Inequality and macroeconomic models

By **Stéphane Auray** and **Aurélien Eyquem**

"All models are wrong, some are useful." This quote from George Box has often been used to justify the simplistic assumptions made in macroeconomic models. One of these has long been criticised: the fact that the behaviour of households, although differing (heterogeneous) in their individual characteristics (age, profession, gender, income, wealth, state of health, labour market status), can be approximated at the macroeconomic level by that of a so-called "representative" agent. This assumption of a representative agent means considering that the heterogeneity of agents and the resulting inequalities are of little importance for aggregate fluctuations.

Economists are not blind – they are well aware that households, companies and banks are not all identical. Many studies have looked at the effects of household heterogeneity on aggregate savings and, consequently, on macroeconomic fluctuations[1]. On the other hand, some studies propose so-called "overlapping generations" models in which age plays an important role[2].

Most often, households in these models move from one state to another (from employment to unemployment, from one level of skills and therefore of income to another, from one age to another) and the probabilities of a transition are known. In the absence of insurance mechanisms (unemployment, redistribution, health), the expected risk of a transition produces an expected risk of income or health, which leads

agents to save in order to insure themselves. Furthermore, differences in savings and consumption behaviour are also likely to lead to differences in labour supply behaviour. Finally, changes in the macroeconomic environment (changes in the unemployment rate, interest rates, wages, taxes and contributions, public spending, insurance schemes) potentially affect these individual probabilities and the resulting microeconomic behaviour. Aggregate risks therefore affect each household differently, depending on its characteristics, generating general equilibrium and redistributive effects. However, this relatively old work has come up against two obstacles.

The first is technical: tracking the evolution of the distribution of agents over time is mathematically complex. It is of course possible to reduce the extent of the heterogeneity by limiting ourselves to two agents (or two types of agent): those with access to the financial markets and those who are forced to consume their income at each period[3], working people and pensioners, etc. But while these simplified models make it possible to understand and validate broad intuitions, they are still limited, particularly from an empirical point of view. They do not, for example, allow us to carry out a realistic study of changes in inequality across the entire distribution of income or wealth.

The second obstacle is more profound: several of these studies have concluded that models with heterogeneous agents, although much more complex to manipulate, did not perform significantly better than models with representative agents in terms of aggregate macroeconomic validation (**Krusell and Smith, 1998**). Admittedly, they were not aiming to study changes in inequality or the macroeconomic impact, but rather the contribution of agent heterogeneity to aggregate dynamics. In fact, the subject of inequality has long been considered to be almost or fully orthogonal to macroeconomic analysis (at least when considering fluctuations) and to fall more within the

remit of labour economics, microeconomics or collective choice theory. As a result, heterogeneous agent models have long suffered from the image of being an unnecessarily complex subject in the macroeconomic analysis of fluctuations.

In recent years, these models have undergone an exceptional revival, to the point where they seem to be becoming the standard for macroeconomic analysis. The first obstacle has been overcome by an exponential increase in the computing power used to solve and simulate these models, combined with the development of powerful mathematical tools that render their solution easier (**Achdou *et al.*, 2022**). The second obstacle has been overcome by the three-pronged movement that we describe below: the growing body of work (particularly empirical work) demonstrating the importance of income and wealth inequalities for issues typically addressed by macroeconomics – over and above their intrinsic interest; the development of tools for measuring inequalities that make it possible to reconcile them with macroeconomic analysis; and the refinement of the assumptions made in models with heterogeneous agents.

First, numerous empirical studies show that precautionary savings plays a major role in macroeconomic fluctuations (**Gourinchas and Parker, 2001**). But precautionary savings and the sensitivity of savings (and household spending) to income are not identical for all households. Indeed, empirical work suggests that the aggregate marginal propensity to consume (MPC) lies between 15% and 25% (**Jappelli and Pistaferri, 2010**), and that the MPC of a large proportion of the population is higher than the MPC obtained in representative agent models. In representative agent models at the top of the wealth distribution, the latter is approximately equal to the real interest rate, and therefore much lower than the empirical estimates (see Kaplan and Violante, 2022). It is therefore critical to understand the origin of a high aggregate MPC based on solid microeconomic foundations,

particularly if we wish to carry out a realistic study of the impact of macroeconomic policies (monetary, fiscal, etc.) that rely on multiplier effects linked to the distribution of MPCs.

In recent years, an abundant and increasingly well-developed empirical literature has been dealing with issues relating to income inequality. Following the seminal article by **Atkinson (1970)** along with more recent developments[4], we now have long data series that measure income inequality before and after tax, along with wealth inequality, across the entire household distribution for a large number of countries. Finally, what are known as **Distributional National Accounts** make it possible to compare in great detail the predictions of macroeconomic models using heterogeneous agents with microeconomic data that are totally consistent with the framework of macroeconomic analysis.

Finally, the heterogeneous agent models themselves have evolved. The "first generation" models generally considered a single asset (physical capital, in other words, company shares) and prevented agents from taking on debt, which led them to save for precautionary reasons. These hypotheses were not able to explain why MPCs were high. They failed to correctly replicate the observed distribution of income and, above all, of wealth. In reality, households have access to several assets (liquid savings, housing, equities), and the composition of their wealth differs greatly depending on the level of wealth: households generally start saving in liquid form, then invest their savings in property by taking out bank loans, and finally diversify their savings (only for those with the greatest wealth, above the 60th percentile of the wealth distribution) by buying shares (**Auray, Eyquem, Goupille-Lebret and Garbinti, 2023**). In doing so, a large proportion of the population ends up in debt in order to build up their property wealth, which is thus not very liquid. Although they have high incomes, many households consume almost all their income, which reduces their capacity for

self-insurance through savings. This increases their MPC (and therefore the aggregate MPC) in line with empirical observations (**Kaplan, Violante and Weidner, 2014**).

Macroeconomists can now fully integrate the analysis of inequalities in income, wealth and health into models based on more realistic microeconomic behaviour. They can re-examine the consensus reached on the conduct of monetary[5] or fiscal[6] policies and examine their redistributive effects. They are also in a position to quantify the aggregate and redistributive effects of trade or environmental policies, which are or will be at the heart of their political acceptability – giving rise to new horizons for less wrong, more useful models.

[1] See in particular **Bewley (1977)**, **Campbell and Mankiw (1991)**, **Aiyagari (1994)**, **Krusell and Smith (1998)**, **Castaneda, Diaz-Gimenez and Rios-Rull (1998)**.

[2] See the work of Allais (1947) and **Samuelson (1958)**, and among others **De Nardi (2004)**.

[3] See **Campbell and Mankiw (1989)** ; **Bilbiie and Straub (2004)** ; **Gali, Lopez-Salido and Valles (2007)**.

[4] See (**2001**, **2003**), Piketty and Saez (**2003**, **2006**), **Atkinson, Piketty and Saez (2011)**, **Piketty, Saez and Zucman (2018)** and **Alvaredo *et al*. (2020)**.

[5] **Kaplan, Moll and Violante (2018)**; **Auclert (2019)**; **Le Grand, Martin-Baillon and Ragot (2023)**.

[6] **Heathcote (2005)**; **Le Grand and Ragot (2022)**; **Bayer, Born and Luetticke (2020)**.

What can we learn from the Finnish experiment with a universal income?

By Guillaume Allègre

Between 2017 and 2018, Finland conducted an experiment with universal income that gave rise to significant media coverage. 2,000 unemployed people receiving the basic unemployment benefit (560 euros per month) received the same amount in the form of unconditional income, which could be combined with income from work for the duration of the experiment (2 years, not renewable). On 6 May 2020, the final report evaluating the experiment was published (here is a summary of the results). The evaluators concluded that the experimental universal income had moderate positive effects on employment and positive effects on economic security and mental health. According to the final report, on average individuals in the treatment group worked approximately 6 additional working days (they worked 78 days). They experienced significantly less mental stress, depression and loneliness, and their cognitive functioning was perceived as better. Life satisfaction was also significantly higher. The results of the experiment therefore seem to argue in favour of a universal income. But is it really possible to draw lessons from the experiment with a view to generalizing the system? In 2018, I wrote that experimenting with universal income was "impossible". Does the Finnish experience contradict this claim? It turns out that it is indeed difficult to draw lessons.

The principle of a universal income, as it

is commonly defined, is to pay a sum of money to all members of a political community, on an individual basis, without means-testing or any obligation to work or take a job.

Such experiments generally concern a small number of people (in Finland, 2,000 individuals): the universal aspect of the measure is therefore lost, but a measure's impact can differ depending on whether it affects everyone or only some of the population. How are the individuals chosen? Two options are favoured by practitioners: a totally random draw, which favours the representativeness of the experimental sample, or a saturation site, which consists of including in the experimental sample an entire community (for example a single labour market area), which helps to capture externalities and interactions ("do I stop working more easily when my neighbour stops or when my spouse receives assistance?"). In Kenya, villages are used as saturation sites. In the Finnish experiment, 2,000 long-term unemployed people receiving end-of-entitlement benefits (equivalent in France to ASS assistance) constituted the experimental group, with the control group being made up of recipients of end-of-entitlement benefits who had not been randomly selected. This poses two problems. First, the experimental group is not representative of the Finnish population. The long-term unemployed make up only a small part of the population. So we cannot really say how

people with jobs would have reacted (would they have reduced their working hours?). Second, interaction effects are not taken into account: for example, consider a job taken up by an unemployed person in the experimental group, who thus increases his or her labour supply in the context of the experiment – might this job have been taken up by a member of the control group?

The definition of universal income tells us nothing about its level or what benefits it replaces. All options are on the table. Programmes with a more liberal, free-market orientation offer a relatively low universal income and replace most social benefits and sectoral subsidies (notably in agriculture) or can even substitute for regulations on the labour market (the abolition of the minimum wage is envisaged). In a more social-democratic logic, universal income would replace only the social minimum (France's RSA income support benefit) and income support for the in-work poor (in France, the *Prime d'activité*). The amount envisaged is often equal to or slightly higher than the social minimum. Finally, in a degrowth logic, the universal income could be lifted to at least the poverty line in order to eradicate statistical poverty. The effects expected from the reform depend greatly on the amount envisaged and the benefits it replaces. In the framework of the Finnish experiment, the universal income was 560 euros,

the amount of the basic unemployment benefit received by the members of the experimental group. Simply replacing this basic allowance meant that at first the income of the unemployed in the experimental group remained unchanged. But the universal income could at the same time be cumulated with job income. This means that returning to work could lead to an additional financial gain of as much as 560 euros.

The experimentation thus increased the financial gains from a return to work. This is not a result that one usually thinks of in relation to establishing a universal income. One question often asked is, "What happens when you get 1,000 euros a month without working?" It turns out that, for those on low incomes, the generalized roll-out of a universal income could have ambiguous effects on the incentive to work: it increases income without work but it also provides additional income for the working poor. On the other hand, for those earning the highest incomes, the monetary gain from increasing their income would be reduced.

The evaluation was complicated by the introduction of activation measures during the second year of the experiment (2018). Based on the "activation model" put in place, people on unemployment benefits had to work a certain number of hours or undergo training, otherwise their benefit was reduced by 5%. These measures affected the

experimental groups asymmetrically: two-thirds of the control group were affected, compared with only half of the experimental group (Van Parijs, 2020). Theoretically, the incentive to return to work was therefore greater for the control group. Note that activation goes against the principles of the universality and unconditionality of universal income.

Notwithstanding the activation measure, the results of the Finnish experiment tell us that the hours worked are higher for the experimental group than for the control group. The financial incentives to work would therefore have worked! In fact, the evaluators stress the moderate degree of the impact on employment. In the interim report, which covered the first year (2017), the impact was not significant. In 2018, the impact was significant, since the people in the experimental group worked an average of 78 days, or 6 days (8.3%) more than the control group. The impact is, however, not very significant: with a 95% confidence interval, it is between 1.09 and 10.96 days (i.e. between 1.5% and 15%). Kari Hämäläinen concludes: "All in all, the employment effects were small. This indicates that for some persons who receive unemployment benefits from Kela [Finland's agency handling benefits for those at end of entitlement] the problems related to finding employment are not related to bureaucracy or to financial incentives".
On the other hand, the experiment tells us nothing about the

effects of
possible disincentives for higher earners due to the financing of the measure:
by construction, an experimental universal income is not financed. More
seriously, gender analysis is virtually absent from the final report. All we know
is, from reading a table, that women in the experimental group worked 5.85
additional days compared to 6.19 for men, but there is no discussion of the
issue of gender equality. The issue of how choices are negotiated within a household
is also not posed. The impact on the lone parent group is not significant
"due to its small size". In an Op-Ed
published by the New York Times, Antti Jauhiainen and Joona-Hermanni
Mäkinen criticize the sample size, which is five times smaller than initially
planned: the small size makes it difficult to draw any conclusions about subgroups.

The final report highlights the beneficial
effects on mental health and economic well-being. The impacts on people's life satisfaction
and on stress and depression are very significant. However, two comments can be
made. First, we do not know what comes from the higher living standards of the
individuals in the treatment group and what comes from the mechanism of a universal
income (the certainty that people will have an income whatever happens). Given
the way the experimental income was actually designed (it functions like an
employment bonus), one can easily assume that it is the income

effect that takes precedence. Likewise, since the individuals in the experimental group are in all cases better off financially, it is not surprising that their economic well-being increases. Second, there may also be a reporting bias due to a Hawthorne Effect: individuals in the experimental group know that they are part of an experiment and that they were chosen so that they have an advantage over the control group. This can lead them to be more optimistic in their statements.

In the end, the Finnish experiment offers few lessons about the effects of the establishment of a global universal income, i.e. one for all citizens. Only a small category of the population was involved, and funding was not tested. Yet funding is half the mechanism; Finnish trade unions are also opposed to a universal income because they fear that the necessary tax increases will reduce earnings from working. In addition, a family and gender approach has been completely ignored, whereas a universal income has been denounced by feminists as being liable to discourage women from taking up jobs (likening it to a mother's wage). As with the RSA income supplement experiment in France [article in French], the failure of the Finnish experiment is explained in part by the contradictory objectives of the various scientific and political actors. The evaluators hoped for a sample of 10,000 people including individuals with different employment statuses. They were constrained by a

combination of time,
money and a ruling political coalition that was no longer enthusiastic about
the idea of testing a universal income ("Why
Basic Income Failed in Finland"). The Prime Minister's Centre Party
was in fact interested in the question of financial incentives for the
long-term unemployed, which is a long way from the idea of reconsidering the
central role of market labour or being able to say no to low-quality jobs, which
is often associated with universal income. This was certainly a limitation of
these costly experiments: subject to the inevitable supervision of politics,
they risk becoming showcases promoting the agenda of the government in power.

The new labour inequalities. Why jobs are polarizing

By Gregory Verdugo

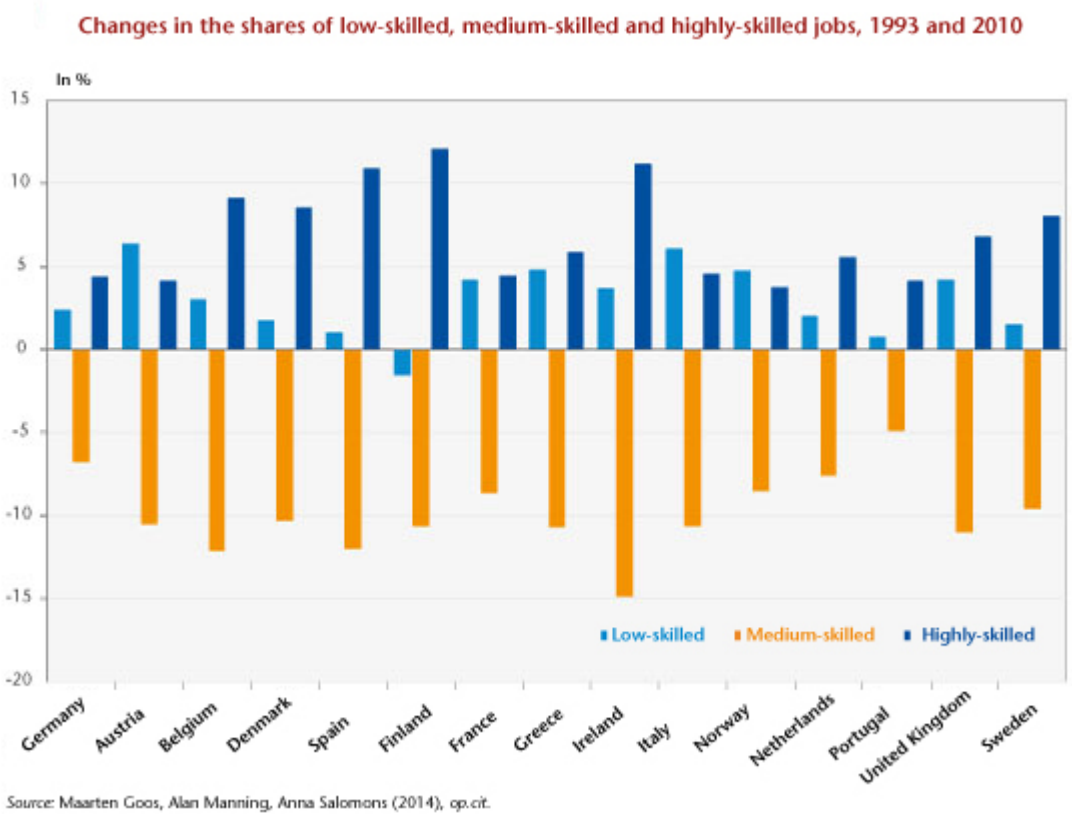
What is job polarization?

Over the past three decades, work has taken a new turn. While the post-World War II period saw a decline in wage inequalities, since the 1980s the gaps have been getting steadily wider. Differentials are increasing throughout the wage distribution, both between low and medium wages and between medium and high wages. In countries like France where

wage inequalities have remained stable, the less skilled have been hit increasingly by the risk of unemployment and precarious jobs.In addition to increasing inequality, the composition of jobs has also undergone great change. To study trends in job quality, the economists Alan Manning of the London School of Economics and Maarten Goos and Anna Salomons of the University of Utrecht explored the rich data from the European Labour Force Survey for 16 European countries over the period 1993 to 2010 [1]. Based on the average wage observed in employment at the beginning of this period, they distinguish three main categories of jobs: low-skilled, medium-skilled and highly-skilled.

Alan Manning and his co-authors calculated how the share of these three groups in total employment is changing. Their results, presented in Figure 1, show that in most countries employment is polarizing, i.e. the share of intermediate jobs is declining sharply in favor of an increase in either low-skilled or high-skilled work. The number of medium-skilled jobs has fallen substantially: in France, these jobs decreased by 8 points between 1993 and 2010, from 47% to 39%. This compares to 12 points in Spain, 11 points in the United Kingdom, 10 points in Sweden and Denmark, 6 points in Germany and 5 points in Portugal.

While the share of intermediate occupations is shrinking, the shares of low-skilled and highly-skilled jobs are expanding. In France, these two groups have increased in a perfectly symmetrical way, by about 4% each. Thus, for every two medium-skilled jobs that disappear, one additional highly-skilled job and one unskilled job are created. Note that, compared with Belgium (+ 9%), Denmark (+ 8%) and Finland (+12%), the growth in skilled jobs has been more moderate in France, and is closer to that of Germany, Austria and Norway.



Winners and losers in the information revolution

The major upheaval going on in the labour market is due first to the nature of recent technological change, which has revolutionized the organization of businesses. Because computers operate in accordance with explicit, pre-programmed procedures and rules, they have proven very adept at performing the so-called routine tasks that characterize human labour in intermediate jobs. A computer can command an industrial robot, draw up pay slips, or distribute money. Because of their efficiency and low cost, computers have replaced the elementary and repetitive human labour that made up many intermediate jobs. The jobs most destroyed by computerization were thus those held by workers on production lines that became automated as well as those of office clerks and secretaries.

Highly-skilled workers have on the other hand been the winners from technological progress. Not only are computers unable to replace their jobs, but they also make these workers more productive. By expanding the amount of information available

and facilitating its search, the Internet promotes the specialization of knowledge and makes it possible to concentrate on analytical tasks. Thanks to advances in information technology, companies are increasingly demanding more highly-skilled labour, which has made it possible to absorb the arrival of large cohorts of higher education graduates without lowering their wages.

Has international trade polarized employment?

International trade benefits the consumer by multiplying their choices and moderating prices. Indirectly, by freeing up income, it also stimulates demand and employment in the services sector. But behind the consumer is also a worker, sometimes with opposing interests. While international trade favours the former, its effect on the latter is more ambiguous.

It is now clear that medium-skilled jobs have fallen victim to the growth in trade with the developing countries. The quickening pace of trade with emerging economies with low labour costs has led companies in the developed countries to specialize in the most sophisticated design tasks that draw on information analysis and creativity. In contrast, basic production tasks have been increasingly outsourced, which has led to the destruction of a large portion of intermediate industrial jobs in the developed countries.

Recent studies on the United States [2] and France [3] have shown that, as a result of the import boom that followed after China joined the World Trade Organization in the 2000s, the labour market worsened seriously in the areas facing greatest competition from China. For France, the destruction of industrial jobs linked to Chinese competition has been quantified at 100,000 jobs from 2001 to 2007, or 20% of the 500,000 jobs lost in this sector.

How can this market be tamed?

Of course one should not forget that the labour market is a market where supply and demand is constrained by a set of norms and rules that are crucial in terms of inequality. Despite the important role of technology and trade, labour market institutions play a key role and have shaped each country's response to computerization and the expansion of international trade and, depending on the case, have slowed or accelerated job polarization.

Many studies have noted that a minimum wage and collective wage bargaining have influenced the way inequality and employment are impacted by technological advances and globalization. These institutions have most of all had an impact on the wages of the least skilled, those they are designed to protect. For low wage earners in France, the minimum wage has dramatically closed the wage gap [4]. The centralization of wage negotiations at the branch level has also contributed to limiting wage inequalities by levelling wages between firms within a sector. Where such institutions have remained strong, they have kept low wages up and moderated wage differentials.

But if these institutions are too restrictive, they have also been suspected of undermining job creation and pushing up unemployment among low-skilled workers. They have in particular not been able to curb the destruction of jobs, and excessive protection is suspected of having discouraged job creation. In the late 1990s, Thomas Piketty of the Paris School of Economics noted that the growth of service jobs had declined in France compared to the United States following increases in France's minimum wage In the 1980s[5]. More recently, the researchers Julien Albertini of Humboldt University, Jean Olivier Hairault of Paris 1 University, François Langot of the University of Maine and Thepthida Sopraseuth of the University of Cergy Pontoise showed that the minimum wage has limited the growth of the non-routine manual services sector in France [6] and thus diminished the

opportunities for people whose jobs were destroyed by international trade or technology. This employment deficit was particularly pronounced in activities that were intensive in low-skilled labour, such as hotels and restaurants and the retail trade[7]. A key issue facing employment policy in the years to come is how to adapt regulations to the new situation of the labour market.

The jobs of the future

Technological progress has not eliminated work. But the next wave of high-performance machines could, this time, be really different. Up to now, machines were not good at performing abstract and non-routine manual tasks, but advances in robotics and computer science could quickly change this situation. Every year has seen exponential progress in the technical possibilities for computers and robots to simulate human reasoning and intelligence: the increase in computing capabilities is making it possible to analyse and respond more skilfully to external stimuli; communication with the environment is becoming more and more sophisticated thanks to batteries of powerful sensors, aided by software that is capable, in particular, of understanding the most subtle nuances of human language and of recognizing faces and objects; data storage capabilities have been multiplying with the development of “cloud robotics”, where each robot in the network accumulates and shares experience and information with its fellow robots[8].

Some researchers believe that developments in intelligent machines and robotics are likely to replace work in a large number of jobs in the years to come. In 2015, Carl Benedikt Frey and Michael Osborne, researchers at Oxford University, predicted that 47% of employees in the US hold jobs that are likely to be automated in the future[9]. They foresee a particularly heavy impact in transport and logistics, where the progress of intelligent sensors will make driverless vehicles safe and profitable.

But the jobs of the less skilled are not the only ones under threat. The growing analytical capabilities of computers now enable them to assist in decision-making in complex tasks, especially in the medical and legal fields, where they are replacing skilled labour. At the Memorial Sloan-Kettering Cancer Center in New York, USA, a computer programme helps oncologists determine the most appropriate treatment for patients. The programme draws on 600,000 medical reports, 1.5 million patient records and clinical trials, and 2 million pages published in medical journals[10]. It is continuously learning and improving. In the field of law, the Clearwell System uses automatic language analysis techniques to classify the masses of documents transmitted to the parties before trial, which could amount to several thousand pages. In two days, a computer is able to make a reliable analysis of 570,000 documents. The work it saves is equal to that of dozens of lawyers, saving precious time in trial preparation[11].

Should we fear these changes? There is no fundamental economic law that guarantees that everyone will be able to find a well-paid job in the future. The less attractive work caused by polarization is a reminder that progress does not always improve job quality. But will it offer at least some jobs?

For more information: in June 2017, Gregory Verdugo published “Les nouvelles inégalités du travail: pourquoi l’emploi se polarise” [The New Labour Inequalities: Why Employment is Polarizing] at the Presses de Sciences Po, in the Collection Sécuriser l’emploi.

Link to books from Presses de Sciences Po: http://www.pressesdesciencespo.fr/fr/livre/?GCOI=27246100938740&fa=author&person_id=1987

Link to books from

Cairn: https://www.cairn.info/les-nouvelles-inegalites-du-travail–9782724620900.htm

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Growth and inequality in the European Union

By Catherine Mathieu and Henri Sterdyniak

"Growth and Inequality: Challenges for the Economies of the European Union" was the theme of the 14th EUROFRAME Symposium on Economic Policy Issues in the European Union held on 9 June 2017 in Berlin. EUROFRAME is a network of European economic institutes that includes DIW and IFW (Germany), WIFO (Austria), ETLA (Finland), OFCE (France), ESRI (Ireland), PROMETEIA (Italy), CPB (Netherlands), CASE (Poland) and NIESR (United Kingdom). Since 2004, EUROFRAME has organized a symposium on an important subject for the European economies every year.

This year, 27 contributions from researchers, selected by a scientific committee, were presented at the symposium, most of which are available on the conference web page. This text provides a summary of the studies presented and discussed at

the symposium.

As DIW President Marcel Fratzcher pointed out in his opening remarks, the rise in inequality over the last 30 years has meant that inequalities that were previously subjects of study reserved for researchers in social policy have now become subjects for numerous economists. Several questions were posed: why this rise in inequality? Is the increase in inequality in each country a necessary consequence of the reduction in inequality between countries, in Europe or at the global level? What are the macroeconomic consequences of this increase? What economic policies could avoid this?

Income inequality: the facts. Mark Dabrowski (CASE, Warsaw) – "Is there a trade-off between global and national inequality?" – stresses that the growth of inequalities within each country (especially in the United States and China) goes hand in hand with the reduction of inequalities between countries, as both are fuelled by commercial and financial globalization. However, some advanced countries have succeeded in halting the growth in internal inequalities, which shows the continuing importance of national policy.

Oliver Denk (OECD) – "Who are the Top 1 Percent Earners in Europe?" – analyses the structure of the 1% of employees earning the highest incomes in the EU countries. They represent between 9% of total payroll in the United Kingdom to 3.8% in Finland (4.7% in France). Statistically, they are older than the mass of overall employees (this is less clear in the East European countries), more masculine (this is less clear in the Nordic countries), and more highly educated. They are more numerous in finance, communication and business services.

Tim Callan, Karina Doorley and Michael Savage (ESRI Dublin), analyse the growth in income inequality in the countries most affected by the crisis ("Inequality in EU crisis countries: Identifying the impacts of automatic stabilisers and

discretionary policy"). In these five countries, Spain, Greece, Ireland, Portugal and Cyprus, primary income inequalities have increased due to the crisis, but thanks to automatic tax and social transfers, inequalities in disposable income have remained stable in Ireland and Portugal and (to a lesser degree) in Greece.

Carlos Vacas-Soriano and Enrique Fernández-Macías (Eurofound) – "Inequalities and employment patterns in Europe before and after the Great Recession" – show that income inequality decreased overall in the EU before 2008, as new entrants caught up with the older members. Since 2008, the Great Recession has deepened inequalities between countries and within many countries. The growth of internal inequality is due mainly to rising unemployment; it is striking traditionally egalitarian countries (Germany, Sweden, Denmark); and it is mitigated by family solidarity and social protection, whose roles are nevertheless under question.

Modelling the growth / inequality relationship. Alberto Cardiac (University of Cattolica del Sacro Cuore, Milan) and Francesco Saraceno (OFCE, Paris) – "Inequality and Imbalances: An open-economy agent-based model" – present a two-country model. In one, the search for external surpluses leads to pressure on wages and a depression of domestic demand, which is offset by export earnings. In the other, the growth of inequality leads to a downward trend in consumption, which is offset by the expansion of credit. The result is an endogenous debt crisis when the household debt of the second country reaches a limit value.

Alain Desdoigts (IEDES, University of Paris 1 Panthéon-Sorbonne) and Fernando Jaramillo (Universidad del Rosario, Bogota) – "Learning by doing, inequality, and sustained growth: A middle-class perspective" – present a model where innovations can be applied in production only in sectors with a sufficient size, hence those that produce the goods purchased by the middle class (so neither in the luxury goods

sector nor in the low-end goods sector). Growth is therefore stronger as the middle class expands. Redistribution is favourable to growth if it is made from the rich to the middle class, and unfavourable if it goes from the middle class to the poor.

Inequality, financialisation, monetary policy. The article by Dirk Bezemer and Anna Samarina (University of Groningen) – "Debt shift, financial development and income inequality in Europe" – distinguishes between two types of bank credit: credit for financial and real estate activities, and credit for non-financial enterprises and consumption. They explain the growth of inequality in the developed countries by the growing role of credit that finances finance to the detriment of credit that finances production.

The article by Mathias Klein (DIW Berlin) and Roland Winkler (TU Dortmund University) – "Austerity, inequality, and private debt overhang" – argues that restrictive fiscal policies have little impact on activity and employment when private debt is low (because there is a full Barro effect); they have a restrictive effect on activity and increase income inequality when private debt is high. Therefore, fiscal restraint should be applied only once private debt has been reduced.

Davide Furceri, Prakash Loungani and Aleksandra Zdzienicka (IMF) – "The effect of monetary policy shocks on inequality" – point out that the impact of monetary policy on income inequality is ambiguous. An expansionary policy can reduce unemployment and lower interest rates (which reduces inequality); it can also lead to inflation and raise the price of assets (which increases inequality). Empirically, it appears that a restrictive policy increases income inequality unless it is caused by higher growth.

Inequalities and social policy. Alexei Kireyev and Jingyang Chen (IMF) – "Inclusive growth framework" – advocate for growth indicators that include trends in poverty and in

inequality in income and consumption.

Dorothee Ihle (University of Muenster) – "Treatment effects of Riester participation along the wealth distribution: An instrumental quantile regression analysis" – analyses the impact of Riester pension plans on the wealth of German households. They significantly increase the wealth of the participating households at the bottom of the income distribution, but these are relatively few in number, while this mainly has wealth redistribution effects for middle-class households.

Inequality, poverty and mobility. Katharina Weddige-Haaf (Utrecht University) and Clemens Kool (CPB and Utrecht University) – "The impact of fiscal policy and internal migration on regional growth and convergence in Germany" – analyse the factors for convergence of per capita income between the old and new German Länder. Convergence has been driven by internal migration, investment subsidies and structural funds, but fiscal transfers in general have had no effect. The 2008 crisis favoured convergence by hitting the richest regions in particular.

Elizabeth Jane Casabianca and Elena Giarda (Prometeia, Bologna) – "From rags to riches, from riches to rags: Intra-generational mobility in Europe before and after the Great Recession" – analyse the mobility of individual incomes in four European countries: Spain, France, Italy and the United Kingdom. Before the crisis, this was strong in Spain and weak in Italy. It declined markedly after the crisis, particularly in Spain; it remained stable in the United Kingdom.

Luigi Campiglio (Università Cattolica del S. Cuore di Milano) – "Absolute poverty, food and housing" – analyses absolute poverty in Italy using an indicator based on food consumption. He shows that poor families bear particularly high housing costs, which cuts into their food consumption and health care spending. Poor families with children are tenants and were hit

especially hard by the crisis. Social policy should offer them better protection through targeted transfers in cash or in kind (health, education).

Georgia Kaplanoglou and Vassilis T. Rapanos (National and Kapodistrian University of Athens and Academy of Athens) – "Evolutions in consumption inequality and poverty in Greece: The impact of the crisis and austerity policies" – point out that the crisis and austerity policies have reduced GDP and household consumption by about 30% in Greece. This has been accompanied by an increase in inequality in consumption, which the paper documents in detail. It analyses in particular the effect of VAT hikes. Families with children were especially hard hit.

Labour market. Christian Hutter (IAB, German Federal Employment Agency) and Enzo Weber (IAB and Universität Regensburg) – "Labour market effects of wage inequality and skill-biased technical change in Germany" – use German data to estimate a structural vector model for analysing the link between wage inequalities, employment, neutral technical progress and technical progress favouring skilled labour. The latter raises labour productivity and wages, but also wage inequalities, and it reduces employment. Wage inequalities have a negative impact on employment and overall productivity.

Eckhard Hein and Achim Truger (Berlin School of Economics and Law, Institute for International Political Economy) – "Opportunities and limits of rebalancing the Eurozone via wage policies: Theoretical considerations and empirical illustrations for the case of Germany" – analyse the impact of wage increases in Germany on the rebalancing of current account balances in Europe. They show that these play a role not only through a competitiveness effect, but also through a demand effect by modifying the wage / profit distribution and by boosting consumption. They must therefore also be supported by an increase in public spending.

Camille Logeay and Heike Joebges (HTW Berlin) – “Could a wage formula prevent excessive current account imbalances in euro area countries? A study on wage costs and profit developments in peripheral countries” – show that the rule “wages must grow in line with labour productivity and the inflation target” should have had stabilizing effects in Europe both on the competitiveness of the member countries as well as on their domestic demand. This nevertheless assumes that companies do not take advantage of this to boost their profits and that no country seeks to increase its competitiveness.

Hassan Molana (University of Dundee), Catia Montagna (University of Aberdeen) and George E. Onwordi (University of Aberdeen) – “Reforming the Liberal Welfare State: International Shocks, unemployment and household income shares” – construct a model to show that a free market country, such as the United Kingdom, could improve the functioning of its labour market by reducing flexibility to move towards a flexi-security model: higher unemployment benefits, restrictions on redundancies, greater spending on training, and support for hiring. By boosting labour productivity, this strategy would reduce the structural unemployment rate and increase the share of profits.

Guillaume Claveres (Centre d’Economie de la Sorbonne, Paris) and Marius Clemens (DIW, Berlin) – “Unemployment Insurance Union” – propose a model for European unemployment insurance that would cover part of the expenses of unemployment benefits. This could reduce fluctuations in consumption and unemployment resulting from specific shocks. This assumes, however, that it would apply only to cyclical unemployment, which is difficult to define.

Bruno Contini (Università di Torino and Collegio Carlo Alberto), José Ignacio Garcia Perez (Universidad Pablo de Olavide), Toralf Pusch (Hans-Boeckler Stiftung, Düsseldorf) and Roberto Quaranta (Collegio Carlo Alberto) – “New approaches to the study of long-term non-employment duration

via survival analysis: Italy, Germany and Spain" – analyse involuntary non-activity (people who would like to work but have given up looking for a job and lost their rights to unemployment benefits) in Germany, Italy and Spain. This is particularly important and sustainable in Spain and Italy. They caution against measures to encourage redundancies, job insecurity and incentives for undeclared work.

Taxation. Markku Lehmus, (ETLA, Helsinki) – "Distributional and employment effects of labour tax changes: Finnish evidence over the period 1996-2008" – uses a general equilibrium model with heterogeneous agents to evaluate the impact of the reduction in the taxation of employment in Finland from 1996 to 2008. He shows that this explains only a small share of the rise in employment (1.4 points out of 16%) and of the rise in income inequality.

Sarah Godar (Berlin School of Economics and Law) and Achim Truger (IMK and Berlin School of Economics and Law) – "Shifting priorities in EU tax policies: A stock-taking exercise over three decades" – analyse the evolution of taxation in the EU states: from 1980 to 2007, taxation became less progressive with lower marginal rates of income tax and corporation tax, and preferred treatment of capital income. The crisis of 2008 and the difficulties with the public finances temporarily slowed this trend; an increase in revenues was, however, often sought by raising VAT.

Alexander Krenek and Margit Schratzenstaller (WIFO) – "Sustainability-oriented future EU funding: A European net wealth tax" – argue for the introduction of a European household wealth tax, which could help finance the European budget.

The macroeconomic consequences of inequalities. Bjoern O. Meyer (University of Rome – Tor Vergata) – "Savings glut without saving: Retirement saving and the interest rate decline in the United States between 1984 and 2013" – explains

60% of the decline in the interest rate in the United States, despite the decline in the overall household saving rate, by demographic factors (the differential rise in life expectancy), the slowdown in labour productivity gains and the increase in income inequality.

Marius Clemens, Ferdinand Fichtner, Stefan Gebauer, Simon Junker and Konstantin A. Kholodilin (DIW Berlin) – "How does income inequality influence economic growth in Germany?" – present a macroeconomic model in which short-term income inequalities increase the productivity of each asset (incentive effect), but reduce overall consumption (savings effect); in the long term, they have a negative impact on the formation of the human capital of young people in the working classes. Hence an exogenous increase in income inequalities first has a negative effect on GDP (demand effect), then positive (individual incentive effect) and then again negative in the long term (human capital effect). The effect is always negative on household consumption and positive on the external balance.

Universal basic income: An ambition to be financed

By Pierre Madec and Xavier Timbeau

This evaluation of Universal Basic Income (UBI), the flagship proposal of French presidential candidate Benoît Hamon, highlights a potentially important impact of the measure on the living standards of the least well-off households and on inequalities in living standards. If implemented, a universal basic income would have the effect of making France one of the

most egalitarian countries in the European Union. In return, the "net" cost of the programme could be high, around 45 to 50 billion euros. Given the measure's cost, financing it through an income tax reform could make the French socio-fiscal system even more redistributive, but would lead to a considerable increase in the marginal tax rates borne by the wealthiest households.

By making it one of the flagship proposals of his election programme for the presidency, Benoît Hamon has revived the debate around a universal basic income (UBI). It is a radical project, the subject of numerous controversies (see, for example, Allègre and Sterdyniak, 2017), so the quantification of the programme is needed. Starting from Benoît Hamon's proposal, which has been significantly modified in recent weeks, we attempt here, using a number of important assumptions (total or partial individualization, dependence on other social benefits) to make an initial evaluation. The idea here is neither to enter into the debate as to whether the modalities of application chosen are relevant, such as the exclusion of pensioners, nor to judge how close the proposal in its present form comes to an ideal of universality. Rather the aim is to avoid this type of debate and to qualify and quantify the effects of the implementation of the UBI as proposed by the presidential candidate.

The latest version of the first step in the Universal Basic Income can be summarized as follows: "A basic income corresponds to a rise in net income that starts at 600 euros for people without resources and then disappears at 1.9 times the minimum wage (SMIC)."

Put like this, the proposal is for a differential allocation making it possible not to give rise to an artificial tax increase among those whose income situation is not changed by the universal income.

For married couples, the programme is not automatically

individualized since it would still be possible to choose to maintain joint taxation. Couples with a family quotient that is less than the potential amount of the UBI should choose individualization. This is the case for couples with low incomes and not much income differential. Conversely, couples for whom the family quotient provides a bigger advantage than the basic income should choose to stick with joint taxation[1]. This would be the case for couples in which one of the individuals has a very high income and the other has no income[2].

For the most modest households the UBI replaces the RSA (income supplement for the working poor) and the Prime d'activité (working tax credit), and the calculation of social benefits (housing and family allowances, disabled adult allowance, scholarships, etc.) is not modified, as their amounts are included in the resources used to calculate the universal income.

In the general framework, for all tax households whose gross resources are less than 1.9 times the SMIC, i.e. 2,800 euros gross per month, the UBI is equal to the difference between the base amount of 600 euros per month (7,200 euros per year) and 27.4% of the tax household's gross resources. For non-taxable households, the UBI is considered a tax on negative income. For taxable households with gross resources of between 1.5 and 1.9 times the SMIC (3.8 SMIC in the case of a married couple), the UBI reduces the income tax due, thereby increasing the household's disposable income, with this additional income cancelling out at 1.9 SMIC. The measure's cost to the public finances for these households therefore corresponds to the difference between the amount of the UBI and the income tax currently paid. For tax households with gross resources of more than 1.9 times the gross SMIC (3.8 SMIC for married couples), the current system applies and there is no gain (Figure 1).

Formally, the monthly amount of UBI received by a tax

household composed of a single adult and with resources of less than 1.9 times the gross SMIC is based on the following formula:

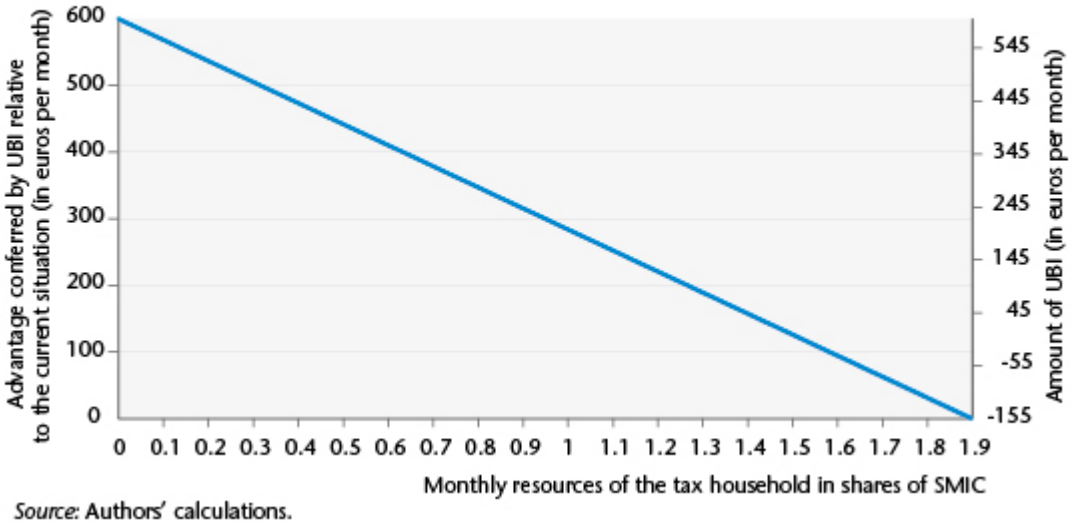
$UBI = 600 - 0.274 \times GR$

GR, gross resources, corresponds to the gross taxable income, as defined in the tax code, of the tax household, increased by a factor of 1.33 used to approximate the conversion between taxable income and gross resources including charges and contributions, the tax base for the calculation of the UBI. In the case of a married couple, the UBI is calculated as follows, since the UBI as proposed is not then individualized:

$UBI = [600 - 0.274 \times GR/2] \times 2$

In order to measure the measure's redistributive impact, we have drawn on the micro-simulation model of the DREES and INSEE known as *INES* ([3] see the box). As the last operational version of the model dates from 2015, the results presented must be interpreted In line with the legislation of 2015. In fact, measures such as the Prime d'activité credit, introduced in 2016, are not taken into account, in contrast to the Prime pour l'emploi in-work tax credit (PPE).

Figure 1. Amounts of UBI and advantages conferred in shares of SMIC for a tax household composed of one adult



Source: Authors' calculations.

As of January 2018, people over age 18 who are still reported in their parents' tax household and who are UBI eligible must leave their parents' tax household in order to benefit from the UBI. It should be noted that this case is not dealt with in our evaluation, given the complexity of taking into account transfers between parents and children when they are not in the same tax household. We will therefore focus on households in which the reference person was aged between 18 and 64, i.e. 20 million households out of the 28.3 million total households in France, as the rest, pensioners, are not eligible for the measure.

The UBI has been modelled as an additional line in the calculation of income tax, with the amount of UBI being subtracted, subject to conditions of age, resources and marital status explained above, from the latter.

Subject to these assumptions, the UBI should benefit 11.6 million households in which the reference person is aged 18 to 64, at a gross cost of around 51 billion euros, i.e. an average of 4,400 euros per year and per beneficiary household.

The gross cost is not the cost to the public purse. Indeed, the implementation of the UBI would de facto lead to the elimination of the base RSA income supplement and the Prime d'activité tax credit from the tax-benefit system. In 2016, these two programmes had a fiscal cost of close to 15 billion euros (10 billion euros for the RSA and 5 billion for the Prime d'activité). Moreover, the interactions between universal income and these other social benefits are not yet completely set out in Benoît Hamon's proposal[4]. If the amount received from UBI were to be taken into account for the calculation of the other social benefits, the amounts paid for these would fall significantly. The gross cost of universal income would remain unchanged, but savings could be realized on social benefits.

We assume here that the amount received in social benefits by

the household is taken into account for the final calculation. In other words, we subtract from the amount of UBI received by the household 27.4% of the total amount of social benefits received in cash (housing and family allowance, scholarships, disabled adult allowance, etc., i.e. 32 billion euros per year for potential UBI beneficiaries). While including the benefits in the calculation of the amount of UBI is complicated by the structure of the microsimulation model, it is possible to estimate the reduction in the overall amount of UBI paid by taking into account total social benefits, about 6 billion euros.

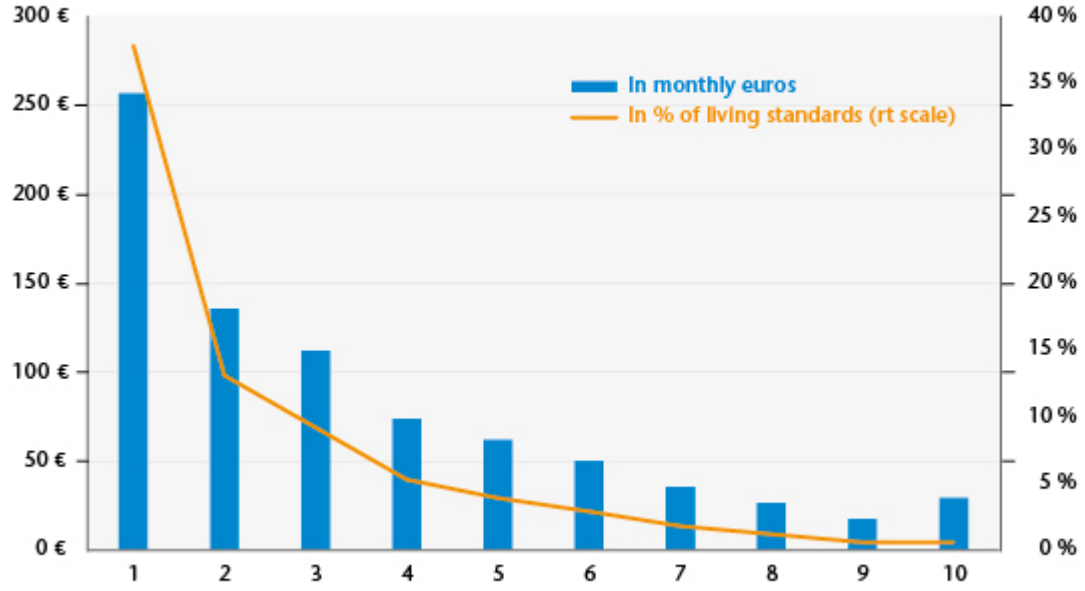
If this option is chosen – which we assume in the absence of further clarification – UBI's "net" cost, excluding the 18-25 year-olds fiscally reporting under their parents, would be on the order of 30 billion euros, which is close to the amount declared by the candidate, to which, once again, it will be necessary to add the amount owed to individuals between the ages of 18 and 24 who are currently reported fiscally by their parents. In 2015, of the 5.2 million individuals aged 18 to 24, 1.7 million were fiscally independent of their parents. The additional gross cost if no 18-24 year-olds were included on their parents' tax statements would therefore be on the order of 25 billion euros, from which should be subtracted 27.4% of the scholarships (0.115 billion euros per year) and housing benefits paid (1.4 billion euros per year), as well as the tax benefits currently enjoyed by the parents of the said individuals (benefit of up to 1,500 euros per year and per child, to a maximum of 5.2 billion if all households are at the ceiling).

The measure, which is targeted at low-income households and not funded by an increase in household taxation or a decrease in social benefits, would have a positive impact on the bottom of the distribution of living standards (Figure 2) [5].

On average, households in the first decile of living standards should see their standard of living rise by 257 euros per

month per consumption unit, i.e. a 38% increase in their average standard of living. The gain for households in the second decile should be roughly half as much, i.e. 137 euros per month per consumption unit, which represents a 13% increase in their average standard of living.

Figure 2. Average monthly gains by consumption unit and living standards decile



Source: INSEE Tax and revenue [Revenus fiscaux et sociaux] survey 2013 (updated 2015); Drees, Ines 2015 model, Authors' calculations.

Given that, unlike many benefits, the UBI is allocated not to households but to *tax* households, some members (not taxed jointly but cohabiting as unmarried couples not in PACS civil partnerships) of some households in the upper deciles of the distribution of living standards should receive the UBI (and the highest decile more than the ninth decile due to a composition effect). In other words, there are tax households with low gross incomes among households with high living standards[6].

Based on these assumptions, the median standard of living would be raised by 3.6%, and the poverty rate, i.e. the share of French households with resources under 60% of the median level, i.e. about 1,000 euros / month / consumption unit, would come to 8.5%, versus 13.4% at present. The median standard of living of the poorest households – those with a

standard of living below the poverty line – would rise by 11%. The intensity of poverty, measured as the relative gap between the median standard of living of the poor and the poverty line, would also fall by a third, from 17% today to 11%.

Finally, the Gini coefficient of living standards, an indicator of inequality, would be reduced by 0.04 to a level of 0.26, thus moving France from a median situation in terms of the Gini at the European level to being among the least unequal countries – the European median of the Gini in 2015 was 0.30 (and the lowest 0.25).

Excluding the young people (aged 18-24) reported on their parents' taxes, the net cost of the UBI would be on the order of 30 billion euros. By adding them, subject to a more detailed assessment, the net cost would be on the order of 49 billion. This is a long way from the 400 billion once bandied about, but it is still not negligible[7]. If the UBI were to be financed by a reform of personal taxation, this would lead to a considerable increase in the marginal rates of the highest deciles of the income distribution. Note that personal income tax brings in 74 billion euros annually. Another tax base, such as wealth, could also be used, but this would lead to a significant hike in wealth taxes. Property taxes and the ISF wealth tax currently bring in a little less than 30 billion euros. Moreover, the redistributive effects of the UBI – which are significant, in our assessment – would be amplified by an increase in taxation that is already progressive.

Box: The *Ines* micro-simulation model (Sources: INSEE, DREES)

Ines is the acronym for "Insee-Drees", the two organizations that are jointly developing the model. The model is based on the INSEE's Tax and Social Revenue surveys (ERFS), which

include several hundred details on each individual and accurate and reliable data on income taken from tax returns. It can be used to simulate all recent legislative years using more recent ERFS years.

The model is used to carry out studies at annual intervals, but it is also used for in-depth studies in order to inform the economic and social debate in the areas of monetary redistribution, taxation and social protection. Finally, it is sometimes used to aid reflection in response to specific requests from various high government councils, supervisory ministries or control bodies (IGF financial inspectorate, Court of Auditors [*Cour des comptes*], Igas social inspectorate).

The *Ines* model simulates:

– **Social charges and direct taxes:** social contributions, CSG wealth tax, CRDS debt contribution and income tax (including the Prime pour l'emploi credit);

– **Social benefits** other than those corresponding to replacement income: personal aid for housing; the main social minima: the Revenu de solidarité active (RSA) income supplement; the Disabled adult allowance (AAH) and its complements; pension supplements and the Supplementary disability allowance (ASI); family benefits: the Family allowance (AF), the Family complement, the Back-to-school allowance (ARS) and high school scholarships, the Young child benefit (Paje) and its complements (Free choice of activity complement – CLCA – and Free choice of childcare complement – CMG), public subsidies for childcare in collective and family kindergartens, the Family support allowance (ASF) and the Disabled child education allowance (AEEH); and the Prime d'activité credit.

The main omissions relate to local taxes and subsidies (property tax, for example) and the Solidarity tax on wealth

(IS). Retirement pensions, unemployment benefits and housing tax are not simulated but are presented in the data. Indirect levies are strictly speaking also outside the scope of the *Ines* model. The model simulates, using ranges, the different benefits to which each household is entitled and the taxes and levies that it has to pay. *Ines* draws on the INSEE's Tax and Social Revenue surveys (ERFS), which bring together socio-demographic information from the Employment Survey, administrative information from the CNAF, the CNAV and the CCMSA, and details of the income reported to the tax authorities for the calculation of income tax.

Ines is a so-called "static" model: it does not take into account any changes in household behaviour, for example in terms of birth rates or labour market participation, which could be induced by changes in tax-benefit law. Since 1996, the model has been updated annually during the summer in order to simulate the most recent legislation and cover the preceding year. For example, in the summer of 2016, *Ines* was updated to simulate the legislation for 2015. Based on these updates, the INSEE and DREES teams contribute annually to the INSEE's *Social Portrait,* in which they analyse the redistributive balance sheet for the tax and benefit measures enacted during the preceding year. The latest publication is entitled "Tax and benefit reforms in 2015 are leading to a slight redistribution from the richest 30% to the rest of the population" (André, Biotteau, Cazenave, Fontaine, Sicsic, Sireyjol).

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[1] Recall that the family quotient gives entitlement to a maximum tax reduction of 30,000 euros per year. The abolition of the family quotient would yield 5.5 billion euros (HCF, 2011) but would cost all the UBI paid to partners with a lower income who have chosen individualization.

[2] We have chosen not to take into account these tax optimization mechanisms within households, but it is understood that this means the evaluation proposed for the cost of the measure is underestimated.

[3] The source code and documentation for the *INES* micro-simulation model was opened to the public in June 2016 (https://adullact.net/projects/ines-libre). We have been using the 2015 open access version since 1 October 2016.

[4] In particular, the use of a micro-simulation model such as *INES* makes it possible to explore the consequences of different choices that can be made about the situation of the persons covered, the net redistribution effected and what has to be financed. A change in the rules for allocating or calculating a social benefit can have significant impacts on the net cost and the redistributive effects.

[5] The proposed measure significantly alters the distribution of living standards. Due to this, some households see their membership in a decile of living standards change positively or negatively. The deciles are maintained here at their pre-reform level.

[6] By way of illustration, the average age of the reference persons in households in the upper decile of the standard of living benefiting from the UBI is over 55. It can thus be assumed that these households are home to young adults who are fiscally independent but have few resources.

[7] The evaluation presented here is called “static”. It therefore does not take into consideration any possible changes in individual behaviour with respect to employment due to the impact of this measure.

Inequality in Europe

By Guillaume Allègre

In the preamble to the Treaty establishing the European Economic Community, the Heads of State and Government declare that they are "[r]esolved to ensure the economic and social progress of their countries by common action to eliminate the barriers which divide Europe". Article 117 adds that "Member States agree upon the need to promote improved working conditions and an improved standard of living for workers, so as to make possible their harmonisation while the improvement is being maintained". Sixty years after the Treaty of Rome, what is the state of economic and social inequality in Europe? How did this change during the crisis?

Every year Eurostat measures inequality in the different EU Member States. The Great Recession has led to widening inequality within the countries of Europe. The Gini index of equivalent disposable income rose from 30.6 in 2007 to 31 in 2015 on average in the 28 EU Member States. However, part of the increase is due to large breaks in the series in France and Spain in 2008. Inequality is thus clearly lower in Europe than in the United States: for 2014, the Gini index of disposable income is estimated at 39.4 in the United States, while in the European Union it ranges from 25 (Czech Republic) to 37 (Bulgaria). The United States is therefore more unequal than any country in the EU and much more unequal than most countries.

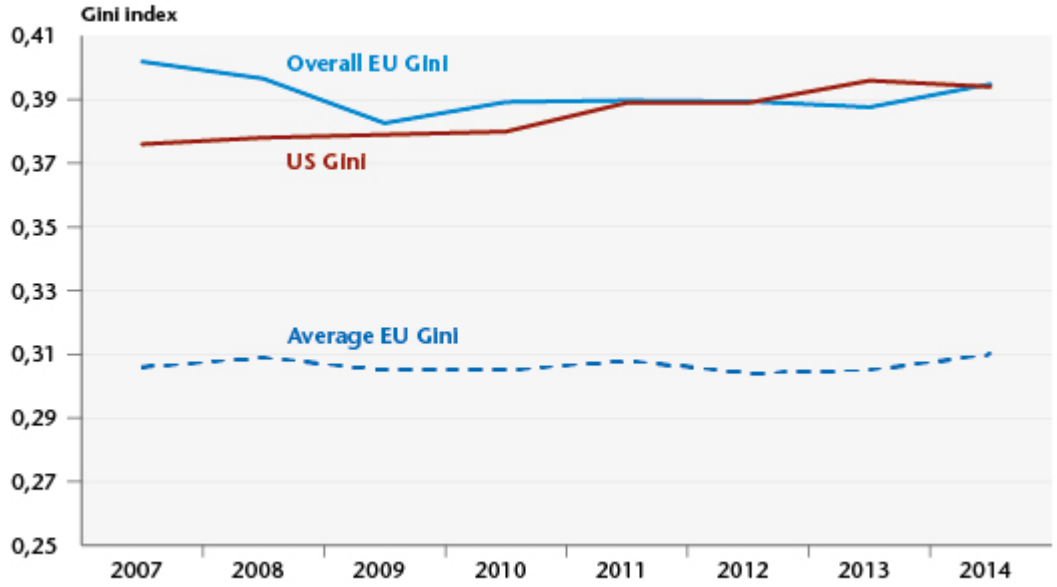
However, the presentation of an average Gini index in the European Union may be misleading. Indeed, it takes into account only inequalities within the European countries and not inequalities between countries. However, there are

significant inequalities between European countries. In the national accounts, household income based on EU consumer purchasing power in 2013 ranged from 37% of the European average (Bulgaria) to 138% (Germany), i.e. a ratio of 1 to 4.

At the European level, Eurostat calculates an average of national inequalities, as well as the international inequalities. On the other hand, Eurostat does not calculate inequalities between European citizens: what would inequality be if national barriers were eliminated and European inequality was calculated at the European level in the same way that one calculates inequality within each nation? It might seem legitimate to calculate inequality between European citizens like this insofar as the European Union constitutes a political community with its own institutions (Parliament, executive, etc.).

The EU-SILC database, which provides the equivalent disposable income (in purchasing power parity) of a representative sample of households in each European country makes such a calculation possible. The result is that the overall level of inequality in 2014 in the European Union is the same as that in the United States (graph). What conclusion should be drawn? If we look at the glass as half-empty, we could emphasize that European inequality is at the same level as in the world’s most unequal developed country. If we look at the glass as half-full, we could emphasize that the European Union does not constitute a nation with social and fiscal transfers, that it has recently expanded to include much poorer countries and that, nevertheless, inequality is no greater than in the United States.

Figure: Inequality in disposable income in Europe and the United States, 2007-2014



Source: EU-SILC, Eurostat, OECD.

Overall inequality in the European Union can be seen to decline slightly between 2007 and 2014. The Theil index, another indicator of inequality, can be used to break down the change in European inequalities between what comes from changes in inequality between countries and what comes from changes within countries. Between 2007 and 2014, the Theil index fell from 0.228 to 0.214 (-0.014). Inequality within countries was generally stable (+0.001) whereas inequality between countries declined (-0.015). These developments are similar to what has been observed by Lakner and Milanovic at the global level ("Global Income Distribution: From the Fall of the Wall to the Great Recession"): rising national inequalities and declining inequalities between countries (in particular due to China and India catching up).

So far, the main instrument used by the European Union to reduce inequality in Europe has been the opening of borders. But while opening up borders can help the EU's less affluent countries (notably Bulgaria and Poland) to catch up, it can also have an impact on inequality within countries. However, Europe does not as yet have a social policy. This sphere falls above all within the competence of the States. But opening up

the borders is exacerbating social and fiscal competition. For instance, the higher marginal rates of personal income tax (IRPP) and corporate income tax (IS) have dropped significantly since the mid-1990s, while the VAT rate has increased (A.Bénassy-Quéré et al., "Reinforcing tax harmonization in Europe" [in French]).

In France, the government has committed to lower the corporate income tax rate from 33.3% to 28% by 2020. This follows a trend towards lowering taxation on business but raising it on households. The impact on inequality has so far been counterbalanced by the fact that the rise in taxation has focused on the wealthiest households. However, the French Presidential candidates Fillon and Macron advocate a substantial reduction in the taxation of capital income (withholding tax and the reduction of the ISF wealth tax on real estate for Macron; elimination of the wealth tax for Fillon) in the name of competitiveness. The dangers of fiscal and social competition are thus beginning to make themselves felt.

What is the initial assessment of Germany's minimum wage?

By Odile Chagny (IRES) and Sabine Le Bayon

A year and a half after introducing a statutory minimum wage, the German Commission in charge of adjusting it every two years decided on 28 June to raise it by 4%. On 1 January 2017,

the minimum will thus rise from 8.50 to 8.84 euros per hour. This note offers an initial assessment of the implementation of the minimum wage in Germany. We point out that the minimum wage has had some of the positive effects that were expected, helping to reduce wage disparities between the old Länder (former West Germany) and the new Länder (former East Germany), and between more skilled and less skilled workers.By establishing recognition of the wage value of Germany's "mini-jobs", the minimum wage has made these marginal forms of employment less attractive for employers, representing a major rupture for the welfare state. But the minimum wage has also had some less fortunate results. Due probably to the flattening of pay scales at the minimum wage level, certain categories of employees in former West Germany seem to have suffered from the wage restraint that was imposed on them just before the introduction of the minimum wage, as companies limited the impact of the minimum wage on their total salary costs.

Unlike in France, there are no rules requiring an automatic annual revision of the minimum wage in Germany. It is adjusted only every two years upon a decision by the Commission. The decision taken on 28 June 2016 will take effect on 1 January 2017. There will then not be another revision until 2019, based on a decision taken in June 2018.

At first glance, the revaluation is fairly significant (+4% on 1 January 2017, i.e. a 2% annual rate) when compared to recent revisions of the minimum wage in France, where the SMIC, as it is called, rose by 1% per year over the last four years. This is due to the fact that, in accordance with the law establishing the minimum wage, the revaluation that takes place in Germany is made in light of increases concluded under collective bargaining agreements[1], thereby ensuring equivalent gains in purchasing power for all employees covered by a collective agreement. Since increases in negotiated wages have been relatively high since 2012 (+2.7% annual rate for

the basic hourly wage index negotiated between 2011 and 2015, against +1.6% for the basic monthly wage in France over this same period), this automatically affects the minimum wage[2].

However, the level of the minimum wage is low and it is likely to remain so. It is much lower than the current level in France (9.67 euros since January 2016). According to the national accounts, this represented 34% of the average wage in 2015 (47% in France) and 48% of the median wage of full-time employees in 2014 (61% in France), which puts Germany in the lower range among the major European economies[3].

Nevertheless, even though set at a relatively low level, much was expected of the minimum wage's ability to correct the very sharp wage segmentation in Germany[4], which points to the need to pay particular attention to the categories of employees who benefited from it.

Between 4 and 5.8 million employees were potentially affected by the introduction of the minimum wage in 2015

Somewhat paradoxically, it is difficult to get a clear picture of the actual number of employees who received less than 8.50 euros at the time the minimum wage was introduced. The most recent estimates vary between 4 million according to Destatis and a range of 4.8 to 5.4 million according to the WSI Institute (between 10% and 16% of the total workforce)[5]. This is because the law establishing the minimum wage left some uncertainty about its practical application. For instance, the law stipulates that the minimum wage of 8.5 euros per hour applies while taking into account the actual working time (knowing that there is no statutory work week in Germany), and it gives no precise definition of the pay elements to be taken into account (year-end bonuses, 13th month bonus, miscellaneous bonuses). On this point, following an employee's complaint, on 25 May 2016 Germany's Federal Labour Court ruled that a bonus previously paid once a year can be included in the calculation of the minimum wage when it

is henceforth paid fractionally each month and this has been approved by a company agreement. This automatically leads to decreasing the number of potential beneficiaries.

While calculating the number of people receiving less than 8.50 euros is tricky, there is nevertheless relatively good agreement on estimates indicating that employees holding mini-jobs and employees in the new Länder just prior to the introduction of the minimum wage were the main ones affected. Thus, according to Destatis, 55% of the employees concerned were “mini-jobbers”, mainly in western Germany where they are the most numerous. In eastern Germany, the proportion of people earning less than 8.50 euros was twice as high as in western Germany (just over 20% of employees, around 10% in the old Länder). Not surprisingly, more than 80% of those working for less than 8.50 euros were in companies not covered by collective bargaining agreements, with twice as many women as men. Finally, catering and retail were the trades most affected, as approximately 50% and 30% of their employees earned less than 8.50 euros, according to the WSI in 2014.

1.9 million people were on the minimum wage in April 2015 according to Destatis

The minimum wage has partly fulfilled its mission by ensuring a “decent” wage for society’s most vulnerable people. If we stick to the Destatis estimate, while 4 million people received a wage of less than 8.50 euros in April 2014, “only” 1 million were in this situation a year later. Moreover, among the 1.9 million employees earning 8.5 euros in April 2015, the great majority of whom were undoubtedly earning less before the entry into force of the minimum wage, 91% worked in companies not covered by a collective agreement and 56% held mini-jobs.

A significant increase in wages in the new Länder and for mini-jobs

It is obviously too early to have microeconomic surveys with accurate information about changes in the salaries of those affected by the introduction of the minimum wage, so the main source used is the quarterly wage survey [6], which provides data on different job categories (conventional jobs, i.e. subject to social security contributions, and mini-jobs) and skills levels.

Based on this survey, it is clear that the implementation of the minimum wage undoubtedly led to raising the monthly wages of certain categories of employees in 2015: for conventional jobs [7] in the new Länder and for mini-jobs in western Germany (Table 1).

Hourly wages in eastern Germany rose especially quickly in 2015 for unskilled (+8.6%) and semi-skilled employees (+5.8%) compared to those with average qualifications (+4%), helping to reduce wage inequality in these German states. However, no such trend could be seen in western Germany regardless of the skills level.

Table 1. Changes in gross total monthly wages (incl. Bonuses)

	Conventional jobs (full time and part time)		Mini-jobs	
	Ex-West Ger.	Ex-East Ger.	Ex-West Ger.	Ex-East Ger.
2011	3.1	2.3	1.8	7.6
2012	2.5	1.0	1.0	7.2
2013	1.0	1.7	5.6*	4.2
2014	1.5	1.9	1.4	6.7
2015	1.6	3.4	3.2	5.7

* This increase is due to the revision of the monthly cap on pay for mini-jobs from 400 to 450 euros.
Source: Destatis, Quarterly wage survey; authors' calculations.

Questioning the logic of mini-jobs

Given that 60% of employees holding mini-jobs received less than 8.5 euros per hour in 2014, one would expect a more marked acceleration of average earnings in this category of employees. The most likely reason why this was not the case is

that the implementation of the minimum wage has de facto made these jobs less attractive for employers and led to a reduction in those workforce numbers and probably in the hours worked.

While mini-jobs are characterized by an absence of employee social security contributions and the acquisition of fewer employee rights, they are nonetheless subject to higher levies paid by employers (mainly social contributions and flat-rate tax on income) than in the case of a conventional job. As a result, the attraction for employers prior to the introduction of the minimum wage was due mainly to the flexibility offered by this type of employment as well as to the possibility of low hourly wages[8], as there was no limitation on working hours (the only constraint being the monthly ceiling of 450 euros).

However, by including mini-jobs within the coverage of the minimum wage, the law has made them much less financially attractive to employers because their hourly cost now exceeds that of a conventional job, including a midi-job[9] (see Table 2), with the number of hours implicitly capped (at 12 hours per week given the monthly ceiling of 450 euros).[10]

We therefore expect a reduction in the number of these jobs through simple destruction or reclassification as conventional jobs [11]. There has in fact been a sharp decrease in the number of mini-jobs since the beginning of 2015, especially mini-jobs that are the worker's main activity, and an acceleration in the creation of conventional part-time jobs (graphic). The conversion into conventional jobs seems clear in the hotel, catering and retail trades, where mini-jobs had been prevalent and where conventional job creation has been particularly important. But although the conversion of mini-jobs into conventional jobs has been relatively high, it has not been massive, which is probably due both to a reduction in the actual hours worked so as to stay under the ceiling for mini-jobs (which for the employee has reduced the impact of a

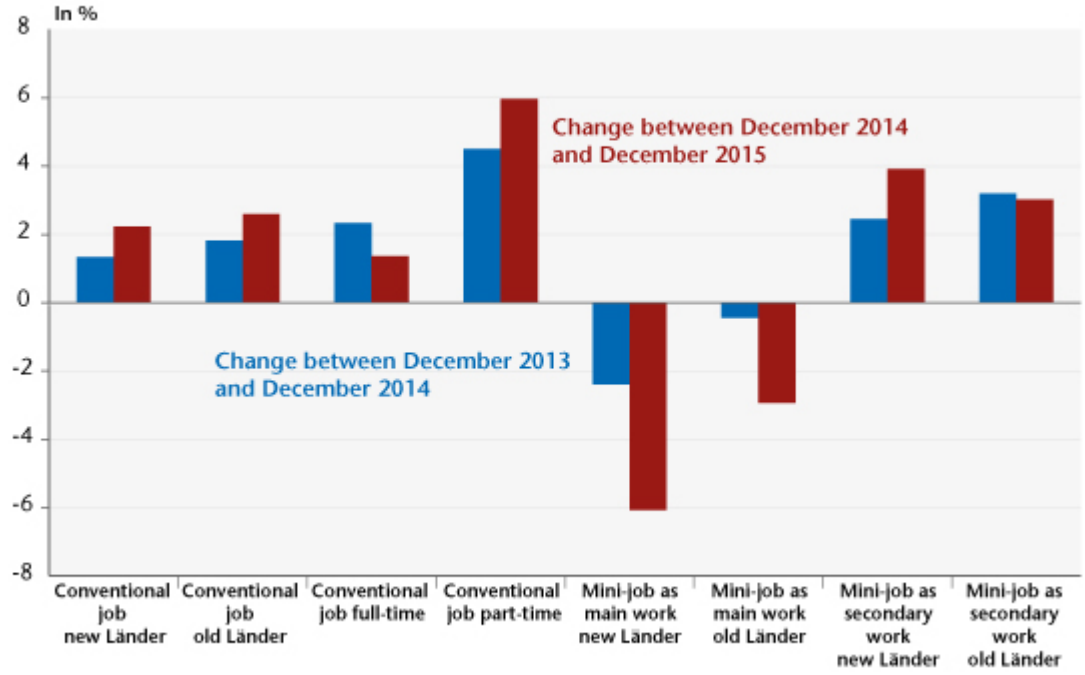
higher hourly wage) and to incorrect documentation of working time by the employer, with an underestimation of the hours worked[12]. The assurance that the legal conditions governing these jobs will be applied is even less certain given that the employee too may have a financial interest in non-compliance with the minimum wage, by accepting an underestimation of the number of hours so that their monthly wage remains below the 450 euro ceiling. The employee thus receives a net wage equal to the gross wage, which is not the case if the wage exceeds 450 euros and he occupies a midi-job, since the rate of the employee social contribution is then progressive and he becomes subject to conventional taxation (which depends on the employee's family characteristics).

Table 2. Charges for a conventional job subject to social contributions and a mini-job before and after the introduction of the minimum wage

	Before the introduction of the minimum wage, a low wage cost for a mini-job enabled the employer to limit the cost of labour	After the introduction of the minimum wage, the employer trades off between:	
		Maintaining the mini-job (higher employer cost)	Converting it to a conventional job(1) (same employer cost as previously)
Gross wage (€/hour)	7.8	8.5	8.5
Employer social contributions (€/hour)	2.3	2.6	1.6
Labour cost for the employer (€/hour)	10.2	11.1	10.1
Employee social contributions (€/hour)	0.0	0.0	1.7[2]
Net wage (€/hour)	7.8	8,5	6.8

(1) Cas e of a mini-job with a monthly salary of 451 euros, i.e. just above the ceiling for mini-jobs, for a working time of a little more than 12 hours . The employee social contributions are then 10.9%.
(2) Case of an employee with a child. Otherwise, the dependency contribution rate (taux de cotisation dependence) of an employee subject to social contributions is increased by 0.25%.
Mini-job :
Employer portion: 30% (= 13% health + 15% pension + 2% flat-rate income tax).
Conventional job, subject to social contributions:
Employer portion: 19.325% (=7.3% health + 9.3% pension + 1.5% unemployment + 1.175% dependence);
Employee portion: 20.425% (=8.4% health +9.35% pension + 1.5% unemployment + 1.175% dependence).
Source: German legislation.

Figure. Change in employment by categories, before and after the introduction of the minimum wage



Source: Job center.

In the spring of 2015, 1 million people were still being paid below the minimum wage

The magnitude of the workforce still earning less than 8.5 euros after the implementation of the minimum wage raises several questions. This could of course be explained by the implementation deadlines and by the fact that various exemptions are allowed (long-term unemployed for the first 6 months of employment, employees in sectors providing for a transitional adaptation period – newspaper delivery, temping, the meat industry, hairdressing, agriculture, textile, laundry).

But we could also consider the actual capacity to implement the minimum wage in the "grey areas" of the collective bargaining system[13]. Among these 1 million workers, almost 80% were employed in companies not covered by collective agreements and 47% held mini-jobs.

This highlights the importance of official controls to ensure

compliance, especially as the methods of calculating the hourly wage as defined by law and jurisprudence are problematic[14]. Parliament has provided for a requirement to report working hours, but this does not apply to all employees. Of course, for all mini-jobs and for those below a certain salary threshold[15] in certain sectors particularly affected by illegal work (construction, catering, passenger transport, logistics, industrial cleaning, meat industry, etc.), the employer is now required to record the start and end of each work day and the duration of work and keep these documents for two years to avoid circumvention of the law through unpaid overtime. But there are not many inspections, and the frequency even fell by about one-third in 2015 from 2014, even as the number of people affected by the minimum wage exploded.

A fairly moderate impact on the average wage of conventional jobs

More unexpectedly, it seems that some companies anticipated the coming into force of the minimum wage by slowing increases in unskilled wages in the months preceding the law's implementation (recall that parliamentary elections took place in October 2013, and the minimum wage took effect in January 2015). The year 2014 was indeed characterized by a sharp halt to wage hikes for less skilled workers, which occurred in both the old and new Länder, a phenomenon that cannot be explained by objective factors related to the economic situation. This means, surprisingly, that certain categories of employees would have received higher wage increases in the absence of the introduction of the minimum wage.

To assess this, we simulated the hourly wages in 2014 and 2015 for conventional jobs on the basis of the 2010-2013 trend (i.e. before the minimum wage was officially incorporated into the coalition agreement of autumn 2013), and we compared the wage observed at end 2015 with the one simulated by type of qualifications and Länder in order to see which employees were

overall losers or winners (Table 3).

While in the new Länder on average all categories of employees benefited from the implementation of the minimum wage, with a diffusion effect from the minimum wage on wages immediately above 8.50 euros (and a revaluation of all salary scales), it seems that in the old Länder the least skilled categories suffered from its introduction. In other words, those whose salary was slightly higher than the minimum wage before the law took effect would have enjoyed a higher hourly wage in early 2016 on the basis of past trends!

This braking effect is such that at the level of Germany as a whole, and given the weight of the old Länder in the workforce (81% of conventional waged jobs), the unskilled and semi-skilled have therefore generally suffered from the introduction of the minimum wage, a situation that is somewhat paradoxical and which most observers have failed to highlight, focusing instead on the analysis of developments following the minimum wage's introduction.

Table 3. Difference between the gross hourly wage (excl. Bonuses) for conventional jobs recorded at end 2015 and wage simulated on the basis of the 2010-2013 trend 2010-2013[1]

	Total[2]	Managers	Experienced skilled	Skilled	Semi-skilled	Unskilled
Germany	0.8	0.9	1.4	0.1	-0.3	-1.1
New Länder	2.7	2.9	2.6	2.9	2.0	3.8
Old Länder	0.7	0.7	1.0	-0.4	-0.8	-1.9

1. The wage is simulated from Q1 2014 based on the trend observed between Q4 2010 and Q4 2013. The difference between the wage seen in the last quarter of 2015 and the wage simulated on the basis of the past trend is shown in this table.
2. The total is the weighted sum of the different skills categories, based on the 2013 workforce.
Source: Destatis (Quarterly wage survey); authors' calculations.

If the stated objective of the law introducing a minimum wage in Germany was indeed achieved, namely, to end a situation where a significant number of employees were on extremely low wages, there are 1 million people who have yet to benefit, i.e. a quarter of the workforce who were potentially concerned. There is also evidence that many companies anticipated the introduction of the minimum wage in the year

before its introduction by making trade-offs in their wage policy in order to limit the impact on their costs. The result is that not all employees have been winners from the introduction of the minimum wage. What has taken place in Germany, especially in the old Länder, is a form of redistribution among unskilled workers between those who have benefited from the law [16] and those earning a little more than the minimum wage, who have experienced two years of wage restraint.

[1] For this initial reassessment, the Commission based itself on changes in the negotiated hourly wages (excluding bonuses) between December 2014 and June 2016, which was 4%, including the retroactive effect of the latest collective agreement signed for the civil service.

[2] Like employee purchasing power, inflation rates in France and Germany have been very similar over the same period: +1.1% annual rate over the period 2011-2015 in Germany, 0.9% in France for the HICP.

[3] M. Amlinger, R. Bispinck and T. Schulten, 2016 : "The German Minimum Wage: experiences and perspectives after one year", *WSI Report* No. 28e, 1/2016.

[4] O. Chagny and F. Lainé 2015: "Comment se comparent les salaires entre la France et l'Allemagne?", Note d'analyse no. 33, *France Stratégie*.

[5] By removing the exceptions: trainees, apprentices and those under age 18.

[6] This was conducted among about 40,000 companies with more than 10 employees (5 in some sectors such as retail or catering to reflect the specific characteristics of these areas) in industry and the service sector.

[7] This observation holds whether one is interested in the total monthly pay (including bonuses) or the hourly wage excluding bonuses, with wage increases of respectively 3.4% and 4% in 2015.

[8] B. Lestrade, 2013: “Mini-jobs en Allemagne. Une forme de travail à temps partiel très répandue mais contestée”, *Revue française des affaires sociales*, 2013/4.

[9] For these contracts, which pay between 450 and 850 euros, the contribution rate for the employer is that of a conventional job, while the contribution rate for employees is progressive, ranging from 10.9% to 20.425% based on the salary.

[10] Note that the average working time in 2008 for these jobs was 12.8 hours per week (D. Voss and C. Weinkopf, 2012, “Niedriglohnfalle Minijob”, WSI Mitteilungen 1/2012).

[11] For a midi-job, if the employee works between 12 and 23 hours weekly, and in a conventional job more than 23 hours.

[12] The most common strategies for circumventing the law in terms of working time are: unpaid overtime, payment for a task without fixed working hours and poor calculation of the time worked (on-call time, etc.). For more, see T. Schulten, 2014, “Umsetzung und Kontrolle von Mindestlöhnen”, *Arbeitspapiere* 49, GIB, November 2014.

[13] For more, see: “Allemagne. L’introduction d’un salaire minimum légal : genèse et portée d’une rupture majeure”, O. Chagny and S. Le Bayon, *Chronique internationale de l’IRES*, no. 146, June 2014.

How do French people look at equality of opportunity?

By Michel Forsé (CNRS) and Maxime Parodi

Do the French people believe in equal opportunity? The Dynegal survey asked the question in 2013 to a representative sample of 4,000 individuals, whose responses were very mixed. In a recent article in the *Revue de l'OFCE* (no. 146, 2016 [in French]), we show that it is the middle classes who prove to be a little more convinced than others by the idea that schooling gives everyone a chance and that one's success in life does not depend on social origin. This result is in line with the thesis by Simmel that makes the middle-class the site of social mobility.

The survey also raises questions about the link between the belief in equal opportunity and social expectations in terms of recognition of merit and equality of results. As might be expected, the less one believes in equality of opportunity, the less one defends the recognition of merit, and the greater the demand for equality of results. On the other hand, French people who are perfectly convinced that everyone has the same chance of success defend not only the recognition of merit, but also equality of place. This unexpected result highlights, in fact, a risk inherent in a society that is conceived of as totally meritocratic: the risk of completely discrediting the losers and of not finding them a place in society.

Intergenerational inequality in four large EU countries: Does one model fit all?

Francesco Vona

The extent to which social mobility differ across countries is subject of much debate in political and academic circles. The two poles of the relatively egalitarian Scandinavian countries and the relatively unequal Anglo-Saxon ones have been taken as key examples to corroborate a simple human capital-based explanation of cross-country differences in social mobility. In fact, stark differences in educational systems (e.g. private *vs*. public financing) and returns to skills well account for the gap in social mobility between Scandinavian and Anglo-Saxon countries. However, in a recent paper using comparable individual data for these four countries (*i.e*. EUSILC), I show that this explanation does not suffice in accounting for differences in social mobility across the four largest EU economies: Germany, France, Italy and Spain.[1]

To gauge insight on the validity of the human capital story, we observe that worker's skills on which earnings depend are the result of two inputs: family background (including genetic transmission of intelligence if any) and individual abilities independent on family background. Our working hypothesis is that these two inputs are complements and thus that coming from a good family pays especially for talented individuals who not only don't face any spatial and financial constraint to access best schools but are also exposed to a more stimulating cultural environment (Cunha and Heckman, 2007). We test this hypothesis using regression techniques that allow to estimate returns to family background conditional on individual abilities (Firpo *et al*., 2009). The figure below shows the effect of family background in correspondence of

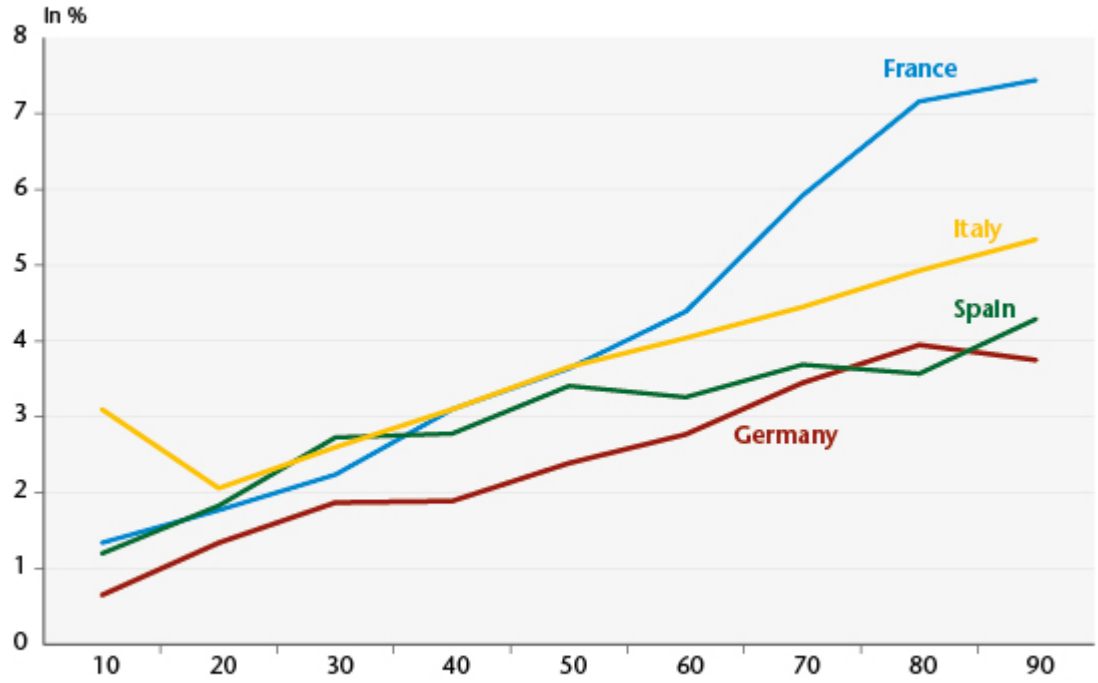
each decile of the son's earnings distribution, with a higher decile corresponding to higher individual abilities. The parental background coefficient should be interpreted as the percentage increase in earnings following a one-decile increase in the relative social position of the parents.[2]

At a first glance, our results lend to support to the hypothesis of a widespread background-ability complementarity. Returns to family background are higher at the top of the distribution not only in Germany and France, where parental influence on education is particularly important because of, respectively, the early tracking and the *grandes écoles system*, but also in the two Mediterranean countries, where usually non-meritocratic mechanisms are stronger.[3] However, one model does not fully fit all. First, the curve of returns to background is significantly steeper in the two central European countries than in the two Mediterranean countries, consistent with the idea that in Mediterranean countries family background affects children career prospects through social networks and nepotism.[4] Second, the effects of family background are significantly larger in France compared to the other three countries. While the extremely large effect in the top decile is broadly consistent with the parental influence on the probability of entering *grandes écoles* in France, large returns in the 7th and 8th decile indicate an increasingly polarized distribution of opportunities depending on family origins.[5]

This increasingly high social immobility correlated with children abilities questions the foundation of the French school system and cannot be accounted for by a simple private vs. public school argument. A possible explanation is residential segregation and thus a radical rethinking of school admission policy based on neighborhood of residence is needed. Targeted policies promoting the mixing of students from different socio-economic background in the same school appear in high need to allow the talented but disadvantaged

children to benefit from the positive peer effect from the well-off ones. Recent policy experiments carried out in the US show that these policies are particularly effective in increasing the career prospective of disadvantaged students (see Chetty *et al*. 2015).

Figure: Effects of parental background along the income distribution



Note: in France, for children in the last decile of income, an increase of one decile of parental background increases children's income by 7,5%.
Source: EUSILC, 2011.

[1] See Raitano, M., Vittori, C., Vona, F., 2015, 'The effect of parental background along the sons' earnings distribution: does one model fit for all?', *OFCE working paper*, n° 2015-18 and *Applied Economic Letters*, forthcoming.We use the information provided by the 2011 EU-SILC wave that includes a specific section with information on family characteristics when the interviewed was around 14 years old.

[2] We build a comprehensive measure of family background combining various family characteristics (mainly educational and occupational attainments of the parents) to obtain a distribution of parental social positions and associate each child to a given social position ranked from one to ten for

convenience.

[3] Note that the parental background coefficient is always statistically different from zero, apart from in the first decile in Germany and Spain.

[4] Raitano, M., Vona, F., (2015). "Measuring the link between intergenerational occupational mobility and earnings: evidence from eight European countries", *Journal of Economic Inequality*, vol. 13(1), 83-102.

[5] Note that in the previous wave of the EU-SILC survey on intergenerational mobility, France displayed lower intergenerational inequality than Italy, Spain and the UK.

The American dream (finally) proven?

By Maxime Parodi

In a recently published short article, Thomas Hirsch and Mark Rank (2015) give us some astonishing figures about American society – numbers that, taken seriously, would lead to a significantly more nuanced view of income inequality in the United States. Indeed, their study suggests that American society is much more fluid than we think. While Americans undoubtedly live in a very unequal society, most of them would experience wealth at some point in their lifetimes. There is, in reality, a high turnover between rich and poor, which would explain why Americans are not very critical of inequality.

According to this study, during their working lives (age 25 to

60), 69.8% of Americans have enjoyed at least one year of household income sufficient to be included among the richest 20%. And 53.1% of Americans have made it – for at least one year – into the richest 10%. An even more exclusive 11.1% of Americans have spent at least one year in the illustrious club of the wealthiest 1%.

But before accepting these outlandish figures, a more serious look needs to be taken of the study by Hirschl and Rank. It turns out that the numbers do not in fact offer a simple description of American society, but are rather the result of a modelling exercise. Behind these figures lie certain assumptions and methods that have been adopted, and which deserve discussion.

In the latest *Note de l'OFCE* (no. 56 of 12 January 2015), I show that the assumptions made are unrealistic and that the method used does not support the presence of missing data in the biography of the respondents. All in all, the results are heavily biased in favour of the American dream. It is possible, however, to partially correct this bias, yielding the results in the table below.

Table. Cumulative percentage by age and averages, after correction for bias, of belonging at least once in one's life to the richest 20%, 10%, 5% or 1% of households

In %

H* age	Q20		Q10		Q5		Q1	
	Graduate	Non-Graduate	Graduate	Non-Graduate	Graduate	Non-Graduate	Graduate	Non-Graduate
25	7,6	3,4	4,1	1,4	2,4	0,7	0,4	0,1
30	19,1	8,6	10,8	3,8	6,1	1,8	1,0	0,2
35	27,6	12,7	17,2	6,1	10,2	3,0	2,4	0,6
40	33,1	15,5	22,6	8,2	14,5	4,3	4,0	0,9
45	37,2	17,6	26,9	9,9	18,4	5,6	5,4	1,3
50	39,6	18,9	30,8	11,5	21,7	6,6	6,6	1,6
55	41,0	19,7	33,2	12,5	24,3	7,5	7,9	1,9
60	41,3	19,8	34,4	13,0	25,6	7,9	8,7	2,1
Average	31		24		17		5	

Source : Author's calculations.

Basically, the Hirschl & Rank figures are cut in half! Thus,

31% of Americans will have a sufficient household income for at least one year (between age 25 and 60) to be among the richest 20%. And 5% of Americans will have a sufficient household income for one year to be in the richest 1%.

Given the magnitude of this correction, it is clear that the study by Hirschl and Rank distorts reality by suggesting that social destinies in the United States are very chaotic – as if the entire society were at the roulette table. Other articles by Hirschl and Rank further fill out the picture. It is not in fact the first time that these authors have come up with such figures using this method. In 2001, they examined the other end of the income distribution, evaluating the percentage of Americans who have experienced an episode of poverty during their lifetime (Hirschl and Rank, 2001). They again came up with striking figures. For example, 54% of Americans experienced an episode of poverty [1] before age 40. In 2005, they again applied this method to recipients of food stamps (food vouchers), and estimated that 50% of Americans will have made use of food stamps at least once in their lives (before age 65). This order of magnitude is, yet again, barely credible. A less costly and more direct method would certainly be revealing: it would suffice to ask Americans whether they have ever received food stamps. While some Americans may prefer to hide such an event, this bias of omission will never be as large as that of the preceding survival analyses. Let's be clear: their method is a machine for producing the outlandish.

[1] The poverty threshold adopted here is 1.5 times the value of the basket of goods needed to meet basic needs.