have constrained access to tertiary education while pushing higher secondary vocational training (Ballarino, Meschi and Scervini, 2012). Something similar can be said for the Eastern European areas, where Communist policies tightly controlled access to tertiary education.

The graph also gives more detail on the two-stage pattern of expansion observed above with the pooled countries: the first stage was stronger in the early comers Nordic and Anglo-Saxon areas, while the second was strong in all the areas, but especially in the Anglo-Saxon and in the Central European areas. Concerning the gender reversal pattern, this is stronger in the Nordic and in the Eastern European areas, where females catch up with males already with the cohort born in the first half of the 40s. In the Anglo-Saxon and in the Central European areas the catch up takes places 20-25 years later, and there is no female bias in the more recent cohorts. In the Mediterranean area there are more irregularities, so it is not really clear when the catch-up precisely takes places, but in the younger cohorts there seems to be a female advantage.
Educational inequality

As pointed out above, participation to schooling expanded hugely during the period we observe. How was this process related to its distribution? We still use the ESS sample, as in the section above, but – in order to have a synthetic measure of inequality in school achievement – we measure individuals’ years of education. This allows us to compute a Gini index for inequality in this distribution. Graph 7 shows the general pattern, which is a decreasing one, as we would have expected. Theoretically, the pattern of schooling inequality has an inverse-U shaped, with low inequality at the outset, when no one goes to school, then an increase, when school is for an élite from the population, and finally decreases with mass and universal schooling (Meschi and Scervini, 2012). Here we just see the second part of the curve, with just a glimpse at the first stage of inequality growth. Then, the downward pattern is almost linear, albeit with some slowing down for the most recent cohorts. The paper by Meschi and Scervini suggests a possible explanation for such a “flattening” of the reduction of inequality (Meschi and Scervini, 2012). Since the saturation of upper secondary level, the process of education expansion is being realized through an increase of the length and specialization of tertiary education, leading to a possible increase of inequality. This effect is still somehow weak, but there is evidence confirming this trend.

Figure 7: Educational inequality – All countries

Source: Meschi and Scervini, 2010
The comparative pattern is shown in figure 8. The Mediterranean area stands out, as it shows a much higher level of inequality in school participation. School systems in this area have been more elitist than elsewhere for long, with much less people accessing post-compulsory education. Accordingly, the decrease of the Gini index is much stronger here, but convergence is not reached, and in this area we observe more inequality in schooling even in the cohorts born in the 70s and early 80s. In this more backward area we also observe the final part of the increase of schooling inequality, something apparent also in the Eastern area. As we would have expected, the Nordic area is the one showing the strongest reduction over time and the lowest present level of school inequality.

**Figure 8: Educational inequality — By geopolitical area and birth year**

![Graph showing educational inequality by geopolitical area and birth year](source: Meschi and Scervini, 2010)

In the previous part of the present discussion we considered only “institutional” education, which is usually referred to as “school”, spanning from pre-primary level to academic education. However, this is not the only way through which individuals get competences: “lifelong learning” is indeed the process of acquiring (or providing, depending on the perspective) education and competences even after the exit from formal scholastic institutions. Of course, adults’ education may have characteristics and goals very different from the previous “general” education (i.e.: more focused to the labour market, targeted to specific tasks or competences), but their importance is not necessarily lower. Therefore it is relevant to analyse inequality and heterogeneity also with respect to this aspect.
Data availability prevents us for providing an up-to-date picture of the formation of competences, since IALS survey was conducted in 1994-98, it was then followed by a second wave in 2003 (called ALL) on a very limited number of countries (6) and we have to wait until 2013 in order to obtain new data from PIACC. However, using ALL in some explanatory analysis and referring to the Italian case we have found that competences decline with age (in an inverted U-shaped), increase in education and labour market experience, but they still reflect parental education. We also found that formal education play a partial substitution effect in competence formation, as it can be easily seen from the following table.

Table 1. Median test score — standardised factor extracted from four areas of adult competences — ALL survey — Italy 2003 —

<table>
<thead>
<tr>
<th>EDUCATIONAL ATTAINMENT OF SON</th>
<th>LOWER SECONDARY OR LESS</th>
<th>UPPER SECONDARY</th>
<th>UNIVERSITY</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>lower secondary or less</td>
<td>-0.48</td>
<td>0.35</td>
<td>0.71</td>
<td>-0.11</td>
</tr>
<tr>
<td>upper secondary</td>
<td>0.27</td>
<td>0.57</td>
<td>0.74</td>
<td>0.51</td>
</tr>
<tr>
<td>university</td>
<td>0.72</td>
<td>0.66</td>
<td>0.91</td>
<td>0.73</td>
</tr>
<tr>
<td>total</td>
<td>-0.42</td>
<td>0.41</td>
<td>0.76</td>
<td>0.00</td>
</tr>
</tbody>
</table>

The same idea may also be associated to the following graph, which depicts the distribution of competences according to years of schooling and parental education: it is clearly noticeable (and it can also be made more rigorous by introducing the interaction between parental education and own education when estimating the competence formation) that schooling may partially compensate for disadvantages in family background.

Figure 9: Distribution of competences (prose ability) by education of both generations — Italy ALL 2003
One may wonder why should we worry about competences. Empirical evidence suggests that even in regulated labour market competence levels make a difference, both in employment probability and in earnings.

Figure 10: Marginal contribution of competences to employment probability, net of formal education — Italy ALL 2003 (gender, age and regional controls included)

As long as these results will be confirmed for other countries, we have found an additional channel through which equalising education may contribute to reducing income inequality: by favouring the accumulation of competences, more intensely for children from disadvantaged backgrounds, it helps the transition to employment and earnings, reducing the gap associated to social stratification.

1.2. Drivers

Over the last century, most countries experienced a significant increase in the average level of schooling and a reduction in the dispersion of educational attainments across the population. Nevertheless, education still remains unequally distributed and highly correlated with family background.

Inequality in educational attainment is a relative new form of inequality which clearly interacts with income inequality at the beginning and at the end of skill formation. According to sociological studies inequality in parental background affects educational achievements. Similarly, there is an extensive literature on intergenerational mobility which highlights a strong and persistent link between parents and children educational attainment (Black
and Devereux, 2010, for a review). This evidence suggests that the opportunities remain unevenly spread across the population and that life-chances of individuals reflect factors for which they are not responsible. However, it is not clear whether parental social conditions affects children education through financial resources, cultural resources or a combination of the two. As argued in the previous section, the average level of schooling, the dispersion of educational levels and the extent to which individual educational attainment depends on parental background vary extensively across countries and over time. In what follows we present the results of very recent researches which shed light on possible explanation for such dynamics.

1.2.1. What is the role of family background?

Gaps in educational attainments tend to persist across generations and it is well-known in the literature that the socio-economic status of the parents is usually a very good predictor of the outcomes of their offspring. The channels through which such a persistence can occur can be either genetic or related to the environment. Although the evidence about causality of such links is rather weak, several characteristics of the family background have been shown to systematically correlate with the family educational attainments (income, intact household, number of children, early pregnancy, etc.). The effect of such variables has always been studied thinking as the cognitive skills as the media through which educational inequality perpetuates. It has been observer, however, that the advantages of the children of successful parents go considerably beyond the benefits of superior education, the inheritance of wealth, or the genetic inheritance of cognitive ability.

Only quite recently some attention has been devoted to additional factors that now go under the label of “non-cognitive skills.” In general, non-cognitive skills are defined as personality traits that are weakly correlated with measures of intelligence. In this broad concept economists have usually investigated the so-called “Big Five” factors: agreeableness, conscientiousness, emotional stability, extraversion and autonomy. Other commonly used measures include the locus of control (Caraloc) and the Lawseq self-esteem score, but also attitudes toward risk and educational aspirations and expectations. Since then many other authors have emphasized the role played by non-cognitive skills, genetically transmitted or learned from parents that act as role models, in explaining economic success and gaps in attainments. However, the current literature on the economic relevance of non-cognitive skills tends to treat these measures as inputs that enter the “black-box” of the skill production function. James Heckman and coauthors have shown that gaps between children from different backgrounds open up very early in life, as soon as in pre-school age, and then tend to persist and stay roughly constant over the lifetime. They argue that insufficient investment in some of these skills early in life has long-lasting consequences that are very difficult
or costly to revert. Note how this finding clearly locates the rising of the problem in a period in which the role of the parents is the most important.

An output of the GINI project is the paper by Filippin and Paccagnella which contributes to this strand of the literature by analysing the role possibly played by a single non-cognitive skill, namely self-confidence, defined as the beliefs over one’s unknown level of cognitive ability (Filippin and Paccagnella, 2012). The paper considers a model which entails the simplest possible multidimensional vector of skills, containing only two elements: a cognitive skill (innate ability) and a non-cognitive one (self-confidence). The use of such a framework is neither meant to deny the importance of other skills, nor the well-established fact that cognitive and non-cognitive abilities are multidimensional in nature, nor to downplay the significance of the interaction among them. It simply reflects the goal to isolate and highlight a very specific mechanism, i.e. the role that a wrong self-confidence plays through the distortion of individual educational choices. An advantage of the approach used in the paper is that the single non-cognitive skill study by the authors has a clear and simple economic interpretation, and that it makes transparent the channel through which it affects educational attainments and the accumulation of human capital.

In other words, the purpose of the authors is to go into the “black-box” of the skill production function, identifying a precise and specific channel through which inherited differences in self-confidence can endogenously (i.e., through individual choices) explain the emergence and persistence of gaps in educational attainments and/or in the accumulation of human capital.

The working idea of the model is that by acting as role-models, parents transmit to their children beliefs about their (unknown) ability. Such beliefs affect educational and task choices and, through this channel, contribute to widen the gap in the accumulation of human capital while the learning process (of actual ability) takes place. The consequences of initially “wrong” beliefs can thus have long lasting effects, even if agents eventually learn their true level of ability. The paper provides further suggestive evidence about the link between confidence and family background using two very different sources of data: the PISA datasets, which is a representative cross-national survey of 15-year old pupils, and a very homogeneous dataset of students from Bocconi University surveyed at a later stage of their career. The econometric analysis shows that, in both samples, the link between confidence and background is strong, and survives to the inclusion of good controls for unobserved and observed ability. It is worth noting that the proxies for of ability are likely to bias downward the estimated link between confidence and background, since they capture not only innate ability but also the gap in human capital that has been accumulated up to that point.
The model as the advantage that self-confidence plays an important role without assuming that agents get stuck into self-confirming equilibria in which the learning process stops. The proposed theoretical framework assumes full rationality, given that agents extract all the available information from the signals received in order to update their beliefs, and this implies that they eventually learn their true level of ability. Similarly, it excludes any other form of self-deception. The learning mechanism is of a Bayesian type and it is based on observing success or failure in the endeavour undertaken, given that the probability of success depends on the true level of ability as well as on the difficulty of the task, which is chosen endogenously in accordance with (updated) beliefs about one’s ability.

When finally simulating the model with a bootstrapping procedure, the authors show that choices distorted by under-confidence (while all the other sources of heterogeneity are neutralized) lead to a significant gap in the accumulation of human capital during the learning process of the true level of ability. As long as it correlates with the family background as data consistently show, self-confidence constitutes therefore a channel through which gaps in educational attainments and earnings perpetuate across generations.

This finding also helps to explain why the early gaps based on the socio-economic background do not narrow when the role of the family becomes less important during life, and it suggests that policies aimed at providing early and accurate feedbacks on the cognitive skills of disadvantaged children can be important in promoting inter-generational mobility of education.

1.2.2. School institutions: measures and impacts on school attainment

A crucial role in shaping the average level of schooling, its dispersion and the extent to which individual educational attainment depends on parental background is played by the institutional setting in which the school systems operate. Schools have a central role in shaping the ways educational inequalities are generated and perpetuated. Different characteristics of education systems may help reducing (reinforcing) to various extents the advantage of pupils from high socio-economic background, thus decreasing (increasing) educational inequality. Pattern of provision of pre-primary education, duration of compulsory school, school tracking, school choice, the extent of school accountability and autonomy, academic selection, are all features that may affect both the mean and the distribution of educational attainments, thus shaping efficiency and equity of each schooling system.

Previous literature investigating the role of school institutions on educational attainment has mainly focused on either country-specific episodes, or cross-country evidence, but mostly focussing on single dimensions. The limit of these case studies is that results are hardly generalizable since it is impossible to disentangle the impact of the educational reform from the entire institutional setting of a specific country. Moreover, since most of the varia-
tion in the institutional features of schooling systems occur between countries rather than over time, the identification of the impact of school design is difficult using national data. In principle, a cross-country approach seems to be more effective in this perspective, but most of the existing cross-country studies are based on cross-sectional data only making the identification of the effect of school design problematic, since country-specific unobservable factors are likely to bias the results.

As an output of the GINI project, Braga, Checchi and Meschi (2012) analyse how and to what extent school institutional features, *lato sensu*, affect countries’ accumulation of human capital. In particular, they study the impact of school design on education attainment in Europe, using an original dataset collecting information on changes in the school system over the 1930-2000 period for 24 countries. Institutional features refer to the whole school system from compulsory to post-compulsory education, starting from pre-primary and ending with tertiary education. They exploit variations of the institutional setting across countries and over time, using a rich database on a wide set of reforms in most European countries over the last century. This approach allows controlling for time-invariant country-specific factors that are possibly correlated with educational achievement and inequality.

Their analysis identifies the reforming activities of different governments and proposes a new dataset which contains add-on summary indexes of this activity. These variables are level-free by construction, and therefore unable to differentiate across countries. However they may be used to identify temporal variations, which may be relevant in affecting educational choices of individuals.
The contribution of the paper extends the existing literature in different directions. First, the constructed database covers over 70 years of reform and allows increasing the temporal span of most of the previous studies and to include in the analysis several decades that marked important changes in education provision. Second, while most of the previous empirical works focus on specific types of reforms (duration of compulsory school, school tracking, accountability, to cite the main ones), the paper focuses on a wide range of institutional dimensions and constructs groups of broad indicators of the salient features of an educational system: inclusiveness, compulsoryness, accountability, teacher qualification, student support and university autonomy. Third, the authors study the existing correlation between changes in the institutional school setting and the prevailing political orientations of parliaments and governments. Fourth, the paper studies not only the average impact of reforms on average educational attainment but also its potential heterogeneity in impact, thus being able to predict their bearing on educational inequality as measured by dispersion indices computed on the distribution of educational attainment in the population.

The main results of the paper can be summarized by the following graph, which reports estimated coefficients from regression of individual educational attainment on reforms prevailing when they entered schools.
The figure represents a sort of “menu of policies” available to governments: if we exclude reforms in the area of “university autonomy and selectivity”, all other interventions have a positive impact on the average educational attainments, though with different magnitudes of impact. Policy interventions intended to improve the quality of school inputs (pre-primary schooling and teacher qualification) and/or to retain students into the educational system (expansion of access) accomplish the simultaneous goals of increasing the mean and reducing the dispersion in the distribution of educational attainments. Other policies improve on the organisational side, stimulating the autonomy of teaching institutions (school autonomy and university autonomy) and/or the student involvement at tertiary level (financial support). These policies can be beneficial or detrimental to mean educational attainment, but they increase the dispersion in the distribution. Similar results emerge when we consider the alternative between mean achievement and intergenerational persistence in educational attainments, which may be considered as a proxy for the equality of opportunities.

On average, two types of reforms can be identified. Inclusive reforms that raise the bottom tail of the endowment distribution and selective reforms that increase the dispersion in the upper tail of the same distribution, whatever the original asset can be: parental education, family wealth or even innate ability. The paper also analyses the potential correlations between the political orientation of parliaments and government in office and the prevailing
school institutional setting, in order to establish whether the orientation of educational policies was a reflection of ideological (or strategic) concerns of parties. Results indicate that inclusive policies were favoured by left-wing parliament, while selective policies were promoted in more conservative parliaments.

While Braga, Checchi and Meschi (2012) broadly identifies areas of reforms, they are unable to characterise the salient features of national educational systems, because they only take into account the years of education as the unique relevant outcome. When studying the role of the different features of national educational systems in ensuring the core functions of schooling, three main characteristics stand out: (i) the enrolment of students in different educational programs, (ii) the extent to which a system provides vocational skills, and (iii) the extent to which an educational system is nationally standardised.

The GINI paper by Bol and van de Werfhorst (2012) provides an attempt to build new indicators of educational systems’ institutional characteristics, which ensure a better data coverage, on these three fundamental aspects of educational systems, and to relate them to the core functions of educational systems: the enhancement of equality of opportunity, the efficient sorting of students, the allocation of students to the labor market, and the preparation for active participation in society at large.

Bol and van de Werfhorst (2012) use principal components factor analysis to build a measure of external differentiation: the existence of different educational programs at the same time point in an educational trajectory. Arguably, externally differentiated systems have more manifest forms of separating students on the basis of ability than internally differentiated systems, because such systems are characterized by separation for the full curriculum, often in separate school organizations and for several years.

The original variables used by the authors to produce factors through factor analysis are age of first selection, gathered by OECD (2005), the length of the differentiated curriculum coming from Brunello and Checchi (2007), and the number of distinct school types that are available for 15-year students provided by OECD (2005).

A second dimension of educational systems considered by the authors relates to vocational orientation: the extent to which education provides students with vocational skills, and the specificity of these skills. While the prevalence of vocational education differs across educational systems, there is as much variation in the specificity of the skills that are taught in vocational educational programs. Many educational systems provide vocational programs in a few broad fields, while fewer educational systems provide students with job-specific skills by offering a dual system in which institutionalized education and working in firms are combined. Both are categorized as vocational education, however, the skills that are provided in the dual system are more specific than those in broad vocational programs.
The level of vocational orientation is summarized by the authors in two indicators: the prevalence of vocational enrolment and the specificity of the vocational education. As for the first indicator, the factor analysis considers vocational enrolment as a percentage of upper secondary education as measured by OECD (2006) and by UNESCO. As for the second indicator, the authors consider a single variable: the percentage of students in upper secondary education that are in a dual system (OECD, 2007). A dual system is defined by the authors as one in which students learn and work at the same time, based on the idea that the necessary skills for a job are best learned on the job.

The third dimension of educational systems analysed by Bol and van de Werfhorst (2012) is the level of standardization. The authors distinguish between two forms of standardization: standardization of input and standardization of output. The first refers to the extent to which schools have limited control over the input in education (e.g., hiring policies, setting curricula, choose teaching material). The second form of standardization describes the extent to which educational performance (the output) is tested against external standards and tells us the extent to which schools are held accountable for their performance.

As for the standardization of input, the authors use in principal component factor analysis four variables: the extent to which schools are autonomous in choosing textbooks, general school supplies, the course content and the courses being offered, all coming from 1995 and 1999 data from the Trends in Mathematical and Science Study (TIMSS). As for standardization of output, the authors consider a dummy variable: the presence of central exams in secondary education. In educational systems with nationally regulated exit exams the quality of the skills obtained in education are more likely to be standardized.

After building the new indicators, authors investigate to what extent these indicators are related to the central functions of education: to allocate students to the labour market, to sort students efficiently to maximize learning, to offer equal opportunities, and to prepare youngsters for active citizenship. These aspects are investigated by the authors performing OLS regressions, and using the indicators they built as independent variables. Their analysis is conducted at country level (cross-country regressions).

The authors use two dependent variables to measure the allocation function of education: the level of youth unemployment as a ratio of adult unemployment, and the average duration of the school-to-work transition. According to the authors’ hypothesis, a well-functioning educational system should be characterized by low youth unemployment and short duration spells. The analysis shows that external differentiation and dual systems improve youngsters’ integration in the labour market, while input standardization deteriorates students’ labour market performance.
The second function, efficient selection (i.e. efficient sorting of students to educational tracks), is measured with the average country score on science from the PISA 2006 study. With respect to standardization, the authors only find negative effects of standardization of input, and that when schools are more standardized, the average performance in lower. However, unlike previous research, they do not find evidence of a positive effect of output standardization (central exit exams) on student average performance.

The third function of education is related to equality of opportunities, and is measured with data from the PISA survey 2006. On the basis of that survey the OECD calculated the effect of social origin on performance. The indicator takes the difference between the average performance on the science test of children who grew up in the top decile and in the bottom decile of the social class environment. The OLS results clearly show that external differentiation has a stable negative effect on equality of opportunity: the difference in performance between students from a higher social class and students from a lower social class increases as educational systems get more differentiated and stratified. The authors find no evidence of an efficiency-equity trade-off: more differentiation leads to more inequality but not to lower average performance.

The last function of education that Bol and van de Werfhorst (2012) take into account is related to preparing youths for active civic engagement, and is measured by the level of participation in voluntary organizations other than a religious, sport, leisure, political organization or a trade union provided by International Social Survey Programme’s data. The authors find a negative effect of external differentiation on the average participation in voluntary associations.

1.2.3. Summing up

The main message of this chapter is that despite a declining trend in educational attainment during last century, its distribution in the population is significantly affected by the institutional design. Some reforms have a clearly identifiable impact: by raising compulsory education in a population of compliers, one obtains a positive impact onto the culturally and economically disadvantaged youngsters. Other reforms have more ambiguous effects: increasing the extent of vocational education may retain more students into schooling, but forcing them in closed-end careers. In order to gauge intuitions about the final impact on income inequalities, we need to know whether and how labour market institutions affect educational returns in the labour market. The ideology seems relevant here in affecting what politicians deem relevant for their population: given the absence of a consensual (optimal) degree of education in the population, and taken into account the fact that education is highly labour intensive (and therefore rather expensive in developed countries), conservative and progressive parties do prefer smaller or larger population shares entering tertiary education. The ambitious Lisbon 2020 goals could represent a focal point in this debate.
2. **Income Inequality**

Francesco Bogliacino and Virginia Maestri

2.1. **Income distribution: Definition and Hypothesis**

The concept of income that is generally used to calculate synthetic indicators of income inequality is the *household net disposable income*, if possible adjusted to include in kind benefit. By decomposing this income concept in its main components, we can put forth some theoretical hypothesis over the drivers of its change. We can distinguish three main building blocks.

The first building block is represented by market flows of income: an individual receives income in remuneration for selling productive factors to producers. It is standard to distinguish between labour, capital and self-employment. The main determinants behind the formation of market incomes are: 1) the endowments by individuals; 2) the decision to allocate the factors to production; 3) the demand of the factors by the producers, and 4) the institutional settings that determine how demand and supply are matched. For example, under the first item we consider both the role of the existing stocks of wealth and of educational attainment, under the second item both the propensity to save and the labour supply in the job market, under the third item the technology employed by the firm, which determines the use of the factors and their productivity and finally, of course, in the last item we can include all the possible variables that affect the bargaining power of individuals, their involuntary unemployment or the easiness to find a counterpart.

The second block of factors is related with the role of demographic variables. In fact, scholars are interested in *household* distribution. Fertility, mating and longevity tend to affect the distribution through their effect on family formation.

Finally, the public intervention through taxes, transfer and in kind benefits redistributes income flows across households, altering the level of inequality with respect to the one emerging from market flows. In considering this block of variables, one should take into account that the level of aggregation matters: the final effect of taxation is the sum of that of indirect taxes, e.g. VAT, and of direct taxes. Individually, the former and the latter play different roles and the composition depends on the relative importance of the two.
Once the relevant income concept is decomposed into the main determinants, a set of possible theoretical hypotheses over the drivers of the change in inequality can be put forth. In fact, significant changes occurred in any of the specified blocks and sub-blocks in the last thirty years in advanced countries and they can be assessed using the available data sources.

Nevertheless a methodological caveat is in order. While it is always possible to use an accountancy framework to measure the direct contribution of a factor, it is very complicated, at this level of aggregation, to assess the causal effect. In fact, there are behavioural responses induced by changes in any of the environmental variables considered: anyone of the three main blocks of factors separated in the taxonomy above react to a change in the system. A change in taxation will certainly have a direct redistributive effect, but will also shift the demand and supply of capital and labour and it may affect important decisions taken in family planning. Moreover, the changes in taxation should respond to resource constraints that are themselves endogenously affected by market factors. This is of course typical of any discussion in social sciences, where experimental settings are very limited in scope and almost nonexistent at these levels of aggregation.

In the last decades, the factors that have been highlighted as main drivers are the following ones:

a) **Globalization.** By Globalization we mean the process of increasing integration of the global economy. What matters for the present discussion is: on the one hand, the increasing integration and mobility of goods, financial services and labour; on the other hand, a more integrated global economy is facing more uncertainty and is more prone to shock.

   In a standard Hecksher-Ohlin framework, the increasing trade integration is supposed to move advanced economies towards more capital and high skill intensive productions; given that capital income is more concentrated, this is expected to increase both wage inequality and overall inequality.

   For the same reason, increasing financial mobility should raise the return to capital and thus increase inequality; immigration (mobility of labour) is likely to affect the bargaining power of unskilled labour, increasing wage inequality.

   Finally, the effect on inequality by uncertainty and shocks is connected with the general relationship between business cycle and inequality, which is unclear a priori.

b) **Skilled Biased Technical Change (SBTC).** A large theoretical effort has been carried out to develop models where technical change is directed. Under this assumption, technical change tend to increase the return of some factor of production, e.g. skilled labour (Acemoglu, 2002; Aghion, 2002). A first proposition to assess is related with the relevance of Skilled Biased Technical Change as an explanatory factor for increasing wage inequality.
A second issue of the debate concerns the origin of the skill bias: in one if the version of the theory, the bias is endogenous and it is determined by exogenous shifts in the supply of labour (Acemoglu and Autor, 2011). If this is the case, educational policies may be inequality enhancing and not reducing.

c) Labour Market Reforms. Labour market reforms (reducing employment protection and decrease in wage coordination) has been pointed out as one of the main causes of the reduction of the bargaining power of the unskilled labour; as a result it is expected to have increased inequality, for a given employment rate. The main reason adduced for its implementation was the increase in employment rate and its results on overall inequality is unclear.

d) Change in Household structure and assortative mating. Among the demographic factor, one candidate to explain the increase in inequality was the increasing income correlation among family members.

e) Increasing importance of capital earnings. There is a number of factors that pointed towards an increasing role of capital in incomes: financialization of the economy, reduction of labour share, decreased average growth rate of the economy and subsequent increasing importance of intergenerational transmission of accumulated wealth. Since capital is more unevenly distributed (with the exception of housing), inequality increases.

f) Changes in taxation and transfers. The changing role of the state has certainly affected the pattern of inequality. Considering the effect of ex post interventions is very complicate: besides the direct “static” effect, the economic literature points out the existence of a behavioral effect, lowering incentives to provide effort and to supply factors of production. However, even assuming that reducing the weight of State’s redistribution is growth-enhancing, the relationship between growth and inequality is far from obvious (Aghion, et al. 1999), thus a consensus does not exist on the overall direction and magnitude effect. Keeping this in mind, the static effect of various types of taxes is the following:

f1. The static effect of Personal Income Taxes (PIT) is progressive;

f2. One important issue relates to the amount of deductions, which may alter the distributional effect of other taxes. The most important one is probably the mortgage deduction, since house is a relatively important and common type of asset. The distributional impact of mortgage interests deductions also depends on the mortgage take-up rate in the population (e.g. Italy and Greece have a low take-up rate, Finland medium, Sweden and Netherlands high).

f3. An additional element could be the use of an extended concept of income. Moving to a concept of economic well-being that includes income and the non-monetary housing advantage of households (imputed rent) may alter the impact of different taxes, at least in magnitude. The inclusion of imputed rent in the income concept has, in most countries and to a different extent, a strong redistributive impact (Eurostat, 2010; Frick and

7 Imputed rent is defined as the non-monetary income advantage of homeowners and tenants paying a rent below market price.
Nonetheless, the redistributive effect of taxes once imputed rent is included in the income concept may be different than if based on cash income. For instance, the inclusion of imputed rent in the income concept reduces by 1.5-3.5% the redistributive effect of direct taxation (Maestri, 2012b).

**f4.** Indirect taxes are generally independent from the income capacity of consumers but are differentiated according to the type of good. Lower income groups spend a larger share of their budget for consumption. However, poorer individuals pay a smaller proportion of their total expenditure in VAT and excise duties than richer individuals. The reason is that VAT exempted or reduced rate goods are over-represented in the expenditure of poorer individuals (Figari, 2012). The implication is that VAT has a disequalizing income effect, but this is not true if the redistributive effect is based on consumption. Although increasing pressure of VAT is expected to increase income inequality after consumption, this remains hidden in standard measures of income inequality.

**f5.** Another important issue regarding taxation is tax evasion. For behavioral reason the individual position in the income distribution seems to affect the probability of tax evasion. The Cox Paradox portrays a situation in which the highest and lowest income taxpayers have greater opportunities to evade, whereas middle-income taxpayers find this harder (Bloomquist, 2003). The consequences of the Cox Paradox for inequality depend on the relative extent of tax evasion of the top and bottom income groups.

As clearly emerged from f1-f7 above there is a sizable degree of heterogeneity in the predicted redistributive effect of tax instruments, even limiting the analysis to static effects. Incomplete data at a sufficiently disaggregated level and persistent institutional hysteresis are factors that work against the possibility to define a clear trend in one direction. However, there has been a detectable effort to downsize redistributive intervention, mainly using an emerging “neoliberal” consensus, although the extent to which it has been effective is uncertain. The existence of a coherent effort to attack the egalitarian State and give centrality to the efficiency of markets is pointed out by Roemer (2011). He sees the emergence of conservative think tanks, especially in the US, as evidence of this effort to cultivate both the public, inducing a larger acceptance of inequality, and the decision-makers, through the insistence on optimal design of tax instruments. Optimal income taxation literature is seen as an example of the latter phenomenon. As Mankiw et al. (2009) suggest, it is easy to recognize the lessons of the optimal theory of taxation in the taxation trends in OECD countries over the last decades (lower tax on capital, less progressive PIT). Moreover, according to Stiglitz (2012), a more unequal society in the US has opened many spaces for rent seeking, distorting the political process more and more in favour of the 1%, reinforcing the increase in inequality.

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8 This data refers to Estonia, Italy and United Kingdom.
A final caveat is due before moving to the more concrete analysis: the type of conclusions that can be drawn in analyzing the role of the abovementioned factors is strictly connected with the type of inequality indicator we implicitly chose (Gini of household net disposable income). In fact, a focus on top incomes, or the bottom of the distribution would likely provide different results.

This chapter proceeds as follows: Section 2 will review the existing trends in inequality measures for all the GINI countries for which the data are available; Section 3 discusses the evidence on the drivers of inequality. Section 3 is organized in three subsection: Section 3.1 review some building blocks of the existing literature, Section 3.2 reviews the main Discussion Papers from the GINI project, Section 3.3 discusses in more detail the issue of benefits and taxation.

2.2. Trends in Income inequality

In the measurement of income inequality, it is important to discuss the source of the data, the type of indicator, the source of income. We will briefly mention some key stylized facts related with each topic, then we conclude with some comments on top shares, which have attracted the attention of the public after the work of Piketty and other scholars (Atkinson and Piketty, 2007 and Atkinson et al. 2011). All the graphs are collected into an online Appendix.

2.2.1. Inequality in different data sources

In this section we compare the same indicator across a variety of (cross countries) comparable data sources. As a source of data we use OECD, Luxembourg Income Study (LIS), RED, SWIID and Eurostat (ECHP and then EU-SILC).9

The following Table reports the main data sources and the relevant information regarding income considered, unit of analysis, weights, equivalence scale, coding and other data treatments, and coverage (population and time window).

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When measured by the Gini index for net disposable income and OECD modified equivalence scale, the distribution becomes more unequal for most of the countries in the 1980s and 1990s; the general pattern is more complex for the 2000s.

However, southern European countries coming out from the dictatorship (Greece, Spain and Portugal) exhibit a declining trend in inequality in the 1980s, a rise (of different magnitude) in the following decade, and a new decline in the 2000s.

For eastern European countries it is difficult to establish a general trend because of lack of data, especially before the 1990s; however, the post 1990s show increasing inequality.

Nordic socialist countries\(^\text{10}\) starting from a low level of inequality display a rising pattern of inequality in the 2000s, particularly steep for Sweden. Anglo Saxon countries show a rise concentrated in the 1980s, but US and Canada have a very steep increase that continues in the following two decades.

Across data sources, one can see a systematic difference in level (but with consistency in the trend) between LIS data and OECD data. For Eurostat data it is difficult to assess the reliability given that they are too recent to be comparable with the other data sources. When comparability is allowed, some concerns can be raised: for instance,

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\(^{10}\) Denmark, Sweden and the Netherlands.
in Germany and in Italy in the mid Nineties the decline seems too sharp as compared with other sources. Over the same time window, we observe a considerable difference in the level of the Gini index for Luxembourg compared with OECD and LIS. A similar difference in level is observed for the Netherlands in the mid Nineties with respect to CBS and LIS data. (Eurostat is overestimating for Luxembourg and the Netherlands and underestimating in Italy and Germany.)

In the following Table we summarize the main trends for Gini of net disposable income using SWIID as a reference source.

Table 3 — Summary of the change in Gini index for the GINI countries

<table>
<thead>
<tr>
<th>Country</th>
<th>'80/'90</th>
<th>'90/'00</th>
<th>'00/'10</th>
<th>Different trend</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>3.68574</td>
<td>1.18601</td>
<td>2.20831</td>
<td>OECD ('90/'00)</td>
</tr>
<tr>
<td>Austria</td>
<td>1.54062</td>
<td>-8.08072</td>
<td>1.73801</td>
<td></td>
</tr>
<tr>
<td>Belgium</td>
<td>0.83228</td>
<td>4.63</td>
<td>-2.80241</td>
<td></td>
</tr>
<tr>
<td>Canada</td>
<td>-0.74009</td>
<td>3.97169</td>
<td>-0.07073</td>
<td></td>
</tr>
<tr>
<td>Czech Republic*</td>
<td>4.51191</td>
<td>1.94793</td>
<td>-0.79709</td>
<td></td>
</tr>
<tr>
<td>Denmark</td>
<td>-0.949</td>
<td>-3.39666</td>
<td>4.54871</td>
<td>Eurostat ('90/'00)</td>
</tr>
<tr>
<td>Finland</td>
<td>-0.41766</td>
<td>3.5622</td>
<td>0.94246</td>
<td></td>
</tr>
<tr>
<td>France</td>
<td>-2.01421</td>
<td>0.77825</td>
<td>1.09918</td>
<td></td>
</tr>
<tr>
<td>Germany</td>
<td>1.3549</td>
<td>1.04862</td>
<td>2.7624</td>
<td>Eurostat ('90/'10)</td>
</tr>
<tr>
<td>Greece</td>
<td>-0.65083</td>
<td>1.36973</td>
<td>-0.78393</td>
<td></td>
</tr>
<tr>
<td>Hungary</td>
<td>5.75462</td>
<td>1.64199</td>
<td>-2.45975</td>
<td>Eurostat ('00/'10)</td>
</tr>
<tr>
<td>Ireland</td>
<td>-0.18195</td>
<td>-1.71098</td>
<td>-1.9797</td>
<td></td>
</tr>
<tr>
<td>Italy</td>
<td>-1.49154</td>
<td>2.62254</td>
<td>-0.71411</td>
<td>Eurostat ('90/'00)</td>
</tr>
<tr>
<td>Luxembourg</td>
<td>-2.02727</td>
<td>2.27107</td>
<td>2.40328</td>
<td></td>
</tr>
<tr>
<td>Netherlands</td>
<td>0.69914</td>
<td>-2.34875</td>
<td>2.92462</td>
<td>OECD ('90/'00)</td>
</tr>
<tr>
<td>Poland</td>
<td>-0.65</td>
<td>3.29285</td>
<td>1.07551</td>
<td></td>
</tr>
<tr>
<td>Portugal</td>
<td>-0.25454</td>
<td>4.85726</td>
<td>-2.11971</td>
<td></td>
</tr>
<tr>
<td>Slovak Republic*</td>
<td>4.87741</td>
<td>1.94871</td>
<td>-0.34897</td>
<td></td>
</tr>
<tr>
<td>Spain</td>
<td>-1.5</td>
<td>3.3</td>
<td>-0.92714</td>
<td>RED ('80/'00)</td>
</tr>
<tr>
<td>Sweden</td>
<td>0.00398</td>
<td>4.23436</td>
<td>-3.28216</td>
<td></td>
</tr>
<tr>
<td>United Kingdom</td>
<td>5.89192</td>
<td>1.40862</td>
<td>2.35907</td>
<td></td>
</tr>
<tr>
<td>United States</td>
<td>3.05635</td>
<td>3.22982</td>
<td>-0.83288</td>
<td></td>
</tr>
</tbody>
</table>

Source: the rate of changes are calculated using SWIID. The different trends are shown with regards to OECD, RED and Eurostat data. For Czech Republic and Slovak Republic the changes are between '85/'95, '95/'05 and '05/'10.

An aspect which is less explored is the regional (intra-country) variation of the GINI. Using data from EU-SILC, Frattini (2011) build the Gini indicator for net equivalized disposable income at NUTS 2 level. The results are shown in the Table below for a few countries. Although the period under analysis is characterized by a relatively small change in the GINI, the between region and within region components seems to be more or less...
balanced. The unique exceptions are Belgium, there the between components is much more important, and Italy where the opposite occurs.

Table 4. Between/within NUTS region decomposition of the GINI for net household disposable income for a selection of country. Source: own elaboration from Frattini (2011)

<table>
<thead>
<tr>
<th>COUNTRY</th>
<th>STANDARD DEVIATION</th>
<th>STANDARD DEVIATION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>WITHIN REGIONS</td>
<td>BETWEEN REGIONS</td>
</tr>
<tr>
<td>AT</td>
<td>0.015</td>
<td>0.013</td>
</tr>
<tr>
<td>BE</td>
<td>0.018</td>
<td>0.048</td>
</tr>
<tr>
<td>ES</td>
<td>0.014</td>
<td>0.017</td>
</tr>
<tr>
<td>FR</td>
<td>0.023</td>
<td>0.030</td>
</tr>
<tr>
<td>GR</td>
<td>0.008</td>
<td>0.008</td>
</tr>
<tr>
<td>IT</td>
<td>0.017</td>
<td>0.009</td>
</tr>
</tbody>
</table>

2.2.2. Inequality with different indexes

Using data from RED for the earning distribution we plot in the Appendix the following indicators: Gini, Varlog, and P-ratios (90-50 and 50-10). In Mediterranean countries included in RED data (Italy and Spain) the gap between the 90th and 50th percentiles is larger than the gap between the 50th and the 10th, whereas in the other countries (Sweden, UK, US and Germany) the stylized fact is exactly the opposite. The latter countries show an increasing difference between the two series in the 1980s and 1990s.

Gini and Var-log show coherent trend but the latter shows a sharper increase. Part of the explanation relies on the limited scale of Gini or the fact that changes occurred more at the bottom than around the mode.

2.2.3. Inequalities in different sources of income

Using data from RED, it is possible to consider the evolution of various sources of income. In the Appendix we plot Var-Log of earning, hourly wages, consumption, hours of work and income pre and post taxes. The graphs are restricted to those countries included in the special issue that are also covered by the GINI project. Not all the series are available for all countries, unfortunately.

The distribution of worked hours is the most stable across countries. In general the increase in inequality in earnings and wages is more pronounced than that of income.

For those countries for which data are available, consumption inequality grows less than wage inequality. Some scholars suggest that this evolution is due to increasing debt, related to the emergence of the financial crisis (Fitoussi and Saraceno, 2010).

2.2.4. Top incomes
Top income data are made available through the Paris School of Economics website. However comparability is not ensured for all the countries. In Table 5 below, we report the definition of income used to compute the share for each country. Further details can be found in Atkinson et al. (2011).

In the online Appendix we plot the initial level and the increase over the last decades: for Group One we consider 1971-2004, for Group 2 1971-2006, for Group 3 is 1982-2004 (essentially for data availability reason). There has been an increase of top shares in all the countries; in Anglo Saxon, this has been quite remarkable. In Spain, Japan and France they were stable but the level was already very high. A general discussion on the data quality, comparability and stylized facts is available in Atkinson et al. (2011).

### Table 5. Income definition for the top share

<table>
<thead>
<tr>
<th>COUNTRY</th>
<th>INCOME DEFINITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Actual gross income; adjustment made to taxable income prior to 1957</td>
</tr>
<tr>
<td>Canada</td>
<td>Gross income, adjusted for the grossing up of dividend income</td>
</tr>
<tr>
<td>Denmark</td>
<td>Gross taxable income</td>
</tr>
<tr>
<td>France</td>
<td>Gross income, net of employee social security contributions</td>
</tr>
<tr>
<td>Japan</td>
<td>Gross income (significant capital income base erosion after 1946)</td>
</tr>
<tr>
<td>Italy</td>
<td>Gross income but excluding interest income</td>
</tr>
<tr>
<td>Portugal</td>
<td>Gross income</td>
</tr>
<tr>
<td>Spain</td>
<td>Gross income</td>
</tr>
<tr>
<td>Sweden</td>
<td>Gross income including transfers</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>Prior to 1975 income net of certain deductions; from 1975 total income</td>
</tr>
<tr>
<td>United States</td>
<td>Gross income, adjusted for net income deductions</td>
</tr>
</tbody>
</table>

### 2.3. Drivers of Income Inequality

#### 2.3.1. Evidence from the existing literature

Among the results of the existing literature, the two reports published by the OECD (OECD, 2008 and 2001) are two milestones: the stylized facts are presented in a homogenous and cross country comparable way and the main drivers are assessed. However, this latter analysis is limited to cross country regressions and factor accounting, thus it is difficult to interpret the results in a causal sense.

With regards to the drivers, OECD (2011) points out the following conclusions. Earnings represent the larger share of income throughout the entire distribution and, statistically, constitute the main explanatory factor for the level of inequality. Secondly, the role of capital in explaining the change in the distribution has been increasing (and self-employment for some countries), especially in the 1995-2005. The other main factor behind the change in household disposable income is the lower capacity to redistribute by the State, especially through the benefit system.
In their empirical estimates, we can highlight that: a) globalization variables display a not statistically significant effect on earning inequality; b) R&D intensity (as a proxy of technical change) is positively associated with the 90-10th cross country wage differentials; c) change in labour market institutions are positively associated with both wage differential and employment rates - but the latter result is rejected by more robust studies, e.g. Howell et al. (2007) show that the negative relationship between employment and employment protection legislation cannot be found in the data; d) upskilling is negatively associated with wage differential and positively associated with employment rate. Labour market reforms seems to account for the largest part of the change in inequality.

Some other stylized facts come out from the specialized literature. Berman et al. (1998) show that most of the skill upgrade occurred at the intra-industry level, suggesting that the reallocation among unskilled intensive and skilled intensive sectors (implication of a trade induced change) played a minor role (moreover inequality increased also in developing and middle income countries, where unskilled labour production and wages are supposed to increase; see Acemoglu, 2002). As a result, most of the literature dismiss the role played by trade, at least as predicted by the standard Hecksher-Ohlin framework (the role of outsourcing can still be very important).

A large literature estimated empirically the presence of SBTC. Most of the contribution use panel data model at the firm level to determine if proxies for technology are associated with an increase in the demand for skills (proxied by white-collars or employees with tertiary education). A review of the evidence is in Chennels and Van Reenen (2002): the evidence suggests that technology driven up-skilling is in place, although proxies for both technology and skills are questionable. The evidence is corroborated at cross country level, even on very large pool of countries such as in Meschi and Vivarelli (2009). Whether SBTC can be a major determinant of the changes in inequality occurred in the last decades is a very different issue. Card and DiNardo (2002) and OECD (2011) agree that most of the effect is concentrated in the upper part of the distribution. Moreover, the empirical analysis on the change in the wage distribution in the 1980s and 1990s in the US by DiNardo et al. (1996), Card and DiNardo (2002), and Lemieux (2006) stress that a very large share of the inequality increase is accounted for by the change in institutions.

Among more heterodox scholars, the popular explanation suggests that financialization stands behind a set of policies that weaken labour’s bargaining power generating both a decreasing in the labour share (and thus an increase in overall inequality since capital income is more concentrated) and an increase in earnings inequality (Dumenil and Levy, 2011; Tridico, 2011; Jayadev, 2007). The role of globalization in lowering down labour share is stressed also by Guscina (2006).
On the increasing importance of capital income, a recent contribution is Piketty (2011). Building the data series for France, he shows that annual flows of inheritance follow a U-shaped pattern. The empirical evidence is interpreted in the light of a simple theoretical model of wealth accumulation, growth and inheritance levels. From an aggregate point of view the author expects that inherited wealth will play a big role in the 21st century as it did in the 19th century. The key intuition boils down to a simple logic, comparing the rate of return to capital \( r \) and the rate of growth of the economy \( g \). In countries with large growth, such as France in the 1950s-1970s, the wealth coming from the past (i.e. accumulated or received by one’s parents or grand-parents, who were relatively poor as compared to today’s incomes) does not matter too much. What counts is new wealth accumulated out of current income. As a result, inheritance flows are bound to be a small fraction of national income. On the other hand, in countries with low growth, such as France in the 19th century and since the 1970s, the logic is reversed. With low growth, successors simply need to save a small fraction of their asset returns in order to ensure that their inherited wealth grows at least as fast as national income. In effect, \( g \) small and \( r > g \) imply that wealth coming from the past is being capitalized at a faster rate than national income.\(^{11}\)

Finally, the relevance of demographic factors is stressed by Burtless (2011).

### 2.3.2. Evidence from the Discussion papers

As discussed in Section 1, one of the aspect of globalization that has not been deeply investigated is the effect on inequality coming by an increasing weakness to shocks by a more integrated economy, due to a stronger coupling among the economies or to a greater uncertainty because of increasing pace of change in the economic environment. Indeed, the adjustment process can have effect on the distribution. This is a novel result emerging from the work of Maestri and Roventini (2012). In their paper they consider the statistical relationship between business cycle and inequality.

They show that inequality series are not stationary. Business cycles can only explain transitory shocks to inequality, while a rising trend of inequality is observed in many OECD countries. The authors suggest that, according to the evidence provided by other studies, permanent effects of recessions on inequality and asymmetric effects of recessions and expansions could be a candidate explanation for reconciling short-term fluctuations of inequality and long-term upward trends.

Moreover, their cross-correlation analysis shows that inequality in hours of work, earnings, market and net income are generally counter-cyclical, while consumption inequality is pro-cyclical, at least in Anglo-Saxon countries. The latter stylized fact is associated with the role of debt in the bottom of the distribution. The relationship

\(^{11}\) There is nothing inherent in the structure of modern economic growth that should lead a long run decline of inherited wealth relatively to labor income. Indeed the standard golden rule of Neoclassical Growth model is that the \( r > g \) should hold.
between inequality and stock prices suggests that the latter favors the shift in remuneration from the bottom to the top of distributions; indeed the correlation is positive and strong between share prices and inequality in hours of work, earnings and market income.

Finally, the most important fact emerging from Granger causality test is that there is mutual reinforcing relationship between unemployment and inequality, underlining that the role of adjustment costs in the determination of inequality are significant.

Following a different methodological approach, Bargain et al. (2010) discuss the possible effects of labour demand adjustment to a downturn. They explore two scenarios, one based on intensive margin (hours of work) and another on extensive margin (layoff), using data from Germany. Their empirical estimate suggests that the former has thinner distributional consequences.

The second contribution of GINI DPs is related with the role of education. Using LIS data for a number of countries, Mastromarco et al. (2011) find that the average return to education is positively correlated with Gini Coefficient. As a result, if SBTC is a driver of educational premia, it is also positively associated with the increase in inequality. Although the return to education is estimated through a two-steps procedure, the relationship between the latter and the Gini coefficient is a pure statistical association, thus further analysis is required to reach a more robust conclusion.

The literature on SBTC left the question of its driver almost uninvestigated. The history of industrialization is populated by episodes of unskilled bias innovation (Mokyr, 1993) and the data from the US are inconsistent with a steady SBTC process. As a result, one should provide an explanation for the change occurred in the 1970s, when the increase in wage inequality was observed. Most of the literature has focused on exogenous explanations, related with the nature of the last technological paradigm (Caselli, 1999; Autor et al. 2003; Aghion, 2002; Krusell et al. 2000), while Acemoglu (1998) and (2007) propose and “endogenous” mechanisms that goes from exogenous variations of skills supply to SBTC. Since in these models of the economy the innovative machines complement skills, the change in the relative supply of skills modify the incentives for the profit seeking innovators, affecting the direction of technological change. Whether the source of SBTC is endogenous or exogenous is a fundamental question, given that in the latter case educational policies are inequality enhancing and not reducing. Bogliacino and Lucchese (2011) use a natural experiment to test for this version of the theory and don’t find any statistically significant effect.
Another equality enhancing role of education is driven by immigration. Using data from EU-SILC, Frattini (2011) estimates that an increase in immigration of the size of 1% of the native population is associated with a decrease of about 0.85% in the ratio of the 50th to the 10th percentile of the individual income distribution. However, the estimation are not very robust (when instrumented, there is no significant effect) and EU-SILC have some weaknesses as regards to the immigration variables (questionnaire should be filled in the national language).

The third driver to discuss is the change in labour market institutions. Among the GINI DPs, Bingley et al. (2011) found that unemployment insurance has moral hazard effects, changing the pattern of inequality from permanent to transitory. However, their results depends on the initial assumption of random selection into Unemployment Insurance funds, which is rather strong.

The role played by the change in the labour market institutions can be addressed in more general terms, i.e. the existence of multiple distributive arrangements in the market once a departure from the competitive conditions is allowed for. In the latter case, rents accrue and, as suggested by Howell (1999), demand and supply conditions define only a broad set of potential contractual terms whose concrete distribution is shaped by formal and informal institutions (collective bargaining, employment protection legislation, political climate) that define the bargaining power of the firms and workers. It may be the case that statistical discriminations or other forms of inefficient coordination emerge, with the economy sticking to an equilibrium with low employment rate or low participation. The GINI DP of García-Peñalosa et al. (2011) show that statistical discrimination is an important issue for female participation rate.

Some insights on this heterogeneity can be deduced from the following exercise. Using data from LIS, we estimate a Mincerian equation augmented with a number of characteristics of the job. The equation is obtained from a human capital model where the main regressors are the educational attainments and the experience (usually proxied by age and with a quadratic term. We add a set of controls that capture the possibility of segmentation: sex, married (interacted with the female dummy), immigration and a full set of NUTS region; moreover we include four dummies for industry classification (manufacturing, other services, finance and electricity/construction, with agriculture as omitted category) and two ISCO (ILO, 1987) dummies (manager and professional and other skilled, using labourers –ISCO 9 - as omitted category). The educational attainment is classified according to ISCED classification (UNESCO, 2006). All the regressions are cross sectional and are performed for all the available waves, considering the period mid 1980s – mid 2000s. We use standardized classification (ISCED, ISCO, and ISIC) whenever possible, otherwise we rely on national classification (but comparability is not fully ensured).
The selection criteria are defined in the Table below. The scatterplot of the main coefficients from the regressions are reported (on a country base) in the online Appendix. It is important to stress that the R-squared of this regression is incredibly stable and stands around 30%. As a result, both the level and the increase in variability is mainly explained by the residuals. Although intra industry variability is usually quite large (Dosi et al. 2011; Syverson, 2011), and age and plant size matter, industry captures some characteristics of the employer and occupational categories capture features of the type of jobs. The fact that the residual is the main explanation behind the trend can either be attributed to the role of unobserved skills, or to the availability of multiple arrangements in the labour market, which put forth again the plausibility of a range theory of wages (with a significant space open for behavioural and “political climate” effect, as suggested by Howell, 1999). Further assessment are needed in order to choose among the two explanations.

### Table 6. Selection dimension for the Mincerian analysis with LIS data

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Criterion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>(16; 65)</td>
</tr>
<tr>
<td>Labour status</td>
<td>Employed</td>
</tr>
<tr>
<td>Treatment of zero</td>
<td>Excluded</td>
</tr>
<tr>
<td>Weight</td>
<td>Person weight (normalised)</td>
</tr>
<tr>
<td>Dependent variable</td>
<td>Labour income, person:</td>
</tr>
<tr>
<td></td>
<td>- regular paid employment income (basic wages and salaries; wage supplements; director wages);</td>
</tr>
<tr>
<td></td>
<td>- casual paid employment income;</td>
</tr>
<tr>
<td></td>
<td>- farm self-employment income;</td>
</tr>
<tr>
<td></td>
<td>- non-farm self-employment income (profit from business; household production activities)</td>
</tr>
</tbody>
</table>

In terms of coefficients from the estimates, limiting to those that have at least three point estimates and a clear trend, we can report the following results. For the tertiary education premium, the regressions show an increasing return to education for Austria, Belgium (but with a significant variability), Canada, France, Germany, Italy, Slovenia, USA. A decreasing trend is observed for Australia, Finland, Hungary, Luxembourg and Spain. ISCO 1 and 2 categories – managers and professionals – received increasing premium in Australia, Denmark, Finland, Germany, Hungary, Luxembourg, Netherlands. A decreasing trend is observed for Austria, Belgium, France, Ireland, Italy, Slovenia, Spain, USA.

With regards to the importance of demographic variables, some insights come out from Salverda et al. (2012). They examine a peculiar type of assortative mating, the one related with educational level (using ISCED classification for primary, secondary and tertiary education). They build a country level index that control for the non-homogenous educational attainments of different countries in Europe (data come from EU SILC). The index
is stable for most of the countries (a significant variation is appreciated only for Austria); as a result this factor is unlikely to play a major role.

Finally, although earnings are still the most important factor in explaining the distribution of income, OECD (2011) shows that in the last two decades the role of capital in explaining the increase in inequality has been sizable. In economies from Southern Europe, Self-Employment has also played a role: being generally more unequally distributed, an increase in the correlation between self-employment and total income had an inequality enhancing effect. An increase in the role of capital and self-employment income is confirmed also by García-Peñalosa and Olgiazzi (2011), using LIS data for Canada, Germany, Norway, Sweden, the UK, and the US.

On the hand, a particular form of (in-kind) return to capital contributed to reduce income inequality. The income advantage of homeownership (imputed rent) reduces income inequality in most countries, as it represents a considerable source of income for the bottom deciles12 (Frick and Grabka, 2010). However, imputed rent reduces the redistributive power of taxation and generates a considerable extent of income re-ranking (Maestri, 2012a). Although data on imputed rent are available only for recent years, the increasing share of homeownership experienced by most countries suggests a negative contribution to (an extended concept of) income inequality and a diminished redistributive power of taxation.

The change in taxation and benefits requires some deeper explanation and is treated in the following subsection.

2.3.3. Taxation: effects on inequality

The OECD Reports on inequality (OECD 2008, 2011) analyze the contribution of taxes and transfers to inequality. The main findings of the two OECD Reports are the following ones:

- Tax and benefit systems reduce market income inequality by around one-fourth to one-third, on average, across OECD countries.
- Benefits had a stronger redistributive motive that taxes and social contributions.
- In-kind benefits (education, health, housing) reduce income inequality by around one-half of that achieved though taxes and cash transfers. The redistributive effect of publicly provided services was remarkably stable between 2000 and 2007, on average across the OECD countries.
- The redistributive system was more effective in reducing inequality at the bottom and not at the top. However, most countries experienced and increase in top income shares in the last decades.

12 The concept of imputed rent considers also the income advantage of paying a rent below market prices.
Gabriele Ballarino, Michela Braga, Massimiliano Bratti, Daniele Checchi, Antonio Filippin, Elena Meschi, Francesco Scervini

- Reduced capacity of redistributive of tax and benefits since the mid-'90s was one of the main source of increased inequality.
- On one side, income tax rates were lowered and, on the other, the degree of progressivity increased. This had a counterbalancing effect and did not help reducing inequality.
- Changes in tax burdens and benefits entitlements were mostly regressive between 1995 and 2005, especially for single and childless families.

While the effects of PIT and transfers are discussed in depth in the OECD reports, in this sections most of the taxes considered are indirect. We should stress that the contribution from the discussion papers are mainly cross country. While we can try to infer the role of a specific tax instrument on the increase in inequality by projecting the cross country effect through time depending on the specific trend observed, such operation is not entirely correct from a methodological point of view and raises issues of identification. However, as explained sub f4 above in case of indirect taxes the static effect patently increases inequality. In addition, standard measures of income inequality hide the regressive effect of indirect taxes.

The following two subsections will discuss respectively the evidence cross country and the time trend for specific tax instruments neglected by OECD reports.

2.3.3.1. Empirical evidence on the effects of taxation on inequality

Housing related and mortgage deduction.

As illustrated above with regards to the OECD reports’ results labor taxation has a significant redistributive effect. However, the statutory effect of taxation is different from the effective level of taxation, the latter being influenced e.g. by mortgage interests’ tax relief. Financial deregulation, mortgage innovation, favorable tax treatment of homeownership contributed to the increasing rate of homeownership, the mortgage take-up, and the rise in house prices.

As a consequence of the above-mentioned factors, homeownership increased also among poorer households. Studies on the housing advantage of homeowners (and tenants paying a rent below market price) find an important redistributive impact of in-kind income advantage derived from housing (both for inequality and for poverty). The redistributive importance of imputed rents varies across countries. However, in most countries the income advan-
tage from homeownership is particularly important for over 60 year-old (Eurostat, 2010; Frick and Grabka, 2010), as well as the current structure of housing-related policies (Maestri, 2012b).

Mortgage interests’ tax relief are known to be regressive. In a study of 5 countries (Netherlands, Sweden, Finland, Italy and Greece) Matsaganis and Flevotomou (2007) find that mortgage interests’ deductions are most regressive in the Netherlands and, to some extent, in Greece and least regressive in Sweden, Finland and Italy. The position of Greece and Sweden, high and low regressive effect, may be explained by the full deductibility in the first country and the partial deductibility in the second.

By including the relative housing advantage in the income concept, Maestri (2012b) finds that the distributional effect of mortgage interests’ relief for Italy is slightly smaller than that found in Mastaganis and Flevotomou (2007). For Estonia, the regressive effect of mortgage interests’ deduction is limited (+0.1% in Gini inequality) (Maestri, 2012b). The results presented in Maestri (2012b) can be explained by two factors:

- the housing advantage of homeowners with a mortgage is generally lower than that of outright homeowners;
- the share of household with an outstanding mortgage is low in Estonia and Italy.

The disequalizing effect and the missed tax revenues of this form of deduction led some countries to its limitation (e.g. in Estonia) and eventually abolition (in Germany in 1987, in France in 1997, in UK in 2000 (Mastaganis, 2007)).

**Indirect Taxes.** On average in OECD countries, VAT represent 10-25% of total tax revenues and approximately 3-10% of GDP. Nonetheless, indirect taxes are often excluded from redistributive analyses. This exclusion generally leads to overestimate the redistributive power of taxation.

In most of the OECD countries there is an undergoing debate to shift tax burden towards consumption, based on incentive compatibility arguments (Decoster et al., 2010). However, indirect taxes are known to be regressive. Decoster et al. (2010) simulate a tax-revenues neutral shift from social security contributions to indirect taxation. An increase in the standard VAT rate compensated by a reduction in social security contributions adversely affect lower income households. They suggest that this result cannot be explained by the regressive of excise taxes alone, but rather by the higher saving rate of upper income deciles.

VAT is particularly regressive for the bottom income decile in Greece and Hungary. The reason is to be identified in their VAT structure with respect to the other countries (UK, Belgium and Ireland). Indeed, in Greece and Hungary the share of goods that are tax exempted or are taxed at a reduced rate is much smaller (Figari, 2012). Greece, for example, has a lower standard VAT rate than Belgium and Ireland, but the effect of VAT is more regressive. The share of goods VAT exempted and the C-efficiency factor better explain the regressivity of VAT and, in
particular, the burden of indirect taxation for the bottom income deciles. In fact, the Table 7 shows a lower share of VAT exempted goods and higher C-efficiency factor for Greece than for Ireland and Belgium.

Table 7. VAT structure by country

<table>
<thead>
<tr>
<th>Country</th>
<th>Standard VAT Rate</th>
<th>Reduced VAT Rates</th>
<th>Share of goods VAT Exempted</th>
<th>C-efficiency factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belgium 2003</td>
<td>21%</td>
<td>4%, 15%</td>
<td>38%</td>
<td>&lt;50%</td>
</tr>
<tr>
<td>Greece 2004</td>
<td>18%</td>
<td>4%, 15%</td>
<td>16%</td>
<td>63%</td>
</tr>
<tr>
<td>Hungary 2005</td>
<td>25%</td>
<td>4%, 15%</td>
<td>8%</td>
<td>71%</td>
</tr>
<tr>
<td>Ireland 2001</td>
<td>20%</td>
<td>12.5%</td>
<td>42%</td>
<td>&lt;50%</td>
</tr>
<tr>
<td>UK 2004</td>
<td>17.5%</td>
<td>5%</td>
<td>36%</td>
<td>60%</td>
</tr>
</tbody>
</table>

Source: from Table 3 in Decoster et al. (2010). The data used in Decoster et al. (2010) and reported in the Table refer to 2003 for Belgium, 2004 for Greece and United Kingdom, 2005 for Hungary, 2001 for Ireland.

However, the expenditure capacity of individuals is also determined by their housing advantage. The inclusion of imputed rent in the income concept reduces the regressivity of indirect taxes, especially in Greece and the UK (Figari, 2012).

Table 8. Regressive effect of VAT without/with imputed rent

<table>
<thead>
<tr>
<th>Country</th>
<th>Change in Inequality (GINI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belgium</td>
<td>From post-indirect cash income to disposable income</td>
</tr>
<tr>
<td>Ireland</td>
<td>+2.6%</td>
</tr>
<tr>
<td>Greece</td>
<td>+10%</td>
</tr>
<tr>
<td>Hungary</td>
<td>+5.1%</td>
</tr>
<tr>
<td>Ireland</td>
<td>+6.3%</td>
</tr>
<tr>
<td>UK</td>
<td>+4.4%</td>
</tr>
</tbody>
</table>

Own calculation from Table 3 Figari and Paulus (2012)

The interplay between the redistributive effect of each tax and their corresponding extent of evasion determines the effective redistributive impact of taxes. Figari and Paulus (2012) assume full tax compliance. Nonetheless, they mention that VAT evasion might exacerbate the adverse redistributive effects of VAT. Therefore, the regressive effect of VAT could be more severe in countries where tax evasion is high (as in Greece and Hungary).

Tax Evasion. In a panel of 29 European countries from 2000 to 2003, evasion of personal income tax, excise tax and social security contributions is found to be positively correlated with income inequality (Holzner 2006). Bloomquist (2003) finds the same results with US data from 1947 to 1999 on income tax evasion: an increase of one point in the Gini coefficient increases (a proxy of) tax evasion by 0.24 percentage points.

By considering three high-featuring evasion countries (Greece, Hungary and Italy) Matsaganis et al. (2010) find that for Greece and Hungary the lowest and top deciles have indeed higher level of underreporting of income than the deciles in the middle. Nonetheless, under-reporting in Italy is higher only for the two top deciles and in
all three countries under-reporting is higher and disproportionately higher for the top decile, the top 1% and 0.1% percentiles. As a consequence, the effect of tax evasion increases income inequality in all three countries.

Table 9 reports the distributive effect of PIT evasion in Greece, Hungary and Italy. In all three countries tax evasion is positively associated to poverty and inequality.

Table 9 - Distributional implications of tax evasion versus full compliance

<table>
<thead>
<tr>
<th></th>
<th>Greece</th>
<th>Hungary</th>
<th>Italy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inequality(^1)</td>
<td>+3.5%</td>
<td>+6.8%</td>
<td>+5.5%</td>
</tr>
<tr>
<td>Poverty(^1)</td>
<td>+1.0%</td>
<td>+3.4%</td>
<td>+3.7%</td>
</tr>
</tbody>
</table>

Source: (Matsaganis, Benedek, Flevotomou, Lelkes, Mantovani, & Nienadowska, 2010)

2.3.3.2. Taxation trends

In this subsection we report some trends regarding taxes. The average importance of tax instruments can be seen in Figure 13: data are expressed as share of GDP and refer to the OECD average.

Figure 13 - Tax structure in OECD-area: share in total tax revenues

Source: OECD Revenues Statistics 2009
Other taxes (5200 code in OECD tax database): environment, motor vehicles, hunting and fishing, etc.

\(^{1}\) Measured with Gini.
\(^{14}\) Poverty line is set at 60% of median income.
Figure 14- Figure 16 report the trends in selected taxes by country.

In the last decades, the importance of VAT is clearly increasing. A contribution to the rising trend of VAT is the accession of new Member States in the European Union. In fact, new Member States need to join a VAT system. European VAT Directive fixes a minimum of 15% for standard and 5% for reduce rates.
**Figure 15 – Excise as a percentage of GDP**

![Excise revenue as % of GDP](image)


Tax (5121) “Excises” is a sub item of the tax (5120) “taxes on specific goods and services “

Excises revenues represent about 1-4% of GDP and 5-15% of total tax revenues. Excise revenues mostly decreased between mid-60s and the ‘80s and remained quite stable afterwards.
Among other indirect taxes, tax on specific good and services such as gambling have seen a considerable increase in the last decades in most OECD countries. Although they represent only 0-1.8% of GDP and 0-4% of total tax revenues, they may be particularly regressive.
3. **Wealth Inequality**

Francesco Bogliacino and Virginia Maestri

3.1. **Wealth Distribution: Definition and Hypothesis**

Wealth represents an important contribution to households’ economic well-being. The wealth stock generally amounts to three to six times the disposable income (Landais et al., 2011; Brzozowski et al., 2010; Domeij and Floden, 2010; Fuchs-Schunden et al., 2010; Jappelli and Pistaferri, 2010; Heatcote et al., 2010). Wealth is defined by financial (savings accounts, bonds, stocks, mutual and investment funds, life insurance, pension assets, etc.) and non-financial (principal residence, investment in real estate, business equity, durable goods) assets. Net wealth is the sum of financial and non-financial assets minus liabilities (home-secured debt, vehicle loans, educational loans, installment debt, etc.).

Non-financial assets and, in particular, the principal residence represent the largest component of wealth for most households. In Canada, Finland, Germany, Italy, Sweden and the United Kingdom about 72-87% of total wealth is represented by non-financial assets. On the other hand, financial assets have a higher importance in the US where they represent about 35% of total wealth (OECD, 2008).

Income poor are less likely to hold financial and non-financial assets than the overall population and the value of their assets is lower. Income poor are not the most indebted. Indeed, they are less likely to take up debt (especially in Germany) and the value of their debt is lower than for the general population (OECD, 2008).

The level of wealth inequality is considerably higher than that of disposable income inequality. Countries with a low level of wealth inequality, such as Italy, have a Gini coefficient of 0.6. Countries with a high level of inequality, such as Sweden, have a Gini coefficient as high as 0.9 (OECD, 2008).

The tails of the wealth distribution clearly show the polarization of wealth holdings. Around 2% to 8% households hold a nil net worth, up to 29% for instance in Germany. A larger share of households hold a negative net worth: between 15% and 20% in Canada, Finland, United Kingdom, US and 27% in Sweden. In Italy and Germany

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16 However, the level of market income inequality (before the redistributive role of taxes and benefits) is closer (though lower) to the level of wealth inequality.

17 However, data for Germany are based on individual data.
this share is considerably smaller (3% and 9%, respectively). The top 10% holds around 50% of total wealth, with a minimum of 42% in Italy and up to 71% in the US (OECD, 2008).

High levels of wealth inequality may correspond to countries in which negative net worth accounts for a large share of the population. In Netherlands the bottom decile and, in some year, the second decile have negative net worth (Alessie and Kapteyn, 1999), in Sweden the bottom three deciles have negative net worth and in Denmark the bottom four deciles (Domeij and Floden, 2009 - Davies, Sandstrom, Shorrocks, & Wolff, 2009). In these cases, the Gini value can be bigger than one.

There may be several explanations for considerable shares of negative net worth across the population:

- young adults living with their parents and unmarried couples counted as a separate household;
- wealth data from tax records may contain the taxable value of wealth (a fraction of market value) and the market value of debt (Davies, et al., 2009) (OECD, 2008);
- study loans and human capital is not included in wealth;
- debt incurred to buy assets not covered in the data (e.g. consumer durables).

Therefore, the cross-country comparability of wealth level is problematic. The main issue seems the comparability of Scandinavian versus other countries, as for the household definition and the data source (tax records versus surveys). Nonetheless, the high level of wealth inequality in Scandinavian countries may be due to factors such as the welfare structure (as illustrated in Section 3.1 below) and not only to measurement problems.

Interestingly, some countries with a low level of income inequality display a high level of wealth inequality and vice versa. This is true, in particular, for some Scandinavian countries (very low income and extremely high wealth inequality) and for Ireland, Italy and Spain (very high income and low wealth inequality).

Figure 17 - Figure 18 show the joint distribution of income and wealth inequality for a set of OECD and European countries, respectively. The figures show that there is no positive correlation between income and wealth inequality. Contrary, the figures show a weak negative correlation between the two sources of inequality.

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18 This data is based on the US 2001 Survey of Consumer Finances. The same figure with the 2001 Panel Survey of Income Dynamics is 64%.
19 While Gini for income is constrained to be lower than one, the same may not happen for wealth. In the latter case the support of the variable includes negative values and thus a “generalized” Gini indicator should be used. The upper bound for the generalized GINI is equal to the absolute value of the lower bound of the support of the variable; as a result comparability through countries is more problematic. For some discussion and derivation, see Thistle (1989).
20 See (Klevmarken, 2006) for the case of Sweden.
21 Indeed, OECD (2008) exclude Norway from the Table on Household portfolio composition (Table 10.2, pag. 259) for this reason.
22 See (Klevmarken, 2006) for the case of Sweden.
23 See (Klevmarken, 2006) for the case of Sweden.
24 For the Netherlands, the data used by Alessie & Kapteyn (1999) are the Socio-Economic Panel and the Income Panel Survey (IPS). The IPS has been constructed from administrative records such as from wealth and income tax. For Norway, the LWS is based on the Income Distribution Survey (IDS) conducted by Statistics Norway. IDS is established by means of an interview survey & administrative records. For Sweden, the HINK by Statistics Sweden merge interview survey with administrative records from the Swedish Tax Agency.
25 The correlation shown in Figure 13 for EU countries is likely driven by two outliers (Denmark and Sweden).
Figure 17 Wealth versus income inequality

Source: own elaboration based on wealth inequality from OECD (2008) (calculated on LWS) and disposable income from SWIID.
Figure 18 - Wealth versus income inequality

Source: own elaboration based on data from 2010 Global Wealth Report by Credit Suisse (horizontal axis) and on 2010 Eurostat indicators of disposable income inequality (vertical axis).
The macro and micro determinants of wealth accumulation and distribution are a flourishing research field. Nonetheless, the limited availability of wealth data constraints the empirical evidence on this topic. Comparable data and comparable trends of wealth inequality across countries are scant. There are four main data sources on cross-country wealth inequality:

1. Luxembourg Wealth Study (LWS)
2. WIDER 2000
3. Global Wealth Report (GWR) by Credit Suisse

The LWS is a harmonized international collection of microdata on household wealth from national surveys. The availability of wealth information relies on the original national surveys. The LWS microdata allows to construct (short) series of wealth inequality. Data are available for a limited number of OECD countries and Cyprus (only LWS country not in OECD) between the 1990s and 2000s.

Credit Suisse recently started the collection of comparable indicators of wealth inequality in its Global Wealth Report (Shorrocks et al., 2010 & 2011). The data are available for 2010 and 2011 and cover all countries. The indicators provided in the GWR are imputations based on macro data. The main source used by the GWR is the 2000 database of wealth distribution provided by the UN (WIDER). The figures for 2010 and 2011 are constructed by taking into account the asset composition of households’ wealth by decile and the growth of financial assets, non-financial assets and debt. Other data sources used in the GWR are household balance sheet data (HBS), household survey data and wealth tax records. For the countries for which secondary data on wealth distribution, wealth inequality has been imputed from income inequality, assuming that wealth and income inequality are highly correlated. The GWR wealth indicators are adjusted for (missing) data on top wealth based on Forbes information. For a description of the methodology used in the GWR see Shorrocks and Wan (2009).

The HFCN recently conducted the Eurosystem’s Household Finance and Consumption Survey, which collects household level data on finances and consumption for Euro area countries. The survey includes information on real and financial assets, liabilities, future pension entitlements, intergenerational transfers and gifts. The first survey took place in 2010/2011. Data will be available in 2013.

We point out that different data sources are based on different years. As shown in Error! Reference source not found., the country based trend are characterized by considerable changes even over very short time span. The two facts together explain why the differences across data sources may be large. Besides that GWR refers to the post crisis period, where both the financial meltdown and the housing market crash have dramatically affected the

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26 The correlation between wealth and income inequality is estimated on the sample of countries for which wealth distribution is known.
wealth distribution. Finally, the decade between the GWR, which refers to 2010, and LWS/WIDER, which refers to the years around 2000, has been characterized by the explosion of debt.

The (increasing) trend of wealth inequality can be explained by five main candidate factors.

1. **Demographic structure of the population**: the life-cycle dimension of wealth accumulation is a key factor in explaining wealth inequality. Indeed, age is a strong determinant of wealth (OECD, 2008). However, different demographic structure of the population does not seem to explain cross-country variability of wealth inequality [Abigail].

2. **Institutional (public provision of goods)**: homeownership is the main form of household wealth. Some countries provide generous in-kind and cash housing benefits. More in general, the generosity of the welfare state seems to explain housing decisions at the bottom and the cross-country variability in wealth inequality.

3. **Labour market**: increasing earnings inequality may translate into higher levels of wealth inequality, the more the stronger is the correlation between earnings and wealth accumulation (e.g. in the US). Working rich and self-made man seems to be an increasing share of billionaires.

4. **Asset composition** (debt/mortgage deductions and finance): the importance of financial assets seems to explain the increasing trend of wealth inequality over time. Moreover, the increasing indebtedness of households triggered by the explosion of mortgage interests’ deductions seem to explain both the cross-country and over time variation of wealth inequality.

5. **Taxation**: the declining trend of capital taxation in the last decades suggest the increase in wealth inequality as a behavioural reaction. Mortgage deduction can explain the high level of debt and wealth inequality experienced by Nordic countries. The slight increase in property taxation was not effective in reducing wealth inequality, as it targeted the non-increasing part of wealth inequality (non-financial assets). On the other hand, financial taxation did not keep track with the increasing importance of financial wealth, in particular capital gains.

### 3.2. Trends of Wealth inequality

#### 3.2.1. Trends in wealth-income ratio and polarization

The importance of wealth with respect to income increased in the last decades. The main reasons are to be attributed to the appreciation of housing and stock prices.
In Italy, between the end of the 1980s and 2006, the median wealth-income ratio increase from about 4.5 to 6.5. The increase is explained by the increase in the rate of homeownership, the appreciation of the housing and financial stocks. The financial wealth-income ratio increased in the 1990s from about 7 to almost 9 and decreased after 2001 due to falling prices and stock market participation (Jappelli and Pistaferri, 2010).

In Germany, between 1978 and 2003 total wealth-income ratio increase from 3 to 3.5, despite the fact that the period covers the reunification of the country. Indeed, average wealth was substantially lower in the East but also disposable income. Financial wealth-income ratio slightly increased from below 1 to more than 1 (Fuchs-Schunden et al., 2010).

In Canada, net total wealth to income ratio increased from about 5.5 in 1999 to almost 7 in 2005. Financial wealth-income ratio increased from slightly less to slightly more than 3 in the same period.

In Sweden, the total wealth-income ratio fell until 1987 and started to increase in 1988-1990, fell afterwards and then rose again after 2000. This trend tracks the evolution of real estate prices and by the credit expansion following the financial liberalization. The financial wealth-income ratio decreased in the same period (Domeij and Floden, 2010).

In France, the ratio wealth-income increased from about 4 in the 1980s to about 6 nowadays (Landais et al., 2011).

The last decades also witnessed a further polarization of the wealth distribution. On one side, the fraction of household with nil or negative net worth increased. For instance, in Germany, between 1978 and 2003 this share increased from 6.5% to 10.5%. The share of households with negative wealth increase from 3.35 to 5.5% (Fuchs-Schunden et al., 2010). In Italy, though low, the share of households with negative net worth passed from about 2% to 3% between 1990 and 2010 (Banca d’Italia, 2012). In the Netherlands the wealth share of the poorest wealth decile turned more negative in the last decade (from -1.9% in 1993 to -3.5% in 2011) (Graaf-Zijl et al., 2012). On the other, share of net worth of the top percentiles increased. In Canada, the net worth of the top 10% increased from about 16% to 17% between 1999 and 2005 and the share of the top 5% from 35% to 36% (Brzozowski et al., 2010). In the US the net worth share of the richest 10% increased from 51% to 59% (between 1983 and 2007 (Heatcote et al., 2010). In Switzerland the top 5% held 56.58% of the total net worth in 1991 which increased to 57.98% in 1997 (Dell, Piketty & Saez, 2007. For Spain the top wealth shares (including real estate) are available but only for the top 1%. In 2000 the top 1% had a wealth share (including real estate) of 18.53%. In 2002 it reached its peak of 20.01% falling back to the level of 19.65% in 2007. Financial wealth shares (excluding real estate) show
a different picture. The top 1% owned 22.68% of the financial wealth in 2000 which increased to 25.16% in 2007 (Saez and Alvaredo, 2009).

The correlation between wealth and income at the micro level is far from perfect (OECD, 2008). In Sweden the correlation between market earnings and net wealth is very low (8%) (Domeij and Floden, 2010). In Canada, the correlation between disposable income and wealth was 35% in 1999, compared to 60% in the US (Brzozowski et al., 2010). Income poor-asset rich households are a reality in all countries, though their share is below 5%. Moreover, socio-demographic characteristics have a lower explanatory power for income than for wealth, likely due to the role played by intergenerational transfers. Nonetheless, the correlation between income and wealth at the individual level is still sizeable and more important in the US (above 50%) than in other OECD countries (between 27% and 36%) (OECD, 2008).

3.2.2. Trends in net worth

Given the data limitation explained in previous section, we collected non-harmonized data on wealth inequality, based on national sources. Figure 1 shows non-harmonized trends of net worth inequality in the period 1967-2008 for a set of OECD countries. Table 10 reports the sources and details of the series of wealth inequality by country. In almost all countries pension assets are not included in the measurement of wealth. The exclusion of pension assets from wealth likely overestimates the level of wealth inequality. In most of the countries considered wealth inequality increased. Although the period covered is not the same for every country, we notice an increase in wealth inequality during the ’80s and the ’90s. Spain reports a decrease in wealth inequality. However, the data for Spain refer to only two years in the ’00s, when also other countries report a decreasing (UK and Italy) or stable (Canada) trend of wealth inequality. A specific case is represented by Germany, due to the events surrounding reunification. Wealth inequality decreased in West Germany before reunification, but there are some issues of comparability for the 1983-1990 period. After the reunification, inequality in West Germany first decreased and then increased, and a process of convergence with East Germany is in place (Frick et al, 2010). Frick et al. (2010) analyze also the change in wealth obtained from another data source available for 2002 and 2007 only (the German Socio Economic Panel, SOEP): they document an increase.

Figure 2 reports the percentage change in wealth inequality between 2010 and 2011, from the Global Wealth Report by Credit Suisse. In most countries there was a considerable increase in wealth inequality. In Czech Republic, Denmark, Ireland, Netherlands and Romania the increase in wealth inequality was larger than 15%. In most of

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the countries that experienced a decrease in wealth inequality, the reduction was small. Only UK, Slovakia, Estonia and Australia had an important fall in wealth inequality (larger than 6%).

Overall, the period 2010-2011 reports an increase in wealth inequality in most OECD countries. This increase seems more important than the smaller decreased in wealth inequality reported by the other countries. The increase in wealth inequality was extremely high in some countries.

### 3.2.3. Assets contributions to the development of wealth inequality

A comparative analysis of the contribution of different assets/liabilities to the trend in net worth is not easy task, as a comparable break-down of wealth inequality is not available for all countries. Figure 24 - Figure 26 show the trends in housing wealth, financial wealth and liabilities inequality for the country for which a similar break-down of wealth was available.

Housing wealth inequality does not seem to drive the general increasing trend in wealth inequality. On the other hand, financial wealth and liabilities inequality show an increase. The booming stock market and the high concentration of stocks among the rich (together with rising transitory labour market risk) are identified as the determinants of increasing wealth inequality in the US (Heatcote et al., 2010). In Germany, financial wealth inequality has increased much more rapidly than total wealth inequality, while housing wealth remained stable (Fuchs-Schunndeln, 2010). Similarly, in Italy inequality of total wealth inequality was fairly stable during the 1990s, while financial wealth inequality increased considerably throughout the 1990s (Jappelli and Pistaferri, 2010).

### 3.2.4. Trends in capital taxation

Figure 19 shows the gap between Anglo-Saxon and other OECD countries in terms of property tax revenues. Anglo-Saxon countries, plus France and with the exception of Ireland, collect a considerable amount of revenues from property, up to about 3% of GDP in US and the United Kingdom. In most European countries this share is below 1% of GDP, although it displays an increasing trend since the 1990s.
Figure 19 – Property Tax as a percentage of GDP

Source: OECD
4100 = Recurrent taxes on immovable property

Figure 20 – Estate, inheritance and gift taxes as a share of GDP

Inheritance taxation clearly shows a decreasing pattern in the last decades. Jappelli et al. (2012) report a decrease in transfer taxes as a share of total tax revenues from 1% to 0.4% in OECD countries between 1965 and recent years. 6 reports the OECD average trend of inheritance taxation as a share of GDP. This share fell from 0.25% in the mid-'60s to less than 0.15% from the mid-80s onwards. Figure 20 shows the country-specific patterns. The revenues from estate, inheritance and gift taxes represent a very small share of GDP in all OECD countries. In 2010, this share was above 0.4% only in Belgium and France.

Figure 21 - Tax revenue from estate, inheritance and gift as a share of total revenue

Source: Jappelli et al. (2012)
Figure 22. Non Harmonized trends in wealth inequality.
<table>
<thead>
<tr>
<th>Country</th>
<th>Source</th>
<th>Data</th>
<th>Based on</th>
<th>Assets excluded</th>
<th>Unit of measurement</th>
<th>Other relevant notes for comparability issues</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germany</td>
<td>(Stein &amp; Hauser, 2004)</td>
<td>Income and Consumption Survey (ICS) of the German Federal Statistical Office, authors calculations</td>
<td>Survey and tax records</td>
<td>Consumer durables</td>
<td>Household OECD equivalence scale.</td>
<td></td>
</tr>
<tr>
<td>Japan</td>
<td>(Takayama, 1994)</td>
<td>NSFIE and others. Survey records</td>
<td>Survey records</td>
<td>Pensions</td>
<td>Household</td>
<td>Only real and monetary assets are considered.</td>
</tr>
<tr>
<td>Spain</td>
<td>(Bover, 2008)</td>
<td>Survey of Household Finances (EFF) 2002–2005</td>
<td>Surveys, and tax records</td>
<td>Consumer durables (cars and other vehicles)</td>
<td>Household Wealth inequality is calculated on the panel sample of stable households. The change in wealth inequality between 2002 and 2005 may be affected by the significant changes in the structure of Spanish households. For a detailed explanation of this issue we refer to (Bover, 2008) Constant €2005.</td>
<td></td>
</tr>
<tr>
<td>Sweden</td>
<td>(Domeij &amp; Flodén, 2009)</td>
<td>HINK and HUT database</td>
<td>Surveys and tax records</td>
<td>na</td>
<td>Household OECD equivalence scale used for HINK database.</td>
<td></td>
</tr>
<tr>
<td>UK</td>
<td>(HM Revenue &amp; Customs: Distribution of Personal Wealth)</td>
<td>HM Revenue &amp; Customs</td>
<td>Tax records</td>
<td>Pensions</td>
<td>Individual Marketable wealth. These statistics are based primarily on the “estates multiplier” method: information about individuals’ assets revealed from the probate or Inheritance.</td>
<td></td>
</tr>
<tr>
<td>US(II)</td>
<td>(Wolff, 2004)</td>
<td>Authors calculations Survey Consumer Finances.</td>
<td>Survey and high income supplement from tax records</td>
<td>Consumer durables, social security wealth, private pension</td>
<td>Household The Federal Reserve Board imputes information for missing items in the SCF computed from the survey sample and the Flow of Funds data.</td>
<td></td>
</tr>
</tbody>
</table>
Figure 23. Percentage change in wealth inequality between 2010 and 2011, by country

Change Wealth GINI 2010-2011

Source: own elaboration based on data from Global Wealth Report by Credit Suisse 2010 and 2011.
Figure 24 – Non-harmonized trends of housing wealth inequality


Figure 25 – Non-harmonized trends in financial wealth inequality

3.3. Drivers of Wealth inequality

3.3.1. Factors contributing to wealth inequality other than Taxes

**Demographic factors.** The accumulation of wealth has a clear life-cycle dimension. Age is found to be one of the main determinant of wealth assets (OECD, 2008). According to Cowell et al. (2012) cross-country differences in household wealth holdings are affected by demographic differences. There are quite large differences between countries in age-profiles of investment ownership. US households are most likely to hold financial debt and this extends in to older households headed by individuals over the age of 65. Inequality within age groups, defined in terms of the age of the household head, falls with age and then increases again among older age groups (Cowell et al. 2012). In a context of ageing population and increasing wealth inequality, it seems plausible to believe that demographic factors better explain cross country differences than over time changes.

For instance, Italian households have an older age profile associated with an ageing population that result in a typically later age of household formation, however, the role of institutions seems to be larger in this case, as explained also by the very small share of families with mortgage debt and the very small share of students loans.

Demographic factors partially explain differences in the level of wealth inequality. However, it seems that institutional factors may play a larger role.

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Public provisions of services. Davies (2008) observes that the high level of wealth inequality of Sweden cannot be completely explained by measurement problems, but by the high incidence of debt, relatively low homeownership rate and the dampening effect of generous public pensions on savings. However, Davies (2008) notes that Finland has a welfare state similar to the Swedish one but low wealth inequality. A possible reason is the higher rate of homeownership in Finland and a lower incidence of negative net worth (Davies, 2009).

Davies (2009) explains that the level of wealth accumulation and inequality depends on the generosity of the pension system. Indeed, countries like Sweden have a high level of wealth inequality and a generous pension system. Other studies confirm that the high level of wealth inequality in Sweden is not only due to measurement error but also to the comprehensive pensions system and the generous social security system, that reduce the need for household to accumulate private wealth for life-cycle and precautionary reasons (Domeij and Floden, 2010; Domeij and Klein, 2002).

Countries with an important housing welfare may not provide incentives for the accumulation of wealth at the bottom of the distribution in order to buy a house. Figure 27 supports this hypothesis. Indeed, we find a considerable positive correlation between spending in social housing and wealth inequality.28

Similarly, Figure 28 - Figure 29 show a positive correlation between wealth inequality, on the one side, and government spending on pensions and unemployment, on the other. The correlation between government spending and wealth inequality is stronger for housing and pensions than for unemployment.

In conclusion, there may be a trade-off between private wealth and public provision of assets (pension and/or housing) and, more in general, welfare state generosity. This trade-off may help explaining the combination of wealth and income inequality for countries with similar levels of income inequality and different levels of wealth inequality (Sweden versus Finland and UK versus Ireland for the cases of low and high income inequality, respectively).

These findings are based on cross-country differences and do not provide a causal link between the generosity of the welfare state and wealth inequality. A more robust analysis should explore over time variations in welfare generosity and in wealth inequality within countries. A decreasing generosity of welfare states should correspond to decreasing trends of wealth inequality, in order to corroborate the cross-country evidence.

Labour Market and Billionaires. The increasing trend of earnings inequality illustrated in Chapter … can partially explain the increasing trend of wealth inequality. Indeed, the correlation between earnings and wealth accumulation, though not perfect, is high. This correlation is stronger for the US than for other OECD countries (OECD, 2008). Therefore, we may expect the labour market to play a larger role in explaining increasing wealth

28 UK stands out of this pattern.
inequality in the US than elsewhere. For the US, for instance, the rise in wealth inequality can be partially explained by rising transitory labor market risk (Heatcote et al., 2010).

A peculiar channel through which the labor market can explain the rise in wealth inequality is the emergence of the “billionaires”. The increasing concentration of income and wealth at the top of the distribution raises a significant debate in the literature, and there has been a certain emphasis on the “working rich” and the “superstar” (Rosen, 1981), although the empirical evidence is not overwhelming (Atkinson, 2008). A very rich source of data to study the income distribution for the “superstar” is Forbes Magazine, which is publishing a ranking of Billionaires since the 1980s. A collection of the information has been done by Roine et al. (2012). Their paper show very striking empirical results generated interest in the study of “billionaires”. First of all, the top billionaires’ resources are considerable (they estimate them around 8% of World GDP) and extremely mobile, since the share of total wealth “residing” in a country different from its citizenship has increased dramatically. Secondly, billionaire’s share of the total has increased; moreover concentration within the top has increased over the period. In terms of the global distribution European and Japanese shares have declined while the US and the rest of the world has increased.

Finally, it is difficult to assess hypothesis on the drivers of these fortunes (in some cases it is difficult to distinguish the individual from the “dynasty”). However, the share of self-made billionaires has increased globally. While most of self-made wealth in BRICS countries have their wealth coming out from natural resources and traditional manufacturing, much of top wealth in the US has been created in high-tech industries.

Financial assets and liabilities. An additional explanation of cross-country variation in wealth inequality is the level of debt. Debts normally include mortgage, consumer, study and business loans. The extent and the relative weight of the different sources of debt vary across countries. The level of debt inequality is generally very high and the main determinant is mortgage loans. The level of indebtedness varies widely across countries and contributes to explaining variations in wealth inequality. Figure 30 shows the strong and positive correlation between the level of private debt and wealth inequality.

The level of private indebtedness increased in all countries in the last decades and this may explain the over-time increase in wealth inequality.

As illustrated in Section 1.2.3 of the present Chapter, financial wealth seems to drive the rise in wealth inequality. Indeed, inequality in non-financial assets seems more stable that financial wealth inequality, while total wealth and net worth inequality were increasing.
Figure 27 - Wealth inequality versus government spending on housing

![Figure 27 - Wealth inequality versus government spending on housing](image)

Sources: own elaboration based on WIDER 2000 Wealth Inequality indicators and 2000 government spending on housing as a share of GDP from OECD Social Expenditures Database.

Figure 28 - Wealth inequality versus government spending on old age

![Figure 28 - Wealth inequality versus government spending on old age](image)

Sources: own elaboration based on WIDER 2000 Wealth Inequality indicators and 2000 government spending on pensions as a share of GDP from OECD Social Expenditures Database.
Figure 29 - Wealth inequality versus government spending on unemployment benefits

Sources: own elaboration based on WIDER 2000 Wealth Inequality indicators and 2000 government spending on pensions as a share of GDP from OECD Social Expenditures Database.

Figure 30 - Private debt versus wealth inequality.

3.3.2. Tax policy contribution to wealth inequality

Taxation contributes to the accumulation of wealth and wealth inequality in two ways. First, taxation directly redistributes economic well-being. Secondly, taxation trigger behavioural responses that may affect the distribution of wealth. Four wealth-related tax policies can be identified: mortgage interests’ deductions, property, inheritance and financial assets taxation.

**Mortgage interests’ tax relief.** The income regressive effects of mortgage interests’ tax relief have been illustrated in Section 3.3 of Chapter 2. However, this tax relief had behavioral consequences that contribute in explaining the developments of wealth inequality.

In the last decades there has been a surge in house prices and a parallel increase in the share of household spending on housing in most OECD countries. The increase in house prices was not only driven by economic and demographic factors (declining interest rates, positive net migration, changes in the household structure), but also by public interventions. Financial deregulation, mortgage innovation, favorable tax treatment of homeownership have all contributed to this trend. The contemporaneous increase in the rate of homeownership is only partially explained by population aging and it is potentially an outcome of this policy set-up (Andrews, Caldera Sanchez and Johansson, 2011).

In the last decades, most OECD countries made a large use of mortgage interests’ deductions. This policy is basically a subsidy to home-ownership. The supporters of mortgage interests’ deductions maintain that boosting homeownership strengthen the stake people have in society (Glaeser E. L. 2003). Some authors even question that mortgage interests’ deductions have an effect on the probability of homeownership, but rather on the quantity of housing consumption (Glaeser E. L. 2003). The over-consumption of housing and its effect on house prices translates into a redistribution from new entrants in the housing market to insiders (Andrews, Caldera Sanchez en Johansson 2011).

As a consequence of these policies and trends, homeownership increase also among poorer households. However, the larger share of homeownership corresponded to an increasing share of indebted households in some countries and, as a consequence, of net worth inequality.

While the increase in house prices translated into a larger importance of wealth with respect to income, the increasing share of indebted households contributed to increasing wealth inequality. The case of the Netherlands is emblematic. Netherlands has one of the most generous and regressive systems of mortgage interests’ deductions (Matsaganis and Flevotomou, 2007). The share of the bottom wealth decile has turned more and more negative.
in the last decades (Graaf-Zijl et al., 2012). Currently, the Netherlands display one of the highest levels of wealth inequality.

**Property taxation.** On the one hand, the favorable tax treatment of housing (low property taxes together with mortgage interests’ tax relief) boosted over-investments in housing, including high levels of mortgage take up. On the other, (increasing) property taxation does not seem an efficient redistributive tool.

Housing is both a consumption and an investment good. Housing is consumption at the bottom and investment at the top. A tax on property is regressive at the bottom of the income distribution as for its “excise effect” and progressive at the top (Musgrave, 1974). Consequently, an optimal property taxation for redistributive purposes would suggest to tax properties with an exemption at the bottom, according to the incidence of housing expenditures at the bottom (Musgrave, 1974). Musgrave (1974) suggests that a fuller taxation of capital income (including housing) under the individual income tax or a personal tax would lead to more progressive results.

The empirical literature suggests limited static redistributive effects of property tax. Council tax in the UK is actually regressive before considering deduction of property tax payments for low income families and slightly increases poverty in Italy (Maestri, 2012b). Indeed, homeownership and its corresponding in-kind income advantage (imputed rent) are known to play an important role in the redistribution of economic well-being for households at the bottom of the income distribution and for the elderly (Frick, Grabka, Smeeding, & P., 2010).

For Italy, Pellegrino et al. (2011) find that the replacement of property tax with taxable imputed rent leads to more progressive results. However, the elderly people would be worse-off as their pension income and considerable importance of imputed rent would not benefit from a reduction in marginal PIT due to the extension of the tax base.

Table 11 reports the redistributive effects of property tax on poverty and inequality in Estonia, Italy and UK. The findings presented in the figure show that the current design of property tax does little to reduce inequality.

The last decades, saw a slight increase in property taxation. However, property taxes have a limited redistributive effect. In addition, these taxes are based on the largest component of wealth, especially at the bottom of the distribution, that does not seem to drive increasing levels of wealth inequality.

**Table 11 - Distributional effects of property tax**

<table>
<thead>
<tr>
<th></th>
<th>Change due to property tax</th>
<th>Change including deduction property tax</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ESTONIA</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inequality</td>
<td>0</td>
<td>No</td>
</tr>
<tr>
<td>Poverty</td>
<td>0</td>
<td>No</td>
</tr>
<tr>
<td><strong>ITALY</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inequality</td>
<td>0</td>
<td>No</td>
</tr>
<tr>
<td>Poverty</td>
<td>+0.9%</td>
<td>No</td>
</tr>
<tr>
<td><strong>UNITED KINGDOM</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inequality</td>
<td>+2.5%</td>
<td>+0.6%</td>
</tr>
<tr>
<td>Poverty</td>
<td>+5.4%</td>
<td>-3.0%</td>
</tr>
</tbody>
</table>

Source: (Maestri, 2012) based on Euromod version 3+ and 2006 national SILC data for Estonia and Italy, 2006 FRS for UK. 2005 policy year
**Inheritance taxation.** Bequests are deemed to have a considerable impact in the accumulation of wealth and wealth inequality. Inheritance taxation is expected to have a direct redistributive effect of wealth and a behavioural effect on wealth accumulation.

Jappelli et al. (2012) suggest that little redistribution can take place via the taxation of intergenerational transfers, as different institutional arrangements generate low and similar tax revenues.

For an overview on the legislation of inheritance taxation and reforms in the US, Italy, France Germany, Netherlands and Spain we refer to Table 1-8 in Jappelli et al. (2012). Interestingly, the actual taxation of bequest is zero in some OECD countries, as shown by the Table 12 below.

*Table 12. Inheritance taxes: some examples across OECD countries*

<table>
<thead>
<tr>
<th>Country</th>
<th>Total Inheritance 50,000</th>
<th>Total Inheritance 300,000</th>
<th>Total Inheritance 1,000,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Denmark</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>France</td>
<td>2,278</td>
<td>28,278</td>
<td>95,278</td>
</tr>
<tr>
<td>Germany</td>
<td>0</td>
<td>0</td>
<td>7,000</td>
</tr>
<tr>
<td>Ireland</td>
<td>0</td>
<td>0</td>
<td>41,979</td>
</tr>
<tr>
<td>Italy</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Netherlands</td>
<td>1,328</td>
<td>17,363</td>
<td>82,693</td>
</tr>
<tr>
<td>Spain</td>
<td>0</td>
<td>12,761</td>
<td>96,531</td>
</tr>
<tr>
<td>US</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

*Note: For Germany we set the tax rate at 7%, for Spain we set the allowance at €47,859.*

*Source: Jappelli et al. (2012)*

Bowles and Gillis (2002) suggest that inheritance of wealth matters for the top of the income distribution, but it may not play an important role for most families. D’Addio (2007) reviews the literature on the intergenerational transmission of wealth and concludes it is more important for the top of the distribution. On the one hand, these studies support the conclusion of Jappelli et al. (2012), on the other, they suggest to look at top shares and intergenerational mobility rather than at the entire distribution.

Table 13 provides an exploratory look at the link between inheritance taxation and three dimensions of inequality (inequality over the whole distribution, top shares and intergenerational mobility). However, the last two measures refer to income and earnings, not wealth. US and Italy have a low effective level of inheritance taxation, a large share of the top 0.5% of the income distribution and a high level of intergenerational earnings immobility. Nonetheless, they display very different levels of wealth inequality (high in the US and low in Italy). Spin and France have a high effective tax rates on inheritance taxation, a medium level of wealth inequality and top income shares, but different levels of intergenerational earnings mobility (medium in Spain and high in France). Denmark
Francesco Bogliacino and Virginia Maestri

has a low effective taxation on inheritance (as Italy and the US), together with an extremely high level of wealth inequality, a low level of top 5% income share and intergenerational earnings mobility.

Table 13 — Inheritance taxation, inequality, top share and mobility

<table>
<thead>
<tr>
<th>Country</th>
<th>Highest Effective Rate Inheritance Tax****</th>
<th>Wealth Inequality*</th>
<th>Top 0.5% Income**</th>
<th>Intergenerational Earnings Elasticity***</th>
</tr>
</thead>
<tbody>
<tr>
<td>US</td>
<td>0%</td>
<td>0.81 (2)</td>
<td>13.59 (1)</td>
<td>High</td>
</tr>
<tr>
<td>Italy</td>
<td>0%</td>
<td>0.63 (7)</td>
<td>6.39 (2)</td>
<td>High</td>
</tr>
<tr>
<td>Denmark</td>
<td>0%</td>
<td>0.84 (1)</td>
<td>2.62 (5)</td>
<td>Low</td>
</tr>
<tr>
<td>Germany</td>
<td>0.7%</td>
<td>0.68 (4)</td>
<td></td>
<td>Low</td>
</tr>
<tr>
<td>Ireland</td>
<td>4.2%</td>
<td>0.59 (5)</td>
<td></td>
<td>Medium</td>
</tr>
<tr>
<td>Netherlands</td>
<td>8.3%</td>
<td>0.64 (3)</td>
<td></td>
<td>Medium</td>
</tr>
<tr>
<td>Spain</td>
<td>9.7%</td>
<td>0.57 (6)</td>
<td>5.95 (4)</td>
<td>Medium</td>
</tr>
<tr>
<td>France</td>
<td>9.8%</td>
<td>0.76 (4)</td>
<td>5.97 (3)</td>
<td>High</td>
</tr>
</tbody>
</table>

Notes:

* source: Credit Swiss Gini Wealth Inequality 2010
** The World Top income Database: data refer to 2005
*** OECD (2008) based on D’Addio (pag. 205)
**** Effective rate based on Jappelli et al. (2012) for the case of the last parent leaving one million euro to 2 sons.

The (current) highest tax rate is calculated as a share of the donor’s bequest. The numbers in parenthesis represent the position in the ranking from most unequal (1) to least unequal.

Table 13 above shows that it is difficult to see a clear link between (effective) inheritance taxation on the one hand, and wealth inequality, top income shares and intergenerational mobility, on the other. Further research is needed to shed some light on the impact of inheritance taxation on inequality, top shares (preferably of wealth) and intergenerational mobility (preferably of wealth). Piketty (2008) suggests that knowledge on the optimal theory of inheritance taxation is poor and more research is needed.

The considerable fall in inheritance taxation among OECD countries could be a candidate explanation for the increasing accumulation of wealth and wealth inequality. Several studies analyze the effect of inheritance taxation on the size of the bequest. Jappelli et al. (2012) survey the existing literature on the behavioural effects of inheritance taxation. Jappelli et al. (2012) conclude that the effect found in the literature is small: an increase in the inheritance tax rate of 10% reduces bequests by only 1%. Nonetheless, they warn that this data cannot disentangle the effect of taxes from that of tax avoidance.

3.3.3. Financial assets taxation

The taxation of finance has been a slogan of the anti-globalization movement starting from the 1990s. The instrument envisaged was in reality an old one: the so called Tobin tax (named from Nobel Prize winner James Tobin), a financial transaction tax with a very small rate, explicitly designed to make the financial market less liq-
uid and efficient, in order to “slow it down”, given that a fundamental asymmetry is perceived between the adjustment lags on real market and on financial markets. Moreover, the huge turnover on financial market is supposed to generate a large amount of revenues to redistribute in order to fight inequality (Patomäki, 2001).

The instance of redistribution through the financial transaction tax has usually been criticized as conflicting with the original aim of the tax: being a “scope” tax, namely limiting excessive turnover on financial market, its own efficacy was deemed to eliminate the source of its revenue.

Nevertheless, the role of finance in fuelling the income and wealth of the top earners (Krugman, 2012; Lansley, 2012; Stiglitz, 2012) suggests that the direct and indirect impact of a proper taxation of finance can be favorable to equality (besides the obvious positive effect on the overall stability of the system).

A tax on financial assets can be designed in many different ways. For example, one can tax (a) the stock of financial assets separately or in the context of a wealth tax; (b) the flows of revenues from financial assets (returns on saving accounts, on stocks and bonds and financial derivatives); (c) financial transactions; (d) capital gains.

In order to plot a trend we use information coming from OECD Tax Database. A real tax on wealth is implemented in a very limited number of OECD countries, thus data are not meaningful. Financial transaction tax on GDP is plotted in Figure 31 for available countries: there is clearly a sizable heterogeneity, with differences in the order of magnitude of three-four times the total revenue; no clear trend appears.

With regards to the taxation of capital gains, for some country the taxes are retained at the firm level and a tax credit is assigned to individual, so it is difficult to state the exact revenue. We plot the data in Figure 32. Austria, Belgium, Canada, Czech Republic, Estonia, Finland, Germany, Greece, Hungary, Iceland, Luxembourg, Norway, Poland and Portugal the amount is actually zero. The trend for the other countries clearly reflects the progress of the financial bubbles: it increased rapidly up to the market collapse of 2007-2008 and then dropped.

It is important to stress that in both cases, the financialization of the economy and the presence of bubbles enlarges the tax base (the “share” of finance in GDP), which can result in a higher incidence of the tax on GDP for a given tax rate. However, the instability induced by the deepening of the financialization (witnessed by the financial crisis) and the increase of inequality suggest that the taxation on finance should have increased.
Figure 31. Financial transaction tax as a share of GDP

Source: OECD Tax Database.
Figure 32. Tax on Capital gains on household as a share of GDP

Source: OECD Tax database.
References


Ballarino, G., Meschi, E., & Scervini, F. 2012. Trends of educational inequality. GINI DP n. 3.3.4


Bargain, O., Immerwoll, H., Peichl, A., & Siegloch, S. 2010. Distributional Consequences of Labor demand Adjustment to a Downturn. GINI DP. 1/2010


Bingley, P., Cappellari, L. and Westergård-Nielsen, N. 2012. Flexicurity, wage dynamics and inequality over the life-cycle. GINI Discussion paper

Bogliacino, F. and Lucchese, M. 2011 Endogenous Skill Biased Technological Change: testing for Demand Pull Effect. GINI DP 3.1.16


Brint, S. 2006. Schools and Societies, Palo Alto: Stanford UP.


Figari, F. P. 2012. The impact of indirect taxes and imputed rent on inequality: a comparison with cash transfers and direct taxes in five EU countries. GINI DP n.28.


Fitoussi, J. P. & Saraceno, F. 2010. Inequality and Macroeconomic Performance. OFCE/POLHIA 2010/3

Frattini, T., 2011. Immigration and Inequality in the EU. GINI DP. 3.1.12


García-Peñalosa, C. & Orgiazzi, O., 2011. Factor components of inequality. GINI DP. 3.1.4


Lansley, S. 2012. The Cost of Inequality. Gibson Square


Maestri, V. (2012a). Imputed rent and income re-ranking: evidence from EU-SILC data. GINI DP 29

Maestri, V. (2012b). Economic well-being and distributional effects of housing-related policies in 3 European countries. GINI DP, n. 31


OECD, 2011. Divided We Stand: Why Inequality Keeps Rising, OECD Publishing


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<th>Publication Date</th>
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<td>Michelle Norris and Nessa Winston</td>
<td>May 2012</td>
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Information on the GINI project

Aims

The core objective of GINI is to deliver important new answers to questions of great interest to European societies: What are the social, cultural and political impacts that increasing inequalities in income, wealth and education may have? For the answers, GINI combines an interdisciplinary analysis that draws on economics, sociology, political science and health studies, with improved methodologies, uniform measurement, wide country coverage, a clear policy dimension and broad dissemination.

Methodologically, GINI aims to:

- exploit differences between and within 29 countries in inequality levels and trends for understanding the impacts and teasing out implications for policy and institutions,
- elaborate on the effects of both individual distributional positions and aggregate inequalities, and
- allow for feedback from impacts to inequality in a two-way causality approach.

The project operates in a framework of policy-oriented debate and international comparisons across all EU countries (except Cyprus and Malta), the USA, Japan, Canada and Australia.

Inequality Impacts and Analysis

Social impacts of inequality include educational access and achievement, individual employment opportunities and labour market behaviour, household joblessness, living standards and deprivation, family and household formation/breakdown, housing and intergenerational social mobility, individual health and life expectancy, and social cohesion versus polarisation. Underlying long-term trends, the economic cycle and the current financial and economic crisis will be incorporated. Politico-cultural impacts investigated are: Do increasing income/educational inequalities widen cultural and political ‘distances’, alienating people from politics, globalisation and European integration? Do they affect individuals’ participation and general social trust? Is acceptance of inequality and policies of redistribution affected by inequality itself? What effects do political systems (coalitions/winner-takes-all) have? Finally, it focuses on costs and benefits of policies limiting income inequality and its efficiency for mitigating other inequalities (health, housing, education and opportunity), and addresses the question what contributions policy making itself may have made to the growth of inequalities.

Support and Activities

The project receives EU research support to the amount of Euro 2.7 million. The work will result in four main reports and a final report, some 70 discussion papers and 29 country reports. The start of the project is 1 February 2010 for a three-year period. Detailed information can be found on the website.

www.gini-research.org