

Ritzen, Jo; Zimmermann, Klaus F.

Working Paper

A Vibrant European Labor Market with Full Employment

IZA Policy Paper, No. 73

Provided in Cooperation with:

IZA – Institute of Labor Economics

Suggested Citation: Ritzen, Jo; Zimmermann, Klaus F. (2013) : A Vibrant European Labor Market with Full Employment, IZA Policy Paper, No. 73, Institute for the Study of Labor (IZA), Bonn

This Version is available at:

<http://hdl.handle.net/10419/91771>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.

IZA Policy Paper No. 73

A Vibrant European Labor Market with Full Employment

Jo Ritzen
Klaus F. Zimmermann

December 2013

A Vibrant European Labor Market with Full Employment

Jo Ritzen

Maastricht University, VEF and IZA

Klaus F. Zimmermann

IZA and University of Bonn

Policy Paper No. 73
December 2013

IZA

P.O. Box 7240
53072 Bonn
Germany

Phone: +49-228-3894-0

Fax: +49-228-3894-180

E-mail: iza@iza.org

The IZA Policy Paper Series publishes work by IZA staff and network members with immediate relevance for policymakers. Any opinions and views on policy expressed are those of the author(s) and not necessarily those of IZA.

The papers often represent preliminary work and are circulated to encourage discussion. Citation of such a paper should account for its provisional character. A revised version may be available directly from the corresponding author.

ABSTRACT

A Vibrant European Labor Market with Full Employment*

We sketch a visionary strategy for Europe in which full employment is quickly regained by 2020, where income inequality is reduced and the economies are more sustainable. We name this scenario “vibrant.” It is contrasted with what would happen if present policies continue within the European Union (EU) and its member states. In the vibrant scenario, full employment is regained by more policy attention toward innovation and its underlying research and development (R&D), accompanied by more labor mobility within and between EU countries, in combination with a selective immigration policy based on labor market shortages. The road to full employment is embedded in a landscape with less income inequality and more “greening” of EU member states’ economies. We translate the vibrant scenario into policy proposals distinguishing between the role for the EU and that of the member states. We hope these proposals will be included in the election programs for the upcoming 2014 European Parliament elections and in developing the mandate for the new European Commission in December 2014.

JEL Codes: D31, D33, F55, I23, I24, I25, I28, J11, J18, J21, J31, J64, J83, O31, O38, O52

Keywords: employment, labor mobility, innovation, income inequality, competition, labor markets, greening, happiness

Corresponding author:

Jo Ritzen
IZA
P.O. Box 7240
53072 Bonn
Germany
E-mail: ritzen@iza.org

* We wish to thank conference participants of the 2013 IZA/VEF Workshop: "A European Labor Market with Full Employment, More Income Security and Less Income Inequality in 2020" in Bonn for many helpful comments. Teresa Schildmann provided valuable research assistance. We are also grateful to Victoria Finn for many comments and suggestions.

1. The Need for a Vibrant Scenario

The Euro crisis has brought despair in Europe. Europe as a Union was meant to bring bliss to the citizens of the European member states. The countries who had ventured to relinquish part of their own identity, namely their own currency, were ensured of a “golden future.” Indeed, the first few years (2001–2008) showed that growth in the Euro area mostly exceeded that of the rest of the European Union (EU), while unemployment decreased, reaching the lowest level in the industrialized world. The introduction of the Euro seemed to have brought about another European miracle, in the sequence of a seventy year long period of unprecedented economic growth (1820–2009), in which total accumulated European growth had been higher than in any other part of the world (Gill and Raiser, 2012).

Nowadays, however, Europe appears to be unable to respond to the financial crisis, brought about by a reckless financial sector in the United States. In many EU countries, real incomes are decreasing while unemployment as well as income inequality are rising. The EU countries which embraced the common currency are doing worse than those which decided to not adopt it, even though one could make the case that their plight may be even greater without the Euro. Full employment—an *important policy goal* for many European member states—is far out of sight.

The worst result due to the Euro crisis is a fresh resentment between Europeans, one which had previously dissipated. The crisis has turned from a financial and economic crisis to one of “bridging trust,” particularly between the North and South of Europe.

The crisis also increases the dangerous possibility that Europe or its member states may become less internationally relevant at the world table while negotiating important issues, such as fair world trade incorporating environmental impact in production prices. Europe is in danger of also becoming obsolete in maintaining values of human dignity and human rights. The slipping European relevance in helping to resolve conflicts worldwide has been a painful sight for many citizens, in addition to the flows of refugees to the European borders.

These happenings are widely recognized, and the EU has been reacting swiftly and energetically to the economic crisis. It has done so with umbrella funding for countries in danger of a default, proposals for a banking union as well as the completion of linking the monetary union with an economic one; the latter is proposed with measures to ensure the stability pact's implementation in order to keep government budget deficits and debt in check. The "semester" process has been accepted by the member states, implying that they have to have EU approval for their national budgets before submitting them to their national Parliament. The "semester" process also implies that the EU delivers country-specific recommendations (CSRs) to the member states on how to restructure their economies; for example, they could address research and innovation or labor market regulations.

Contrasting a "vibrant" economy, we characterize the present policy approach as "muddling through," which lacks the vision and mental energy to engage in a more promising future with quickly-attainable full employment. The "muddling through" scenario implies that we not only feel unable to regain full employment but that we also feel unable to increase innovation in our economies, unable to counter income disequalization in the EU member states, as well as unable to further green the economies in such a way that our children and grandchildren would also benefit from the resources and climate which Earth has offered us.

The Vibrant Europe Forum 2012 developed a vision of vibrancy which cherishes and supports entrepreneurship, curbs and avoids excessive inequality, places learning, training and education as central parts in our lives, as well as applies the word 'sustainability' not solely as environmental threats but also to how we do business and organize our finances. This has been translated into a scenario which holds the promise to lead to full employment before or in 2020.

We develop this "vibrant" scenario by first characterizing the starting point in Chapter 2: the European labor market of the period 2000–2010, from the perspectives of the rising level of education of the workforce. We do this in order to show how they led to something close to full employment in 2007/2008, but have subsequently unraveled, along the following lines of inquiry for the future scenarios ("muddling through" versus "vibrant"):

- Innovation and the drivers thereof, such as research and development
- The changes in the production structure which have led to what some see as a polarization of the labor market, between the better and not so well educated, while income inequality further increased due to the retreat from social security practiced by many governments
- Employment protection and minimum wage legislation and their impact on employment and the quality of work
- Sustainability
- Happiness in Europe as an evaluation criterion for the economic circumstances

Chapter 3 explores the period 2010–2020 as far as the labor market is concerned, on the basis of questions of growth, (un-)employment, income inequality and greening. With rising unemployment, the first four years of this decade have not been happy ones. The predictions tell that employment demand will gradually grow and be sufficient enough to absorb supply, so that unemployment by 2020 would not exceed 5–10% (Cedefop, 2010). However compared to the non-crisis scenario, some 90 million working years are lost (or some 90 million unemployment years are experienced). Income inequality will therefore continue to rise in the muddling through scenario.

Section by section in Chapter 3, we also consider the alternatives which a vibrant scenario would bring, such as generating higher growth through more innovation and less income inequality by focusing on redistribution policies, more greening and increased labor mobility rather than employment protection. In many respects this alternative follows the ideas of Project Europe 2030 (González, 2010), which stood on the shoulders of the Sapir (2003) report and the Lisbon strategy, agreed upon at the European Council Meeting (March 2000). Europe's growth strategy (European Commission, 2012) follows these lines yet fails to address the labor market and income distribution. We translate this scenario into policy proposals which could be either adopted in the election programs of European parties for the European Parliament elections of May/June 2014 or in the development of the mandate for the European Commission in December 2014.

Chapter 4 contains a summary and conclusions.

These proposals have been discussed in the July 11–12th 2013 IZA/VEF Workshop: "A European Labor Market with Full Employment, More Income Security and Less Income Inequality in 2020" and are an attempt to translate our economic knowledge into policy, well aware that value judgments enter into that process.

2. Europe's Unbalanced Economic Performance

Labor demand and supply

Full employment as a policy goal of most EU member states has been forgotten in many EU countries. Eurostat (2013) reports that the euro area's seasonally-adjusted unemployment rate was 12.2% in September 2013, while the EU-28 unemployment rate was 11.0% in the same month, whereas in contrast in the US it was 7.2%. Yet there are huge differences among the member states. The lowest unemployment rates are recorded in Austria (4.9%), Germany (5.2%) and Luxembourg (5.9%), while the highest are in Greece (27.6%) and Spain (26.6%). These variations reflect the differences in economic development, including the policy drivers thereof, as we shall further explore.

Europe had been a success story until an abrupt break in 2008. It was precisely in the early years of the 21st century that full employment was nearly achieved in many EU member states.

Europe is hailed by Gill and Raiser (2012, p.3) as a continent with a glorious performance:

“Between 1950 and 1973, Western European incomes converged quickly toward those in the United States. Then, until the early 1990s, the incomes of more than 100 million people in the poorer southern periphery- Greece, southern Italy, Portugal, and Spain- grew closer to those in advanced Europe. With the first association agreements with Hungary and Poland in 1994, another 100 million people in Central and Eastern Europe were absorbed into the European Union, and their incomes increased quickly. Another 100 million in the candidate countries in Southeastern Europe are already benefiting from the same aspirations and similar institutions that have helped almost half a billion people achieve the highest standards of living on the planet. If European integration continues, the 75 million people in the eastern partnership will profit in ways that are similar in scope and speed... It is no exaggeration to say that Europe invented a “convergence machine” taking in poor countries and helping them become high-income economies. Annual per capita consumption in the poorer parts of Europe grew by 4 percent while in the wealthier countries it increased at a still impressive 2%. The rest of the world - except for East Asia - has seen little or no convergence”.

These achievements were also “earned” by economic policy with “third way” reforms which brought economic growth and employment, but also greater within-country income inequality, which had previously been decreasing for a long period.

The turning point occurred when the financial crisis hit in 2008 since Europe, compared to the US, seemed to be less capable of overcoming it. Several European countries were plunged into a sovereign debt crisis, combined with a prolonged recession with double and triple dips (of GDP growth per capita) in several other EU countries, such as the UK and the Netherlands. Table 1 shows the (predicted) real growth rates of the European economies in the period 2010–2013 compared to those of the US and the world average. This documents the faltering growth which has had severe implications for European employment.

Table 1: Real Growth Rates

	2010	2011	2012	2013
EU	2.0	1.5	0.0	1.3
US	3.0	1.7	2.0	2.1
World	5.1	3.7	3.3	3.7

Source: EU Commission Staff, 2012.

During the period 2000–2010, Europe grew economically and was able to ensure sufficient job creation for a growing population and workforce, as shown in Table 2. Europeans also became more skilled. The growth rate of the 15 years and older population between 2000 and 2010 was some 6%. Yet the growth of the highly-skilled population was no less than 43%, combined with a 17% growth of the middle-skills population. In the labor force there are corresponding percentages, namely 6% for all, 40% for highly-skilled staff and 10% for medium-skilled workers.

Table 2: EU Population and Labor Force Aged 15+, 2000–2010 by Education Level (in millions and percentage distribution of labor force by level of education)

Year	Population 15+ (millions)		Labor Force (millions)		Labor Force (column percentages)	
	2000	2010	2000	2010	2000	2010
All	410	435	229	243	100%	100%
Low	178	146	71	55	31%	23%
Middle	168	197	110	121	48%	50%
High	64	92	48	67	21%	27%

Source: Cedefop, 2010, p. 84-87.

In terms of a national comparison, the European population is very similar in its distribution over age groups. The percentage of youngsters (below 20) ranges from 19% (Bulgaria, Germany, Greece, Italy and Slovenia) to 28% (Ireland), with many countries around 24% (Denmark, France, Luxembourg, the Netherlands and the UK). All EU countries will experience population aging in the coming years. In 2010 the share of the 65-and-older age group had already exceeded that of the under-20s in both Germany and Italy (Cedefop, 2010).

Table 2 also shows that the labor force participation rate between 2000 and 2010 remained practically constant at 56% as the net result of lengthening schooling years, the increased participation of women and the increase in early retirement (while we need an increase in participation of older workers). Labor force participation fell among all education groups: among lower-trained people (from 40% to 38%), middle-trained workers (from 65% to 61%), as well as among the highly trained (75% to 73%). Overall participation is still higher when all groups are weighed together. This is the result of the increase in the number people with a higher level of education who have a greater labor force participation.

The EU labor force growth over the period 2000–2010 of some 14 million people, shown in Table 2, was almost fully absorbed by a growth in employment. There was a net growth of some 12 million jobs in the EU in the period 2000–2010 (Cedefop, 2012, p. 8). Job growth was particularly strong in the period 2003–2008, following a stagnant period at the beginning of the century then followed by job losses after 2008.

The (semi)-public sector accounted for more than half of the growth in employment in the first decade of the 21st century. The private sector showed strong growth in the distribution and transport sectors, as well as in business and other services. Contrarily, the primary sector, utilities and manufacturing showed substantial job losses. The construction sector grew slightly in the number of jobs (some additional 1 million jobs).

It is important to note the differences in the employment by education level in the public and the private sector; we imagine that the public sector in many countries will not expand in the near future following the substantial expansion in the first decade of this century. The public sector is more “education-intensive” than the private sector, in the sense that the average level of education of those employed in the public sector is higher. This is illustrated in Table 3 for a number of subsectors of the public sector.

Table 3: EU Workforce Distribution by Education Level and Public Sector Category (percentages of total), 2010

Education Level	General Government	Education	Health
Low	13.8	7.2	15.4
Middle	47.5	25.8	46.6
High	38.7	67.0	38.0
Total	100	100	100

Source: Eurostat, 2010

The education category is by far the most education-intensive (the percentage of workers with a higher level of education ranges between 50% in Italy and a high of 87% in Greece [Eurostat, 2010]); contrarily, those in health and social work activities show a higher education level from 21% in Austria to 60% in Cyprus and Spain. The public administration subsector has the lowest percentage of highly-trained workers, ranging from 18% in Austria to almost 70% in the Baltic countries. These ranges are remarkable; they show that the “production process” of (semi-)public work, in terms of the involvement of different professionals, is not as fixed as is often thought in each country. In the public administration subsector, the differences in the labor force composition by level of education may also relate to how the sector lies between general public services and other general government sectors. While the EU-27 spends 6.5% of GDP on general public

services, these expenditures exceed 10% in Cyprus and Greece and 8% in Belgium, Italy, Hungary and Portugal (Eurostat, 2013).

In 2010 the percentage of total public sector GDP and corresponding employment rates ranged from 12% in Romania to 25% in Denmark (Eurostat, National Accounts). The richer Western European countries had a percentage above 20% while the poorer Central and Eastern European countries had between 14 and 20%. The Western European exception was Luxemburg on the lower end (15%) and regarding Southern and Eastern Europe, Cyprus and Portugal were on the higher end (both at 22%), along with Greece (20%). Overall OECD governments spent some 13% of GDP on public social services such as education and healthcare services (OECD, 2011, p. 38).

The crisis (as well as the ensuing government cuts) have resulted in today's startling unemployment figures (as of the end of 2013), with their uneven spread around the EU. Equally startling is the lack of migration from high to low unemployment countries in the EU, since government regulations have low migration thresholds. However, this type of migration is hardly happening (Cedefop, 2012, p.12).

It is also remarkable that in almost all of the EU member states, unemployment by education level follows more or less overall unemployment; as such, the unemployment level of highly-qualified people is consistently some 4 percentage points below that of middle-trained people, which in turn is some 4 to 5 percentage points below that of low-qualified workers.

2.1 Innovation

The last decades have been marked by substantial labor market changes due to existing or emerging firms with new products or production processes "destroying" the position of existing products and processes. Innovation is the source of fresh wealth and may increase net employment (Soete, 2013), albeit of a different structure in terms of the types of skills required; this differs both for the production process (highly-qualified, entrepreneurial and problem-solving skills) as for employment arising from the purchasing power of the newly created wealth (non-routine service jobs).

EU countries continue to do well on the global innovation index (jointly published by Cornell University, INSEAD and the World Intellectual Property Organization, 2013): seven of the top-ten are Northwestern European countries; the other three are Singapore, Hong Kong and the United States. However, the EU as a whole would presumably rank (far) below the US. Europe has shown a generally poor performance in most of the technology-intensive sectors such as the internet, biotechnology, computer software, healthcare equipment, and semiconductors. “Europe’s young leading innovators (called “yollies” for short) are as R&D-intensive as those in the United States. Europe just has a lot fewer yollies” (Gill and Raiser, 2012: p.16).

Within the index, innovation is closely related to research (size and performance) and the quality and quantity of human capital. Hoareau et al. (2012) show that both university research quality as well as the quality of graduates are strongly statistically related to labor productivity (a proxy for innovation) for the EU27 in 2010. Moreover, the quality of university research is strongly related to research expenditures and university organizational structure, where university autonomy plays a substantial role.

Ritzen (2010, p. 42, 43) presents a country ranking according to the number of universities per country which belong to the world’s best (according to the Jiao Tong and the Times Higher Education Supplement ranking, which mainly represents research quality as measured by citations and prizes, like the Nobel Prize) divided by the country’s population. This ranking not only shows a great diversity but seems to also bear a close resemblance to the ranking of countries in labor productivity.

Moving from public research to labor productivity, a process called “valorization,” many factors seem to play a role:

- Co-publications between industry and academia
- The inclination to apply for patents and the (inter)national organization of patents
- The “ease of doing business” (World Bank.2013)
- The entrepreneurial culture and the contribution of education to nurture it
- Credit availability

In the literature on the relation between economic growth and research, the focus is often on private sector research as the basis for innovation, while ignoring public research. Mazzucato (2013) strongly contradicts this with the examples of Google and Apple which could innovate thanks to public research or governments which financed private research. In the economic literature, private research is measured as the accrued business expenditures for R&D (R&D capital stock) without any measurement of its quality. Coe et al. (2009) find that domestic and foreign R&D stocks have a measurable impact on total factor productivity (TFP), even when the impact of human capital is (statistically) held constant. They also find strong evidence that human capital is co-integrated and that it is an additional significant determinant of TFP. If a country's "ease of doing business" (measured with the World Bank scale) and the quality of tertiary education system (measured along the Jiao Tong scale, which puts a high value on research quality at universities in the public domain) are high, then the country tends to benefit more from its own R&D efforts, from international R&D spillovers, as well as from its human capital formation. Moreover, Coe et al. (2009) find that "strong patent protection is associated with higher levels of total factor productivity, higher returns to domestic R&D, and larger international R&D spillovers." Finally, they find evidence that countries with legal systems based on French, and to a lesser extent Scandinavian, law benefit less from their own and foreign R&D capital than countries with legal origins based on English or German law.

Besides accounting for public research (except for the quality indicator), this study is missing a multiplicative term between domestic and foreign R&D. Often firms do indeed research as a means to invent, but more often it is to learn about inventions elsewhere in order to remain close to the invention frontier. It also misses the impact of the quality of human capital additions to the stock of human capital; this could be proxied by PISA results as in Barro and Lee (2001).

Aghion and Howitt (2006) make a convincing argument regarding the importance of institutional variables in converting research (whether public or private) to innovative activities. They point to competition and new entrants as factors that bring about growth through innovation. This supports the inclusion of a variable on the "ease of doing business" in the Coe et al. analysis (2009).

The constant innovation in Europe's production is also found in the constant decrease of the half-life of products and services. Jobs, defined as a given set of tasks, come and go. Job transition, involving the mobility of workers of all education levels, is necessary for innovation to be able to create new wealth and employment.

2.2 Wage inequality, income inequality and social cohesion

Wage income inequality is rising due to changes in the production structure

Wage inequality increased in Europe in the period 2000–2010 mostly as a result of the long-run changes in the production structure in which non-routine work became increasingly more important, whereas the relevance of routine work decreased. The changes in the production structure are illustrated by the increase in the wage premium of higher education graduates (for all OECD countries for the period 1997–2003) when the supply of graduates increased (Machin and McNally, 2007). If the production structure would have remained the same, the increased supply of graduates would have led to lower wages. Tinbergen (1975) captured this as the “race between education and technology.” Heckman et al. (1998) also find that rising wage inequality in the US over the period 1979–1987 can be well explained by a skill-biased technological change, while immigration of low-skilled workers contributes little to rising wage inequality.

Regarding policy consequences with respect to the creation of full employment, it is important to realize that labor force quality is generally measured by the level of education; such a measure of human capital in terms of education levels (according to UNESCO's so-called ISCED categories which are used worldwide) or years spent in school may play just a small part in explaining labor productivity. The contribution of education measured in years of schooling to economic growth was found to be nonexistent (Pritchett, 2001, p.367): “cross-national data show no association between increases in human capital attributable to the rising educational attainment of the labor force and the rate of growth of output per worker.” However, when Barro and Lee (2001) added a quality component to “years of education” by using results of the Project International Student Achievement (PISA) they could show an impressive relation between education and labor productivity. This is further supported by Hoareau et al. (2012) who find that there is a substantial correlation between the level of innovation (measured by labor productivity) and factors measuring the quality of education in 32 European countries (including the EU member

states). At the same time, they find that the size of higher education (the enrollment rate) is not statistically significantly related to innovation within the range of the prevalent European enrollment rates.

It is likely that the quality of education is related to expenditures per pupil. This is at least found for universities in Europe, where a higher ranking is closely related to a higher budget per student (Ritzen, 2010, p. 49). This includes the research budget of the university. Also Hoareau et al. (2012) find a strong relation between the efforts in funding universities (expressed as the ratio between per student expenditures and GDP per capita) and the quality of universities.

Note that a country's level of human capital can also change due to migration in the form of brain drain (emigration) or brain gain. Europe has an annual net inflow of more than half a million students from outside of Europe (the US even (slightly) more). This can increase national human capital levels if students decide to stay in the host country after graduation; indeed this applies to some 20% of these students (Bergerhoff et al., 2013).

This increasing wage premium and the resulting wage inequality are the result of changing technology, as Autor et al. (2003) and others argue. In particular, computers have created the technological change. This is a skill-biased technological change meaning that less-educated and unskilled workers are in less demand within the labor market because they are pushed out by robotization; thus the demand for routine work decreases since it can be mechanized, outsourced or off-shored. At the same time, the demand for non-routine work ("how to make the robots") increases. This is why, aligned with the views of Autor et al. (2003) and Acemoglu (2002), the wage premium for (higher) skills needed for non-routine work has increased during the same period in which the supply has also increased. For Europe it is important to recognize that these changes in private sector labor market demand were accompanied by the expansion of the (semi-)public sector, which is far more "higher education-intensive" than the private sector, as shown in Table 3. This contributed to a market scarcity for higher-educated workers in the private sector, adding to the upward pressure on wages of well-trained workers, while the public sector wages follow the wage-setting of the private sector. In other words, the disequalizing wage effect of the technologic change, which enhanced the relative demand for well-trained workers, was enhanced by the expansion of the (semi-)public sector in Europe. It was further enhanced by the emulation on bonuses and top earnings.

The increase in the ratio between the earnings of the highly skilled and low skilled is not only due to technological progress shifting production technologies in both private industries and private services to the benefit of skilled labor. OECD (2011) and Chusseau et al. (2008) document how increased imports from low-income countries (including outsourcing) pushed out “routine labor” jobs in OECD countries. At the same time, according to these studies, the effect of the rapid rise in the integration of trade and financial markets has hardly impacted the relative shift in labor demand, in favor of highly-skilled workers.

Wage inequality has also increased in Europe due to the decrease in minimum wages in relation to median wages between the 1980s and 2008 (OECD, 2011, p.30). This was a result of decreasing union power, even though the coverage of collective bargaining generally remained rather stable over time. Moreover: “A number of countries cut unemployment benefit replacement rates in an attempt to promote employment among low-skilled workers, some also reduced taxes on labor for low-income workers” (ibid.).

Income inequality

Gross earnings can be derived from wages as well as from non-wage earnings or from capital. Capital income with a share of around 7% of total income on average saw a greater increase in inequality than earnings in two-thirds of OECD countries between the mid-1980s and the late 2000s (OECD, 2011, p.35). Gross earnings inequality, as expressed in the Gini coefficient, ranged between .38 for Iceland to .53 for Italy. Atkinson and Marlier (2010, p. 281) find a gross earnings inequality (Gini coefficient) of .35 in 2006 for the EU as a whole. The Gini coefficient for a country is 1 at full inequality (one person earns the full income) and zero when everyone has the same income.

Taxation and transfers are means by which the gross income distribution is transformed into net income distribution. Overall income inequality in the EU has decreased due to differences in growth rates since poorer countries are growing faster than richer ones. Yet this decrease in between-country inequality is paralleled with an increase in within-country inequality.

The OECD (2011, p. 22) reports that income inequality in the 27 OECD countries has risen from 1975 to 2008: real household income at the bottom decile grew by 1.3% while growth

in the top decile was some 50% higher (namely 1.9%). The population's weighted average Gini coefficient in the EU27 was .31 in 2008 with a substantial between-member country difference (Atkinson and Marlier, 2010, p.111); it varied between a high of .38 in Latvia and a low of .23 in Slovenia. The increase in inequality (again measured by the Gini coefficient) in the period 1975 to 2008 has been some 5 percentage points.

Furthermore, the OECD (2011) notes that the redistributive impact of taxation and transfers has decreased in the past decades.

Social cohesion

Social cohesion is a notoriously vague concept (Wilkinson, 1997), despite all efforts at measurement through social capital (Putnam, 2000) or otherwise. At the same time, it is used in practically every major document from EU member states as a major precondition for the functioning of European democracies. In Europe a low level of income inequality is generally viewed as a precondition for social cohesion. This is in contrast to the US where a high level of income inequality also signals that there is a chance for "every paperboy" to become a millionaire, often with the (false) assumption that intergenerational mobility is larger if income inequality is greater; the OECD (2008, p. 213) shows that intergenerational mobility is greater when income inequality is smaller.

Social cohesion is understood to imply the willingness of the individual to participate in the common good because of the trust that this behavior is also advantageous to oneself. "Trust" is a key element in this notion of social cohesion. In particular "bridging" trust (bridging social capital) between individuals belonging to different social groups or tribes in society contributes to social cohesion, more so than "bonding social capital," or trust within a social group or tribe. Easterly et al. (2006) show how social cohesion contributes to economic growth. Social cohesion is proxied by income inequality, but also related to indicators of trust and governance like corruption. The impact of income inequality on social and economic dynamics has been more broadly discussed (see e.g. Aghion et al., 1999), with the tendency that inequality presumably harms growth, realizing at the same time that since approximately 1980 inequality has been rising in OECD countries. Aghion et al. (1999) explain the negative growth effects of inequality through the impact of wage and wealth distribution on individual investment in human and physical capital. Whereas Easterly et al. (2006) approach the impact of inequality through a decrease in trust,

resulting in higher transaction costs and lower quality of governance (measured for example by the degree of corruption). The connection with the Aghion et al. (1999) approach is easily made: decreased trust and the quality of governance reduce factor productivity (*ceteris paribus*) and thus reduce economic growth.

When launching the OECD (2011) report, the OECD Secretary General Angel Gurría, in the context of the impact of increasing income inequalities on social cohesion, said: “The social contract is starting to unravel in many countries.”

2.3 Employment protection, minimum wages and the quality of work

Employment protection is a hot topic with respect to the functioning of labor markets as well as with respect to what workers perceive as the “quality of work.” The employment protection we focus on is specified in legislation, collective agreements or individual employment contracts. This is what we call “EPL” (employment protection legislation), well knowing that in practice EPL depends on the interpretation of rules by courts or tribunals and the effectiveness of enforcement. Jurisprudence may be affected by underlying labor market conditions; for instance, there is evidence that judges’ decisions tend to be particularly favorable to workers when unemployment is high (Pierre and Scarpetta, 2004). Putting regulations aside which protect workers from discrimination, from unsafe or unhealthy work conditions or which give rise to balanced work-family relations (such as maternity or childcare provisions), we now turn our focus to provisions with respect to job security.

The impact of EPL (in all of its different forms) on employment, the duration of unemployment, labor mobility and on firm-specific human capital accumulation has been widely studied. Special attention is often given to differences in employment protection for temporary contracts and for permanent workers. Martin and Scarpetta (2012) provide a critical review of the recent empirical evidence on the links between regulations affecting the hiring and firing of workers, labor reallocation and productivity growth:

“The upshot is that employment protection impacts significantly on labor market flows and these flows, in turn, have significant impacts on productivity growth. At the same time, the evidence also shows that while greater labor market reallocation benefits many workers through higher real wages and better careers, some

displaced workers lose out via longer unemployment durations [while overall unemployment duration may decrease] and/or lower real wages in post-displacement jobs.” (p.20)

Leonardi and Pica (2013) come to a similar conclusion based on Italian evidence.

Martin and Scarpetta (2012) argue from the Schumpeter perspective which implies “that the functioning of markets (and the innovation dynamics that are at their roots) involves a continuous process of reallocation of labor and of other productive resources across firms and sectors” (p.1). This is very much in line with the observation that the lifetime of a job, defined as a certain set of tasks, has substantially decreased to maybe no more than five years. The new job may be within the old firm, if it continues to be in operation, or it might be in another firm. Surviving firms show that they “reinvent themselves” every 5 to 10 years, often drastically changing the package of produced goods; the most famous example is General Electric (GE), and less famous but just as successful, Royal DSM. It also means that the worker has to be mobile within the firm or between firms in order to be “employable.”

The OECD (2009, p. 121) finds that an average about 3% of jobs are destroyed in some industries each year, while an equal number of jobs are created in others. Since the corresponding average net employment growth in the business sector was about 1 percentage point, this suggests that reallocation of labor resources across industries is three times as large as net aggregate employment growth. But sizeable net employment changes at the industry level hide much greater churning at the firm level. Within industries, they find that each year on average almost 15% of all job matches were destroyed but were offset by new matches with other firms and/or with other workers within the same industry. The 15% figure agrees with the overall notion of the “existence” of jobs for no more than some 6 years on average, requiring substantial labor mobility.

By raising labor adjustment costs, employment protection may reduce mobility from declining to growing industries, or within firms from disappearing jobs to newly emerging jobs. It may also have negative implications for aggregate economic and labor market outcomes, even though it is likely that workers pay themselves for the costs of labor protection through lower wages (the Lazear hypothesis, confirmed by the empirical evidence of Leonardi and Pisa (2013) for Italy).

In addition to the studies mentioned above, the negative effects of employment protection on innovation and employment are further widely established:

- Bartelsman et al. (2011) find that high-risk innovative sectors are relatively smaller in countries with strict employment protection legislation (EPL). The high level of employment protection in Europe (in comparison to the US) can explain a considerable portion of the slowdown in EU productivity, relative to the US, since 1995, as well as the findings of Gill and Raiser (2012) on Europe having fewer “yollies” than the US.
- Similarly Murphy et al. (2012), using a panel data analysis of OECD countries for the period 1990–1999, find that employment protection reduces the innovation intensity.
- Boeri and Garibaldi (2009) find that more EPL significantly reduces the turnover of unemployment, job-to-job flows and mobility: “moving the EPL in Spain to that in Finland has an increase in the overall mobility index of 4 percentage points” (p. 432).
- Employment protection for permanent workers may encourage work commitment and investment in firm-specific human capital with a positive impact on productivity and real wage growth (Stern and Ritzen, 1991). Unfortunately Picchio and Van Ours (2010) could not find a sizable significant effect.

At the same time workers attach great value to “job security” and pay for it through lower wages. What they however cannot take into account in their trade-off is the external effect on their own employment on the long run and their own employability. This consideration has been a basis for most OECD countries to carry out regulatory reforms since 1980 onwards in order to “loosen employment protection legislation (EPL) for workers with temporary contracts” (OECD, 2011, p.30). The side effect is that firms have engaged in more hiring of temporary contract workers (Draeger and Marx, 2013). The loosening of the protection for temporary workers without also reducing the protection in permanent contracts has been tantamount in supporting a two-tiered labor market. It demonstrates a well-protected upper part contrasting the lower base of temporary contracts with little protection; the latter employs the most vulnerable, the least educated and younger workers.

Boeri and Garibaldi (2013) suggest to consider unemployment benefits in relation to job protection along iso-welfare curves, pointing out that flexicurity (high unemployment benefits with low protection) provides the same welfare as EPL in the form of high

unemployment protection with low unemployment benefits while flexicurity offers (potentially substantial) benefits to society due to increased mobility.

Employment protection reforms should be considered as part of a comprehensive package that also includes an adequate safety net for the unemployed and effective re-employment services.

The minimum wage

In most EU member states the wage level of workers with low levels of education is mostly determined by a general minimum wage per hour for all workers. Germany is one of the exceptions, although there are minimum wages for a large number of sectors organized by unions and employers, as well as some determined by public intervention.

Minimum wage legislation aims at ensuring that a person who works full time is able to sustain himself or herself, as well as a family, with the wage income.

The impact of minimum wage on both income distribution and on employment has been an issue of considerable debate. The key concern is the degree of the employment loss among low-wage workers and the resulting impact on poverty levels. How much unemployment changes, resulting from the introduction of a minimum wage or a raise thereof, depends on two factors:

- How many workers are working on that level?
- What is the labor demand elasticity?
- What are the spillover effects on output prices?

The basic model of labor demand under competitive labor market conditions predicts that the introduction or increase of the minimum wage will produce both winners and losers. The winners are those who retain their jobs at the higher wage. The losers include those covered by the law who lose their jobs or do not find one; they also include those not covered under the law who experience lower wages because of the rightward supply shift that accompanies the migration of these unemployed workers to the uncovered sector. Meer and West (2012) find evidence that an increase in the minimum wage does not lead firms to fire or lay off workers they already have, but does reduce the rate at which new workers are hired.

Minimum wages also raise output prices. This may lead to a decline in the demand for goods and services elsewhere and create unemployment in other sectors. Minimum wages only reduce poverty if workers living in poor households benefit from the minimum wage.

At the same time the minimum wages in the EU are often set at such low levels that only a small share of jobs is affected, and the effects on employment are negligible. The minimum wages range from about 1 euro per hour in Romania and Bulgaria to about 10 euro in France and Luxemburg. Yet high minimum wages may have a serious impact: a recent study by Cahuc, Carcillo, Rinne and Zimmermann (2013) shows that the numerous young people out of work in France, in comparison to Germany, is associated with the high French minimum wage. They show that the majority of current young German workers would be affected if the French minimum wage were to be applied to young Germans, as (excluding apprentices) 55 percent of young Germans now cost their employer less than the equivalent cost of the minimum wage in France (p. 14).

2.4 Greening

We use the term “greening” to indicate a process towards sustainability. The vibrant scenario aims at more greening within the European economies. Policies towards more greening, like the German *Atomausstieg*, affect employment. More greening in a country may lead to higher prices for products and services, making the country less competitive.

The progress—or lack of greening—can be measured by an “ecological footprint” (how much resources we use in relation to available resources). The ecological footprint represents the amount of biologically productive land and sea area it takes to supply the resources a human consumes and to assimilate associated waste (WWF, 2012, p. 135). For 2007 it was estimated that humanity as a whole used resources 1.5 times as quickly as Earth can renew.

Expressed in footprint hectares (ha) and bio-capacity per citizen, the range in Europe is considerable: Denmark has the largest footprint of 8.3 ha with a bio-capacity of 4.8 ha while the smallest is in Romania at 2.8 ha (bio-capacity of 2.3 ha) (WWF, 2012, p. 144). The EU’s average footprint is 4.6 hectares with a bio-capacity of 2.2 hectares. These

footprint data include the carbon footprint, in such a way that the required natural sequestration is estimated to maintain a constant concentration of carbon dioxide (CO₂) in the atmosphere. For example, in 2008, 1 global hectare could absorb the CO₂ released by burning approximately 1,450 liters of gasoline (WWF, 2012, p. 137).

2.5 Happiness and the labor market

In the past years the impact of the socio-economic environment in people's individual well-being has been advanced as a potentially important evaluation criterion for socio-economic policy. The well-being of people is not only determined by personal factors, but also by the work they do, the income they earn with it, material circumstances, the sorrow of job loss and the stress to find a new one, as well as through the income inequality in society. "Personal" factors include mental and physical health, family experience, education, gender and age. Many of these factors have a two-way interaction with happiness: physical health may improve happiness, while happiness improves physical health.

In economics the concept of happiness was formulated by Easterlin (1974). A person's enduring level of happiness is an experience brought about by personal factors and important external factors such as income, work, community and governance (corruption, freedom, social support), as well as values and religion. Across countries, per capita income impacts average happiness; however over time, once a certain income level has been achieved, it no longer does (the Easterlin paradox). As a result, the variation of happiness across the world's population is largely within countries, even though the levels of income might differ substantially between countries. 22% of the worldwide variation in one measure of happiness (the Gallup World Poll ladder) and 7% for another measure is between countries; this is much lower than the corresponding 42% variation in logarithm of household incomes between countries (Helliwell et al., 2013, p. 65). The primary reason for this difference is that income is just one determinant of happiness; most of the other factors are much more evenly spread across countries.

When people become unemployed, they experience sharp falls in well-being, which remain at this lower level until they are re-employed (Helliwell et al., 2013, p. 66). Lalive

and Stutzer (2011, p. 21-22) agree, yet they find that the impact is somewhat lessened by the level of unemployment benefits.

High unemployment has spillover effects not only on the families of the unemployed, but also on those working since they feel less secure in their jobs. When we sum up the entire loss in well-being of a rise in the unemployment rate, the total is twice as large as the loss to the unemployed themselves, according to Helliwell et al. (2013, p. 67).

In other words, one of the most important aspects of the labor market in terms of well-being is whether individuals are able to find a job, given that they want one. This is a clear call for a full employment policy as a “happiness strategy.”

Employment and happiness

For those who are employed, the quality of life at work is also important. The trade-off between the level of (macro) employment and the quality of work for those who are employed then needs to be envisaged. Job quality is measured in the International Social Survey Program by eight different job characteristics on a 5-range scale ranging from “Not at all important” to “Very Important.” These characteristics are: high income, flexible working hours, good opportunities for advancement, job security, interesting job, being allowed to work independently, being allowed to help other people, and being useful to society. Only around 20% of responding workers in OECD countries say that having a high income is very important; the same figure applies to flexible hours and promotion opportunities. But around 60% say that job security is very important; there are similar figures for interesting work and autonomy: 50% and 30%, respectively (Clark, 2010). Measures of autonomy, workplace trust, independence and so on could easily go hand in hand with increased macro employment. Yet the impact of the level of job security might reduce macro employment (as the evidence of section 2.3 seems to show).

Salvatori (2010) provides evidence with European Community Household Panel data that both permanent and temporary employees gain in terms of well-being (measured by job satisfaction) from reforms that ease restrictions on temporary employment (while leaving firing costs for permanent workers unchanged). Lalive and Stuetzer (2011) find for the OECD that permanent contract workers do not increase their life happiness with an increase in protection, but temporary workers do, while Boeri and Garibaldi (2009) conclude that a permanent contract increases the probability of being satisfied by 7

percentage points from the baseline. However, it is interesting to note that over time the importance of employment protection for happiness of permanent contract workers decreased (in the EU): between 1995 and 2000 they experienced a decline in job satisfaction of 3 percentage points and of 4 percentage points between 2000 and 2005 (Boeri and Garibaldi, 2009).

Workers' well-being matters not only to themselves but also to firms: it is a good predictor of productivity. It is well-known that workers who are more satisfied with their jobs are less likely to quit; they are also less likely to reduce firm productivity via absenteeism or presenteeism – turning up for work but contributing little (Robertson and Cooper, 2011; Cooper and Lundberg, 2011).

The bottom line remains one given by Gruen et al. (2010), using the German Socio-Economic Panel:

“...we cannot identify a single job feature or a combination of such features that constitute such low quality jobs that remaining unemployed would be the better choice for the individual. On the contrary, the bulk of our evidence shows that even low quality jobs are associated with higher life satisfaction, and this effect is statistically significant for most specifications of “bad” jobs.”

Similarly a parallel study examines the value of the large German workfare program and concludes that people's life satisfaction rises substantially after moving from being totally out of work to being part of the program (Wulfgramm, 2011).

It is likely that national happiness might decrease with a reduction in worker protection for those with permanent contracts. Yet it is equally likely that total happiness increases if the same decrease in worker protection results in increased employment.

Income inequality and happiness

Income and also wealth inequality can be a signal of income mobility and opportunity as much as one of injustice and experienced (un)happiness. Alesina et al. (2004) find that individuals in Europe for the period 1975–1992 had a lower tendency to report being happy when inequality was high, even if their own income was high (by statistically controlling for individual income). Ritzen et al. (2013) suggest from an analysis of Euroscepticism and financial expectations that this effect may have recently disappeared in Western Europe, yet remains in the former communist countries. Graham and Felton

(2005) explore the effects of income and wealth inequality on well-being in Latin America, the region with the highest inequality in the world. They find that relative income differences have large and consistent effects on well-being in the region. In Latin America, inequality seems to be a signal of persistent advantages for the very wealthy and persistent disadvantages for the poor, rather than a signal of future opportunities. These situations point at applying strategies to reduce income inequality as a means to increase happiness.

Based on OECD figures, Europe appears to have been an overall happy continent in the decade 2000–2010. When asked to rate their general life satisfaction on a scale from 0 to 10, people across the OECD gave it a 6.7 grade. Some countries—Hungary, Portugal, Turkey and Greece—have a relatively low level of overall life satisfaction, with average scores of less than 5.5. At the other end of the scale, scores were higher than 7.5 in Denmark, Norway, the Netherlands and Switzerland. There is little difference in life satisfaction levels between men (6.6) and women (6.7) across OECD countries. Social status does, however, strongly influence subjective well-being. The bottom 20% of the population in OECD countries has a life satisfaction level of 6.1. This score goes up to 7.3 for the top 20%.

Unhappiness is concentrated in poorer countries such as in Bulgaria. Not only do absolute happiness levels differ but their variations also differ between countries. Among OECD countries the correlation between country means and standard deviations is significantly negative (more variance when the mean is lower). Among those countries with high average scores, some have quite high degrees of equality in the distribution of happiness (Denmark and the Netherlands), while in some fairly low-ranking countries (Bulgaria and Romania) there is much more dispersion.

At casual inspection, the OECD data on happiness show that countries with higher unemployment levels tend to be less happy, when measured by the level of happiness or the degree of dispersion of happiness (more dispersion with more unemployment). This confirms the micro findings on individual happiness and the individual (un)employment experience. More econometric research is needed to confirm the result of this casual inspection.

3. Europe 2010-2020: Muddling through or a Vibrant Alternative

In this chapter we address the policies of the EU member states leveraged by the EU in order to achieve a vibrant European economy with close to full employment (through more innovation), less income inequality and more greening in the period 2014-2020. We compare this with the “status quo” scenario, named “muddling through.” Muddling through does not include major policy changes. We focus here on the labor market without going into the financial or fiscal side. In both scenarios it is assumed that the financial framework for the Eurozone and the EU as a whole is fixed, meaning that credit flows will resume to pre-crisis levels and that fiscal consolidation has taken place.

The labor market for the “muddling through” scenario is mostly derived from a Cedefop study (2010). These are the only projections available. We consider these projections to be too optimistic with respect to (the resumption of) employment growth and the reduction of unemployment, as they do not appear to depart from fiscal consolidation. Fiscal consolidation in part implies a break away from public sector expansion (health, education and general government services), having substantial implications for employment, in particular for those with higher education.

In contrast to “muddling through,” the vibrant scenario involves policy changes. It aims to reach the full employment goal within the shortest possible timeframe; thereafter it maintains it through policy measures which have been considered up until now to be outside the realm of possibilities.

Full employment is achieved and maintained through more innovation, greater labor mobility, flexicurity, work-related social security and less labor regulation embedded in policies which generate less income inequality (through restrictions on top wage incomes and focusing on social security). This approach can be argued as contributing to increased happiness, in terms of both level and distribution among the European population.

Labor market policy in the EU is the responsibility of each member state. At the same time, the EU has the responsibility to deliver “country-specific recommendations” (CSRs) regarding innovation and labor market policy as part of the semester approach. We shall discuss how member states could more quickly implement these CSRs. The major

question is not whether such an alternative is possible. It is about governance: are EU politicians as well as politicians of the member states, who would agree with the “vibrant” goal of full employment, able to carry it out with the support of their constituencies?

The labor market 2010-2020

Our point of departure for “muddling through” is presented in Table 5 with the OECD projections for GDP growth as well as for labor productivity and employment. It assumes that the 2012 and 2013 Euro crises (centered on Greece and Cyprus) will not bring new stormy occasions for the EU (which is unlikely). The OECD projections are derived from econometric models which include technological advancements and demographics, as well as the impact of fiscal imbalances and structural reforms on economic growth.

Table 5: Euro Area: Projected GDP, Labor Productivity and Employment Growth, 2012-2050

Real GDP Growth (average per year)			Labor Productivity Growth (average per year)			Employment Growth (average per year)		
2012	2018	2031	2012	2018	2031	2012	2018	2031
2017	2030	2050	2017	2030	2050	2017	2030	2050
1.4	1.7	1.4	1.0	1.7	1.5	0.4	0.0	-0.2

Source: OECD, 2012, p. 200

In the period 2008–2013, the EU has experienced a shaky economic development: EU growth rates plummeted and the EU-27 entered a recession (-4.3% growth in 2009) with a second dip in 2012 (-.3%). Some highlights of European growth rate patterns are:

- countries which suffered most were generally those with the highest compound growth rates in the period 2000–2008;
- the Baltic States had the highest (double digit) dip in 2009, but were also recovering with the highest rates;
- Hungary stands out as the country with the highest compound decline in growth in the 2008–2012 period;
- EU countries outside the Euro area fared better than Euro-area countries.

Economies in other parts of the world are growing faster than in the EU, notably in China, India, Brazil, and Russia (the BRIC countries), the MIST countries (Malaysia, Indonesia,

South Korea and Turkey), and also in the US. Moreover China's GDP is projected to surpass that of the United States in 2017 (OECD, 2012, p. 192).

The labor force will increase less than it did in the previous decade. The shift towards a better-trained labor force continues unabatedly. Yet economic growth remains sluggish while the level of innovation in Europe may be overtaken by countries outside of Europe: Singapore ranks second in the 2013 World Economic Forum innovation index and Hong Kong seventh (up two places from 2012); meanwhile relative indexes worsened for the Netherlands, ranking eighth in 2013 (from fifth in 2012), and the UK (from eighth to tenth, also in 2012 to 2013) (Cornell University, Insead and WIPO, 2013).

With rising unemployment, we see that the first three years of this decade (2010–2013) have not been happy ones. The Cedefop (2010) predictions—which were computed before the major downturn in employment—show that gradually employment demand should again grow enough to absorb supply, so that unemployment by 2020 would not exceed 5–10%. And even then, compared to the non-crisis scenario, some 90 million job years would be lost.

The overall labor supply trends measured by the number of economically active people (labor force aged 15 years and older) shows a substantial increase of 15 million (Table 6) of those qualified at a high level (holding a university degree or equivalent). The supply of those with medium-level qualifications, mainly vocational, is also expected to increase but to a lesser extent (by 3 million). This group will still remain as 50% of the European labor force. The labor force with low-level qualifications is projected to fall by around 15 million people. This reflects strong cohort effects, as young people entering the labor market are higher qualified and lower-qualified older people are leaving the active workforce (Cedefop, 2010, p.9–10).

Table 6: Population and Labor Force Aged 15+ (in millions), 2010-2020 by Education Level

	Population Aged 15+		Labor Force (in millions)		Labor Force (in percentage)	
	2010	2020	2010	2020	2010	2020
All	435	450	243	246	100%	100%
Low	146	113	55	40	23%	16%
Middle	197	217	121	124	50%	50%
High	92	120	67	82	27%	34%

Source: Cedefop, 2010, p. 84–87.

The EU-27's (semi-)public sector job growth in the period 2010–2020 may be limited to 0.9 million in a total increase in net employment of eight million new jobs (Cedefop, 2012, p 8). Table 7 shows how Cedefop foresees the expansion in three major parts of the public sector.

Table 7: EU-27 Public Sector Expansion 2010–2020 by Education Level and Subsector (in millions)

	All Education	Low Education	Medium Education	High Education
Public Administration	-.4	-.7	-1.0	1.3
Education	.3	-.5	.4	.4
Health and Social Work	1.2	-.9	.1	2.0
Total	1.1	-2.1	-.5	3.7

Source: cedefop.europe.eu/EN/Files/5526

Table 8 shows the total public sector job openings (expansion or contraction and replacement demand). The public sector continues to absorb a substantial part of young workers who enter the labor market for the first time, according to the Cedefop calculations.

Table 8: Total Public Sector Job Openings 2010–2020 by Education Level and Subsector (in millions)

	All Education	Low Education	Medium Education	High Education
Public Administration	4.2	0	0.9	3.3
Education	6.2	0	1.7	4.5
Health and Social Work	8.7	0.2	3.0	5.5
Total	19.1	0.2	5.6	14.3

Source: cedefop.europe.eu/EN/Files/5526

These public sector employment figures were computed before the major austerity measures took place. The austerity measures are likely to reduce employment growth in the EU public sector.

It is important to recognize that the production structure of the (semi-)public sector differs from that of the private sector: in the (semi-)public sector there is little or no substitutability between production factors, which follows from changes in relative wage rates (as was first broadly observed by Baumol, 1967). There is also no evidence of “technological” labor saving progress in the public sector, despite the technical advances in the medical sector and the great promises of educational technology. It seems that these have increased quality, but have not affected labor productivity differentially between workers with varying levels of education. The production technology in education, health and government is more or less fixed. The ratio of doctors’ to nurses’ wages does not influence the demand for doctors or nurses. The change in the ratio of the wages of teachers to educational support staff does not lead to changes in the demand for teachers.

Workers in the (semi-)public sector are “wage followers,” meaning that the gross wage rate per category of workers is determined by wage setting in the private sector, even though differences emerge across countries. Greece, Ireland, Italy, Portugal and Spain (notably the countries with the biggest sovereign debt problems in 2012/2013) exhibit higher public sector premiums than other countries (Giordano et al., 2011). This is in line with institutional determinants of public-private sector linkages in a pool of 18 OECD countries,

as explored by Lamo et al. (2013). It is also clear that throughout Europe, trade union membership has shifted towards the public sector (Visser, 2006).

Cedefop (2010, p.9) suggests:

“It is likely that employment growth in Europe will only gradually recover in the next decade. There are probably around 10 million fewer jobs now and over the next few years than would have been expected without the crisis. In the central baseline scenario, which assumes a modest recovery, employment in 2020 is likely to be higher than in 2010 but will not reach the peak of 2008. In total, around eight million jobs are expected to be created in the period 2010–2020.”

The OECD has estimated a potential employment growth of 0.4% for the Euro area in the period 2012–2017 and 0% in the period 2018–2030 (Table 5). These figures point in the same direction as the Cedefop estimates.

The net total of private sector jobs to be created in the period 2010–2020 is estimated at about 9 million (Wilson and Homenidou, 2012; Cedefop, 2012, p. 22). This will be marked by a gradual decrease in agriculture and textile and a (less certain) increase in sectors such as pharmaceuticals, automotive construction and commercial services.

The Cedefop projections show considerable variation in job growth within the EU: in some of the richer EU countries the share of employment in services is forecasted to grow above 50% in 2020; in other countries the expected contraction in banking and finance within the private sector reduces the share of employment in commercial services.

By 2020, the forecasts for labor demand converge with “non-crisis” scenario predictions, so that the number of jobs is the same as it would have been without the crisis. However the number of job years lost during that period (the surface between the 2008–2020 non-crisis line and the 2008–2020 crisis plus recovery line) is substantial, namely more than 90 million job years.

Table 9: Expansion of Jobs from 2010 to 2020 in the EU-27 by Education Level (in millions)

Education Level	2010 to 2020 Job Expansion (in millions)
Low	- 14
Middle	2
High	20

Source: Cedefop, 2012, p. 34.

However, the Cedefop projections may be (far) too optimistic. The first two years in the projections, 2012 and 2013, show mounting unemployment rather than a decrease. The International Labour Organization is one of the many expert organizations which is highly concerned with the present development in the European labor market: “Mounting evidence points to the fact that a prolonged labor market recession may be in the making. Long-term unemployment is on the rise and many workers are becoming excluded from the labor market” (ILO, 2012, p. 12). This exclusion is due to high unemployment rates, even higher among the young, which can have potentially long-lasting effects on their careers.

In September 2013, the youth unemployment rate in the Eurozone was over 25 percent and still increasing. It exceeded 30 percent in Italy, Portugal and Slovakia, while it was over 57 percent in Greece and Spain. Youth unemployment rates were also high and increasing in reasonably successful countries such as Belgium and Malta.

Unemployment continues to be unevenly spread across the EU. Also it remains skewed across education levels. Cedefop (2012, p.49) projects that the differences in unemployment rates between highly- and middle-trained and between middle- and lower-trained workers remain at 4% and 4 to 5% respectively, despite the substantial changes in the supply (decreased supply of people with low education levels and an increase of those who are well-trained). The trend continues to show that people with low qualifications will find it even more difficult to obtain a job.

In most projections unemployment is calculated as the result of an exogenous demand as well as a given supply. However, supply is itself also determined by conditions like family

composition, health and net wages. Peichl and Siegloch (2013) use micro-level data for Germany (for household groups by level of education, age and family composition) to estimate the number of working hours when net incomes per hour per group are given, assuming that households maximize utility in consumption and leisure. They show that for Germany—where the labor force will soon decline due to demographics—labor market shortages may be enhanced by reduced supply. Meanwhile, Schneider et al. (2013) show that the opposite may occur at the European level, meaning that the demographic decrease in the labor force may be offset by increased supply as a behavioral response. In summary: a continuation of present policies might gradually (in 2014 and thereafter) bring a reduction in EU unemployment. However the road to full employment will be long and is unlikely to be concluded by 2020.

A vibrant scenario

A vibrant European labor market with full employment would be first and foremost the result of individual EU member countries' policies. Yet the EU is supposed to be a force that can leverage the accomplishments of individual countries. Thus at the end of our analysis, we list recommendations which are the result of reflecting on this leveraging role. Macroeconomic policies have been belatedly brought to the European level as necessary complements to introducing the euro. Yet for employment and social policy, the responsibilities largely remain with the national governments of the EU countries, albeit that the European Commission (2013) wants to strengthen the “social dimension” of the Economic and Monetary Union (EMU) by using employment and social indicators as part of the “European Semester” process for economic policy coordination.

At present, public debts and budget deficits attract the most attention in the Semester process, in which EU member states' governments have to submit their budget proposals first to the EU, before presenting them to their national parliaments. This is binding criteria applied to the levels of government deficits and sovereign debt as in the stability pact for the euro.

The European Parliament (2012) has called for strengthening the EMU with a “social pact,” to be included in the Van Rompuy (2012) report, which restricted itself to four pillars of the EU: financial integration, budgetary framework integration, economic policy integration and

democratic legitimacy. This report was a result of the European Council's request for a "roadmap" for strengthening the EU.

In our view, a vibrant scenario would depart from the adoption of full employment in the goal setting of the EU, as a framework for reference of the Semester approach, but also as individual member states' commitment.

"Fiscal consolidation" (as the OECD (2012) calls the EU member countries' commitment to the Maastricht criteria in terms of government budget deficits and sovereign debt levels) is essential in order to avoid a substantial interest claim on government income, pushing out expenditures for education, health, social transfers and the like. Yet, if it leads to economic policies in which countries with substantial trade surpluses are inducing wage reductions and slowing down public investment (in infrastructure or in public R&D), then the single-minded application of "fiscal consolidation" may not serve its purpose, as it smothers economic growth. Likewise "austerity" should not block needed reforms in the labor market structure, nor in other markets. Vibrancy would start with adopting the policy goal of full employment, as this may serve as a reference point for "smart austerity." Hence we suggest:

Full employment should become an EU goal to be realized by 2020. The new European Parliament should demand an "employment proposal" from the Commission which would have the potential to regain lasting full employment relatively soon, as well as the implications for the Maastricht criteria and the Semester process. The new European Commission (which starts in December 2020) should have a mandate to engender full employment by 2020.

The goal of full employment translates into five policies: innovation (3.1), income (3.2), mobility (3.3), immigration (3.4) and greening (3.5). The case for a fiscal union (often advocated as a way to ward off future crises by installing automatic stabilizers at the European level) is difficult to make according to explorations with empirical models (Peichl *et al.*, 2013).

Aside from an EU-wide agreement on full employment as a policy goal, a social scoreboard might be helpful. This would be done with agreed measurements and goals and ensure that not only the economic, but also social, goals in EU countries are

leveraged by the EU. Poverty levels and social goals would be recorded next to macroeconomic and employment indicators.

Automatic stabilizers at the EU level could also be a “leveraging” European approach in helping individual EU countries to reach their economic and social goals. Automatic stabilizers have been amply researched (Peichl et al., 2013), for example in the form a fiscal union or a European unemployment scheme, in which a minimum level of unemployment benefits would come from a European fund for a maximum duration of one year. Having a fixed duration addresses concerns about funding long-term unemployment. Benefits above the minimum level and beyond the one year duration would still be paid by the member states themselves. However, this is a difficult proposition since it involves distributional consequences as well as moral hazards.

Social goals need to be narrowed down to a small set of basic needs with a clear view on full employment as the best social policy. Too much spending on social protection will undermine competitiveness. It is critical to maintain a link between wages and productivity, allowing room for collective bargaining. Keeping this link also means that high-productivity countries should allow wages to increase.

3.1 Innovation

Economic growth and employment projections hinge on assumptions regarding innovation and competitiveness. There are few signs that the EU-27 takes the vibrancy challenge seriously (in contrast to the language used in the Lisbon declaration of 2000) as expressed for example by the outlays for research and development or the relative absence of “yollies” in Europe compared to the US. The increased outlays for public R&D and for the improvement of educational quality in BRIC, many MIST and in the oil-rich Arab countries, has little following in Europe, except for some “excellence initiatives” such as the one in Germany (see country reports in Hoareau et al., 2012). It is likely that, on average, European countries will find themselves falling on the Global Innovation Index; instead of six EU countries making the top-ten list in 2013, there may be no more than three or four in 2020.

The Horizon 2020 program (in the EU Framework Programme for Research and Innovation) foresees an EU outlay of some 70 billion euro for the period 2013–2017. The

EU Commission (2012) feels that the EU should specialize, as well as compete globally, in green economy, healthcare and ICT. This H2020 program is a major increase of the European public research effort, even though it is less than 10% of the total EU budget. In parallel, the agricultural subsidies budget remains at around 50%, making the EU more about milk and wine, or butter and beef, rather than knowledge. At the same time, many member states have cut their R&D outlays (Hoareau and Ritzen, 2012). The Lisbon goals of 2000, aiming to make the EU the most competitive economy in the world by spending 2% of GDP on private and public research, is still remote.

A vibrant scenario

More public R&D, less entrepreneurial regulation, better quality education and more credit for startups can raise labor productivity in the longer run. However, R&D outcomes are not only about money; the organization of R&D plays a major role. It is clear that there are huge differences between EU states regarding the effectiveness of public R&D expenditures, whether measured in citations, patents, knowledge-based startups, or in “entrepreneurship.” It is important to analyze the research governance factors which contribute to the best research outcomes. Obviously, competition is one of them. The Sapir report (2003), however, warns that at the same time the organization of competition should avoid bureaucratization and should be focused on long-run research results.

The difference in research effectiveness (as well as research effort, expressed in the percentage of GDP spent on public R&D) is striking between richer Western European countries and poorer Central and Eastern European countries (see Hoareau et al., 2012). A new convergence in per capita incomes could arise from stronger human capital and R&D positions in the poorer countries. In this respect, it is counterintuitive to notice that structural and cohesion funds—meant to bring about convergence—are hardly allocated toward universities or R&D, with the exception of Poland (see country reports in Hoareau et al., 2012).

A “visualization” of this vibrancy approach is best derived from Moretti (2012). He divides the US in three “Americas:” the brain hubs with a large number of growing firms, the “Detroits” with continuous job losses and lastly, the undecided regions or cities. For every new job stemming from innovation, the brain hubs create five additional well-paying, non-

innovative jobs. More public R&D would create such hubs all over Europe and, as it appears now, the majority would not be in Western Europe.

Our approach to focus on more public R&D as an alternative to “muddling through” fits the early views of Nelson and Phelps (1966) who suggested an “adaptation” of the production structure by means of new vintages of physical capital. New vintages could exhibit higher productivity of factors because they had incorporated inventions brought about by R&D.

The assumption that public R&D (if well embedded in the “right” organizational structure) can bring about higher levels of economic growth and more employment is in line with the observation (see section 2.2) that the so-called labor-saving technical progress is not a constant but rather can be influenced by R&D. Additionally, instead of low-skilled labor-saving technical progress, public R&D investments may result in something more like a high-skilled labor-augmenting technical progress. In the past, technological progress has been mostly described as “robo-sourcing”, low-skilled labor-saving. However, it is likely that it has been equally (or more) skilled labor-enhancing. An empirical estimate of a production function which includes both the lower-skilled labor-saving as well as the high-skilled labor-enhancing technological progress would have different implications for the projection of labor demand by skill level, compared to an estimate which includes only low-skilled labor-saving technical progress.

Innovation creates rents and increases competitiveness. In the process it destroys jobs, while recreating others or creating new ones. The rents allow for a net positive employment effect. A lot of innovation takes places informally in smaller firms in the private sector. Innovation by employees through work organization is also an important cornerstone to increase productivity.

Innovation cannot be enacted by law, nor be taught at school as to how it can be generated, even though entrepreneurship education could have a substantial impact on innovation. Policies should rather be designed to incentivize and enhance an environment for more private innovation. This is concerned with lessening bureaucracy, easing patenting, reducing costs and standardizing treatment of intellectual property rights. European education systems are typically very formal, which is arguably not the best pre-condition for future innovation, since this cannot be taught at school or university. It rather needs an education system that not only allows for but actually encourages creativity from

the very beginning of (preschool) education, while at the same time explicitly pays attention to entrepreneurship training.

Our following policy recommendations are to stimulate innovation (as a means to generate employment) for the EU member states, based on section 2.1 and above:

- Provide more public R&D closely related to industry.
- Increase the ease of doing business (World Bank Doing Business report: ease of doing business index).
- Give more attention for entrepreneurship education at all education levels.
- Implement dual education at all education levels (including higher education) after the age of 16.
- Provide more (pre)venture capital.

On the EU level, several steps could be taken:

- Ease patenting through a simple European patent to supersede national patterns.
- Allocate 50% of cohesion and structural funds to higher education and public research.

The most radical proposal for the EU to leverage individual member states is:

- Allow additional R&D expenditures in EU countries (above the status quo) to remain outside the Maastricht criteria.

3.2 Inequality

The implications of the labor market demand and supply forecasts all point in the direction of an increasing wage-income inequality under the “muddling through” scenario.

Cedefop (see Table 6 and 9) expects the highly-trained labor force to grow by 15 million people while demand will grow by 20 million people. It is then likely that the wage premium increase of the highly-trained population will be at least as strong as in the period 2000–2010, even though the public sector is no longer “crowding out” the private sector of highly-trained graduates. However, as we said before, the Cedefop prediction may be too optimistic because the (semi-)public sector, with its high intensity in high-skilled labor, may grow less than expected at the time these predictions were formulated.

At the other end of the skill distribution, the supply of low-skilled labor will decrease just as fast as demand (14 and 15 million people, respectively). For middle-skilled workers, additional supply is also more or less in line with future demand.

In order to better understand the impact of the supply-demand interaction by education level on wage formation (and on wage ratios), it is important to have an idea of how economic growth and employment creation will resume. It is likely that the first step in this process will be some sort of “jobless” growth, with new investments requiring non-routine workers while leading to a loss of low-skilled jobs. At the same time, growing demand for low-skilled non-routine service jobs has been an expression of the increased income inequality: the better paid can afford the services of others for personal care and attention provided the costs remain in check. An increase in income inequality then means more demand for lower-skilled workers in non-routine work, which dampens the increase in wage inequality. Nonetheless it is fair to assume that the second decade of the 20th century will be one with increased wage inequality under a “muddling through” scenario. The increased wage inequality will translate in increases in income inequality. Income inequality will be further enhanced in Europe by the following processes:

- Income inequality between European countries will decrease less than in the past as the “convergence machine” seems to have halted; the differences in growth rates between richer and poorer countries seem to be less (OECD, 2012), implying that the gap between the richer and the poorer countries remains.
- Income inequality also increases because of the continued increase in capital income which mainly serves higher incomes.
- The room for more progressive taxation is not considered to be a serious alternative: governments seem to be moving in the direction of a “flat tax.”
- The room for inequality reduction through social expenditures is under pressure as a result of the sovereign debt crisis. Governments want to cut back expenditures across the board.

As a result it is likely that we will see a worsening of the Gini coefficient, even more than that of the first decade of the 21st century when it increased by about 5% in Europe.

A vibrant scenario

The “vibrant” scenario implies more innovation compared to the “muddling through” scenario. But this also means that the demand for well-trained workers is higher in this scenario which if anything leads to more wage inequality as a result of the greater bargaining power of well-trained workers.

However, the vibrant scenario also looks for policies to combine smart growth with a return to a more redistributive tax and transfer policy (Atkinson et al., 2013). Increases in top

income tax rates, or the introduction of a luxury rate of VAT, can contribute to fiscal consolidation and help ensure that the burden of fiscal adjustment can be more fairly shared. Wages are the result of institutions in which governments can have a say, for both top as well as bottom incomes (minimum wages).

The (lagging) demand for low-skilled work could be expanded by developing the service sector since currently large parts are hidden in Europe's shadow economy, estimated to account for up to one-sixth of GDP in Germany alone (Schneider, 2003). The (strictly forbidden) employment of illegal workers—often under dire circumstances—is part of this shadow economy. The incentives to engage in regular work could be found in the workfare principle: there is no financial support without work or commitment to further education (Schneider and Zimmermann, 2010).

Kolev and Saget (2010) also address policies to mitigate earnings inequality. Regarding the low-end of the labor market, policies to reduce inequality should target the labor supply, such as providing workers with better skills and training; additionally policies also need to focus on labor demand measures, such as investment in job creation, as well as the support for institutions to ameliorate low paid workers' salaries through paths like collective bargaining and minimum wages.

The political support for limiting the rising top earnings in Europe has been mostly focused on bankers' bonuses, with the exception of Switzerland, where the population decided by referendum to regulate top incomes originating from non-entrepreneurial activities. The Swiss referendum simply says: no more golden hellos, no more golden parachutes, no more bonuses linked to merging a company with another and a binding vote on executive pay by shareholders. Pension funds holding shares in a company would be obligated to take part in votes on compensation packages. Violations could result in fines equal to up to six years of salary and a prison sentence of up to three years. Under Swiss law, the legislature is obligated to pass legislation implementing the result of the referendum within a year from March 2013 when the referendum was passed.

A European-wide introduction of such legislation would be advisable; the European governments would be coordinated and could at the same time engage in a dialogue with the private sector on maximum wages, which would exclude the rewards of entrepreneurial work, i.e. risk taking with potential private losses. One might counter that

such policies may lead to an exodus of top talent. However the likelihood of emigration of top talent to regions outside of Europe (to the US or Australia) of such a regulation is minimal, if one can generalize the findings for the US of Young and Varner (2012) for Europe. They conclude that top-income taxes in California do not lead to observable tax flight. They also studied the migration patterns of New Jersey's millionaires before and after 2004, when the state imposed a "millionaire's tax" that raised rates on those earning \$500,000 or more to 8.97% from 6.37% and conclude that "millionaire flight" is a myth. However, Vedder (2003) finds a substantial impact of tax rate increases on out-migration from one US state to another.

It is likely that the impact of a "millionaires" tax" in Europe, if applied Europe-wide, would also presumably lead to little emigration. The introduction of a millionaire tax in France in 2012 with a number of high-publicity "flight" cases will perhaps be a good case study, albeit that this was a tax only for residents in France and that evasion was easy by moving across the border to nearby countries in Europe.

Limiting top incomes will have a strong impact on income inequality in the uppermost income bracket (top 1%). At the same time the possible increase in entrepreneurial income and capital income—as may be expected from a more vibrant scenario—may offset the income, reducing the impact of the top income limitation brought about by shareholder constraints.

Rinne and Zimmermann (2012) argue that important factors that have recently contributed to the strong German employment resilience have stemmed from the 2003 Hartz market reforms, the extension of short-time work, the behavior of social partners and automatic stabilizers in social security expenditures. The impact of these reforms in Germany seems to have clearly reduced income inequality (Grabka et al., 2012).

Minimum wages are hardly effective in reducing wage inequality, however strong the political appeal is to establish minimum wages. This can be best illustrated for Germany, where in 2013 some 1.2 million persons (4% of the workforce) worked for less than 5 euro per hour (Die Welt, 5 September 2013). In the recent 2013 election campaign, the introduction of a minimum wage for all workers was advanced as an important theme to ensure that full-time work provides for a living. Trade unions argue for minimum wage of

8.50 euro per hour (which would raise the wages of 18% of the labor force, or 7 million workers who now work for less). Unfortunately the other side of the coin is that the minimum wage might lead to a decrease in demand for the most vulnerable group on the labor market: low-skilled workers.

It seems that the demand for low-skilled workers in Europe may not be high enough to absorb the supply, even though the supply is decreasing rapidly. An increase in the EU minimum wage would worsen the already existing difference in unemployment rates between low-skilled and middle-skilled labor in the EU.

At the same time, there are still many opportunities for taxation (including the rates for social security) to redress incomes at the bottom of the income distribution. In particular, a negative income tax for full-time workers (workfare) or a tax credit could help to provide decent incomes for full-time work. Focusing on social security allowances, like child benefits, could further ensure that the income of work plus the income from a negative income tax creates the income needed, aligned with household composition.

Between country differences should be reduced by helping lower income countries to converge faster with high income countries. This means de facto that they should quickly switch from imitation to innovation technologies. The policy described above, focusing on cohesion and structural funds for 50% for R&D and higher education might be helpful for this switch.

Therefore the following are policy recommendations for a “vibrant scenario” for EU member states:

- Introduce or augment income support for the working poor based on family circumstances through tax credits. A minimum wage is necessary to prevent employers from reaping windfall gains yet should remain at a relatively low level to avoid the destruction of jobs. At the same time the minimum wage should remain low to avoid the destruction of jobs which require little education.
- Introduce wage subsidies where labor demand is failing and where there is a “social” demand for work which requires less education (e.g. the Belgian example of the service checks or concierges at school).
- Uphold income-related prices and social payments for government service, with consideration of the “poverty trap.”

- Cap private-sector bonuses in all industries, following the Swiss example and engage in a dialogue with the private sector on maximum wages (excluding the rewards of entrepreneurial work, i.e. risk taking with potential private losses).

3.3 Mobility policy

It is unlikely that in the muddling through scenario, even with increased innovation, full employment will be reached by 2020 because of (too) low labor mobility within and between EU member states. Existing jobs disappear while new, different jobs appear as the half-life of jobs is decreasing in line with the half-life of products and production technologies. In the process, routine work in particular will continue to disappear due to robotization. If workers do not switch from jobs (in the sense of a given set of tasks) towards newly emerging jobs, either because they are immobile or have not upgraded their skills, then we could enter into a stage with substantial unemployment in combination with a substantial unfulfilled demand for labor. Full employment can only be realized if individual workers feel responsible for their own employability by being mobile and through upgrading their skills. In this respect, employment protection is a misnomer since it cannot protect the worker from non-employability.

Employment protection in EU countries increasingly has two faces: EPL for permanent workers (EPL PERM) and for temporary workers (EPL TEMP). Governments have realized that the impact of EPL PERM (with protection beyond a certain level) on economic growth, productivity, mobility, innovation and employment has been negative. This has led to the creation of more room for temporary employment with (sometimes) very little protection (EPL TEMP) and subsequently to dual labor markets where the most vulnerable groups in the labor market (the young, migrants, the least educated) are subject to the least protection. The initial “promise” implied in the policy reforms towards more EPL TEMP was that workers who started off on a temporary contract would be able to transition relatively quickly to a permanent contract. However, the experience of the recent past varies considerably across EU countries (Eichhorst, 2013).

In many EU countries we see two different but combined developments:

- A decrease in employment is generally born by those with less protection (EPL TEMP jobs), because for employers this is the least costly way to reduce employment.
- Most new jobs are created as EPL TEMP jobs.

As a result, it is likely that without further policy change, the percentage of workers with an EPL TERM contract will increase in the next years, as it did in the period 2000–2008.

Migration within the EU is low compared to that in United States. At the same time internal EU migration from Eastern to Western European countries is often felt as a threat to workers who feel that they might lose their job as the migrants might be willing to accept worse working conditions and a salary below the pay scale agreed upon in collective bargaining agreements. Also welfare migration is often suspected. While some of these fears are based on facts, the overall picture remains a substantial win-win of internal EU mobility (Kahanec, 2012; Zimmermann, 2013) and even more so if better safeguards (and perhaps higher penalties) are imposed on abuse, both for migrants as well as the native-born! Migrants fill skill gaps and release the local workforce from low-skilled occupations. More mobility also means more job transitions. Seamless transitions are preferable above those due to layoffs, which are often combined with periods of unemployment. This draws the focus on maintaining the worker's employability through both private and public means. The competence development fund in Denmark—a country with a high degree of job transitions—is an example of a successful policy which maintains employability. This fund is paid for by employer contributions. The Austrian system of severance payments is also highly inspiring. Severance payments are built up in a fund which is transferable to another employer, but can also be used for job search or retraining.

A vibrant scenario

The “vibrant” scenario is defined as having increased labor mobility within and between EU countries with EU member states at the helm; this would be leveraged by the EU as a knowledge clearing house (on what works and what does not), with country specific recommendations and guidelines.

Increased labor mobility is needed because of the reduced half-life time of products, because of the creative destruction of jobs due to innovation, and because of unemployment differences between industries, regions and countries.

In the vibrant scenario the level of job protection for temporary contracts is increased while that for permanent contracts is reduced. An increase in the protection implied in EPL

TEMP contracts might increase GDP per capita growth due to increased firm-specific investments, but might reduce the number of temporary jobs. European labor markets would benefit from decreases in EPL PERM through reduced long-term unemployment as well as increased mobility and innovation. A decrease in EPL PERM might also increase entry wages. However in the transition period, workers (particularly older ones) may experience higher unemployment with longer unemployment duration and more serious income losses when re-employed.

Martin and Scarpetta (2012) implicitly plead for EPL reduction as one of the means to create higher productivity growth and thus more employment. However, they warn that while many workers may benefit from labor market reform (through higher real wages and better careers), some displaced workers lose out via longer unemployment durations or lower real wages in post-displacement jobs. In this context, they state: “reforms of employment protection should be considered as part of a comprehensive package that also includes an adequate safety net for the unemployed and effective re-employment services” (p. 113).

EPL reforms tend to benefit workers through a more dynamic labor market that ensures better matches between workers’ skills and employers’ needs. Additionally, wages will also reflect the productivity-enhancing effects of efficient labor reallocation. EPL reforms create more job opportunities for those in employment who wish to search for better jobs.

EPL does have an impact on wages. An EPL reduction for permanent contract workers then creates room for wage increases, in addition to the benefits derived from increased allocative efficiency.

Some argue that the gap between EPL TEMP and EPL PERM could be reduced in a “wage cost neutral” move towards a single contract (see for example: “*propuesta para la reactivación laboral en España*”). This could occur in successive steps which gradually reduce employment protection for permanent workers and increase protection for temporary workers, in particular for their training. At the end of the transition (say by 2040) there would then only be one contract (instead of open-ended and temporary contracts) available in European economies.

Boeri and Garibaldi (2009) suggest that with the existence of “iso-welfare curves” for employment protection and the level of unemployment benefits, a person would be equally well off with different combinations of employment protection balanced with other unemployment benefits (high benefits in case of unemployment combined with low protection or vice versa). Using this framework, one could argue for a European-wide move towards flexicurity. In the vibrant scenario unemployment benefits are increased in combination with lower job protection, as “flexicurity” (high unemployment benefits with low protection) in the Danish model. However, Yann and Cahuc (2006) suggest that the generous unemployment benefits that are part of the Danish model can only work in high-trust societies in which few cheat the system. They imply that the EU labor market reform agenda should be country- or region-specific depending on the trust level of the regional governance. In Germany, the introduction of flexicurity through the Hartz reforms seems to have benefitted overall employment.

The Hartz reforms agenda was quite broad, including policies to further the interaction between short-time work and long-term shortages of skilled workers in sectors and regions that were particularly affected by the crisis (Rinne and Zimmermann, 2012).

The retirement age is generally not considered part of Employment Protection Legislation (EPL), but is still an important part of labor contracts. European society aging would put an unjust burden on younger generations if the retirement age is not raised in order to better align with increased life expectancy. This requires new thinking on work conditions for older workers as well as their remuneration.

If labor mobility within the EU member states is too low for sufficient economic growth, then this holds even truer for cross-border mobility (Zimmermann, 2013). Unemployment rates differ substantially between EU countries. The demographic profiles of EU countries also differ. In countries like Germany, a declining workforce size and increasing skilled-labor shortages pose huge challenges; additionally the aging population requires additional government outlays for healthcare. Rinne and Zimmermann (2013) put it as follows: “Germany needs high-skilled immigrants to cope with demographic change and a migration policy that is in line with Germany’s economic needs.” Current EU regulations do not stand in the way of internal migration. However, the huge differences in social security and pension systems between the countries, combined with the perceived psychological

costs of moving across countries (often including lingual and cultural changes), seem to be larger than the perceived benefits of a job elsewhere in the European Union.

Many different measures are needed. We distinguish between member state and EU policy.

The member states should focus on increasing mobility within their countries:

- The general notion is that unemployment should not occur if a job is lost, because workers anticipate the disappearance of the job and timely “hop” to another one. An incentive for anticipation is:
 - Reconstruct severance pay in permanent employment in the Austrian way as accumulated savings which can be transferred to another job.

Other incentives are:

- Paid leave during the notice period for the purpose of job seeking (e.g. 5–20 days).
- Sponsorships enabling individuals to try out a new job to see if it suits both parties (trial periods).
- Support while starting a new business (for example, low interest credit).
- Regular training (general and firm-level) for employed individuals to maintain employability, in worker adaptability to both the knowledge economy and technological change; making this a legal right for all labor contracts would be an important counterbalance for less worker protection.
- Further improvement of employment service through the provision of information about labor market and training possibilities, training, personal guidance, advice and counseling (on education and career choices), coaching on job search processes, and personal development activities individually or in groups (starting at the moment of the dismissal notice).
- For those who still experience unemployment, EU member states would have “flexicurity” (high benefits for a short search period), including well-functioning employment services.

The EU role in coordination with the member states on mobility policy could be:

- Active policy towards the implementation of country-specific recommendations for the labor market in individual member states, perhaps by discussions on these recommendations between the European Parliament and national parliaments.
- Ease fiscal and monetary constraints (Maastricht criteria) according to an agreed framework for member states which sign up for reform aimed at full employment.
- Improve mobility across European member states by improving language skills (compulsory English as a second language starting at an early age).
- Ensure full integration of intra-EU mobility through migrant language programs.
- Due to the wide variety of European social security systems, the transferability of social security rights within the EU between member states is impossible. Therefore

we must depart from the present system in which all social security rights apply equally to migrating EU citizens with a work permit as they do to host country citizens. This could invite “welfare” migration, which would undercut the European social model; thus safeguards must be applied even if they have a limiting effect on labor migration.

- Recognize degrees and work experience of other EU countries.
- Create EU-wide pension systems, as proposed by the EU for academics, which are not country-dependent.

3.4 Jump-starting youth employment

“Muddling through” with youth unemployment is an unhealthy option because of the scarring effects of youth unemployment which would still be visible some 20 to 30 years later (Boeri, 2013). However, solutions for youth unemployment should be embedded into a long-run employment policy aimed at full employment. The youth employment guarantee of the EU bears serious political risks if there is no job at the end of the guarantee period. Also ignoring the fact that youth unemployment is largely structural, and not primarily driven by the recent recession, can create the false intention to cure the disease through short-run demand measures rather than through structural reforms (Cahuc et al., 2013).

Youth unemployment in 2013 is at an alarmingly high level in a number of EU countries. Drastic measures are needed to jump-start it again. The EU has developed a youth employment program which is admirable but insufficiently funded. This plan starts from what could be seen as the German approach by bridging the education-employment gap, namely to provide on-the-job training for unemployed youngsters on a substantial scale. For that purpose, national governments can tap into the European Social Fund (ESF) where a €30 billion budget was freed up for this purpose for ESF 2007–13 projects, for which the money was allocated but remained unused. There are also funds (but very few) for ESF technical assistance to establish [apprenticeship schemes](#). The aim is to arrange at least 370,000 new apprenticeships by the end of 2013. Lastly there is €3 million in ESF technical assistance available for [young business starters](#) and social entrepreneurs. Note that the 370,000 goal, however laudable, looks pale in view of the nearly 6 million unemployed youngsters in late 2013.

A vibrant scenario

As an additional measure, one could think to introduce a European youth loan scheme, for example totaling 50 billion euro for the years 2014 and 2015. The notion would be that every young EU citizen between the age of 20 and 30 could take out a loan for a maximum of 40,000 euro at an interest rate of the government lending rate plus 2% (for default and administrative costs). It would be a personal loan which would have to be paid back according to social loan schemes. This would be similar to what some EU countries do for education loans. Basically it means one would never have to repay more than 10% of his or her income; additionally, at some point (after 20 or 25 years) if there is still a remainder of the loan, it is written off.

The loan would have to be spent in the EU within two years following procurement (any unspent amount would be repaid immediately). It could not to be used to "play the stock market" or to save. At the same time the conditions should not be too strict in order to keep administrative costs as low as possible.

The loans should not lead to contraction of credit available for other purposes. Hence it is assumed that the European Central Bank will accommodate it in the money flow as a focused form of "quantitative easing." In this way a monetary impulse is provided in spending while giving young Europeans a chance to start a business, to study, or to invest in his or her own human capital in other ways. The EU policy brief on youth entrepreneurship (2012) shows that 40% of young Europeans have an interest in starting a firm of their own. A loan scheme as proposed might help to realize this interest.

Of course, there is a risk involved in such a scheme, namely that a government deficit of an unknown magnitude will occur at the time when the loans are supposed to be paid off (2034–2040). Yet the combined impulse in spending as well as the incentive in investing which it implies are likely to outweigh the chances of an overall negative balance of such an impulse.

Another measure is to use tax incentives to lower the costs for firms for trainees (tried out in the Netherlands in the 1990s with considerable success) or even to pay firms to engage

youth with learning on-the-job as part of their educational career (the Norwegian example), under supervision of the inspectorate for education.

Germany substantially benefits from the seamless transition from school to work in the German vocational education system. All countries, on all levels of education, could do better in linking school to the labor market during school years in which transitions take place (Zimmermann et al., 2013).

Youth unemployment programs generally create temporary employment. The inherent danger is that the young worker may find himself or herself without a job once the program ends. It is then very important to embed youth unemployment programs into an overall and vigorous employment program.

In summary:

- Introduce a European youth social loan scheme; for example it could total 50 billion euro for the years 2014 and 2015 for every EU young citizen between the age of 20 and 30 with a loan maximum of 40,000 euro.
- Use tax incentives to lower the costs for firms for trainees.

3.5 Vibrant immigration

Immigration is not a popular issue with the average European (Zimmermann, 1995). The societal costs of integrating substantial groups of non-EU immigrants over the past 50 years may play a role in this. Nonetheless, the EU needs to continue to view immigration from outside the EU for its potential to reduce the emerging shortages of well-trained people, in view of the development of European demographics (Zimmermann, 2005). At the same time the EU needs to deal with the pressure for immigration into the EU which now mostly evolves through asylum seeking and refugee admission policy.

Also integration should be enhanced, in particular by paying more attention to the education of immigrant children. PISA figures show that the educational attainment of second and third generation immigrant children still lags behind that of other children, even when socio-economic class is taken into account (Ritzen, 2010, p. 81). It is a serious challenge for education policy to bridge this achievement gap.

The EU has begun with a new immigration policy by introducing a “Blue Card” in the global competition for high-skilled immigrants. The Blue Card was introduced in 2012 and aims to attract well-educated workers by granting them the right to work and live in a specific EU country. The Blue Card was introduced in order to move on from a past in which Europe attracted mainly low-skilled migrants. However at this stage, the Blue Card is not an adequate way to attract high-skilled migrants on a substantial scale. Asylum seeking is another part of recent immigration. It is a highly contested and often a human drama. On the one hand it shows the despair of those who want to leave their home and familiar surroundings in order to look for better opportunities for themselves and their children. On the other hand, it puts EU societies in a very difficult position to maintain both acceptable living conditions for asylum seekers and proper legislative procedures, while avoiding becoming the target of human trafficking or inadvertently incentivizing asylum seekers to shed documents in order to increase the chances for acceptance. It is well-documented (asylum seeking has become closely interwoven with and corrupted by human-trafficking (see for example, Monheim, 2008) that the great majority of the asylum requests are rejected, yet it is then often difficult for the rejected asylum seeker to return home because the papers are lost.

A major system overhaul is needed in order to do justice to its original intentions. However, strict as the Australian immigration system may seem, it still might be advisable that asylum requests are only accepted when filed from outside of Europe (in the first country after leaving the home country, or at European borders) since all other measures to improve the system have failed to put an end to the considerable humanitarian burden; the drain includes just treatment of an asylum seeker, due process, and possible extradition if the application is found to be insufficiently based.

Also it might be well advised to leave room for immigration into the EU for those who do not satisfy the Blue Card criteria; this can be achieved through a regulated quota system based on labor market needs as an alternative to the “asylum route.”

A European immigration policy could learn from the Israeli and US experience, where all immigration is in principle temporary and where permanent status is achieved only after a couple of years. At present, this differs between EU member states.

In summary:

- A more clear-cut and focused immigration policy is needed, while at the same time efforts should be enhanced towards integration, particularly for the second and third generation children at school.
- It is equally important to develop a political base for an immigration policy.
- A first step would be to expand Blue Card access to the whole European labor market, not just within the arrival country.
- A second step would be to expand the Blue Card to well-educated immigrants, even if they do not have a job offer.
- As a third step, non-European students graduating with a Master's degree or equivalent from (selected) European universities should be automatically eligible for a Blue Card.
- Apply anti-discrimination regulations more strictly.
- Asylum requests are only accepted when filed from outside of Europe (either in the first country after leaving the home country or at European borders).
- Leave room for immigration into the EU for those who do not satisfy the Blue Card criteria, based on a regulated quota system.
- Immigration is in principle temporary; the permanent status is achieved after a couple of years.

3.6 Sustainability

There is little leeway for enhanced greening policies in countries with considerable unemployment and faltering economic growth. In the period 2014–2020, no major greening initiatives can realistically be expected under the present growth and employment prospects, despite the obvious need for more greening as a “no-regret” scenario.

Even in countries which successfully overcame the crisis, like Germany, further greening policies are at risk. This is exemplified with the remarkable and daring *Atomausstieg* in Germany where the closure of their nuclear reactors by 2020 will imply a substantial rise in the price of energy. The decision followed earlier German “greening” initiatives like the feed-in tariff for locally produced “clean” energy, costing some 17 billion euro in 2010. Both the feed-in tariff and the *Atomausstieg* have resulted in substantial energy price increases, as well as political backlash.

A vibrant scenario

Greening (a smaller footprint) raises prices in such a way that goods and services which have a larger footprint will have the largest price increase. In this way, a shift in

consumption is encouraged away from “ungreen” goods and services. The end result is an average price increase for the total basket of consumption goods. Such a price increase would in part mitigate the increase in welfare of this “vibrant scenario” policy package measures, leading to more innovation and higher economic growth.

It is unclear how additional greening efforts could impact the composition of employment. If greening is aligned with innovation, the impact on employment is positive (as is the intention of *Atomausstieg*).

The increased prices of “ungreen” goods and services might impede European firms’ exports and thus impact its international competitiveness. However, this need not be the case if Europe (either by Kyoto-type agreements or WTO negotiations) can create a level playing field. WTO negotiations can help create this if the EU can levy import taxes on “ungreen” goods and services to a level which would adjust the import price to include the added costs the EU bore in order to make its production greener.

There are two different policy pathways which can be followed to increase greening:

- An absolute and rigorous way such that the ecological footprint (including CO₂ emissions) is at a sustainable level.
- A more indirect way in which all the growth surpluses from the vibrant growth path are made available for greening. This is not likely to lead to full sustainability but means at least a path towards increased sustainability.

3.7 Happiness

From the aforementioned points of the impact of income, its distribution and unemployment, it is obvious that Europe’s average level of happiness is likely to decrease in the years to come. This is primarily due to the impact of unemployment, both on the unemployed as well as on the employed. At the same time, the happiness distribution across EU member states will greatly vary. This was documented by the OECD (2013) which showed that between 2007 and 2012, average life satisfaction declined by more than 20% in Greece, 12% in Spain and 10% in Italy.

A vibrant scenario

Some consideration could be given to “happiness,” which is a function of unemployment (negative relation), EPL (positive relation) and income, in a world with rapidly changing jobs. Overall it can be argued that the vibrancy scenario is superior to muddling through as it comes closer to full employment, leads to more growth and less inequality and to more greening, while realizing that there are “happiness costs” involved in reducing employment protection and increasing labor mobility within and between EU countries.

4 Summary

Fixing the Eurozone’s financial framework, as well as the banking sector, is critical in order to reach a level of economic activity which can reduce European unemployment to an acceptable level by 2020. Yet in the meantime, some 90 million job years are lost, while it is unclear if labor productivity will continue to increase at pre-crisis levels, or if economic growth picks up sufficiently in order to reduce unemployment in the EU at large. This “muddling through” scenario also means that earlier developments such as increasing wage and income inequality will continue and that there is little or no room for more vigorous greening efforts. “Muddling through” puts Europe behind other nations in terms of world relevance, making it more difficult to participate in and influence others during worldwide negotiations on human rights, peace, environmental issues and trade. In contrast, a “vibrant” scenario involves more innovation, less income inequality, greater labor mobility, a selective immigration policy and increased greening. The “vibrant” scenario has the potential to raise happiness by focusing on reaching full employment.

The “muddling through” scenario is cast in terms of innovation, employment protection legislation (EPL), taxation, social security and greening in the period 2014–2020. In contrast, a “vibrant” scenario contains major reforms for the driving factors of innovation (including higher education and public research), combined with substantial changes in EPL and taxation/social security, as well as in CO2 worldwide emission regulation. In this way, the vibrant scenario creates a promising foundation for full employment, less income inequality, more growth and higher sustainability.

Vibrancy in the EU is hard to imagine without adjustments in the welfare state's organization. In particular, employment protection legislation in most EU countries needs to be reconsidered. Temporary jobs have been a savior of employment, yet do not provide enough opportunities for training. EU countries should allow for more training possibilities for temporary contracts and at the same time stimulate mobility for permanent contracts. In the tradeoff with competitiveness, Europe should not lower social standards or work quality, but instead aim to generate a full employment perspective with increased labor mobility.

It is important to focus on the reduction of income inequality within and between EU countries as part of creating the vibrant scenario. There are many ways to halt rising income inequality within countries. Special attention must be paid to the working poor: some 19 million Europeans are not able to provide food or clothing for their children (European Commission - IP/12/1141 24/10/2012).

Demographics differ substantially between EU countries. Yet, the impact of the demographic transition is likely to be much less harmful to the welfare system than expected for the EU as a whole; this is due to behavioral effects such as greater labor supply with higher wages due to increased worker shortages. EU demographics should lead EU member countries to jointly devise an immigration policy based on labor market needs, in particular the need for more well-trained workers.

"Happiness" might increase in the vibrancy process, as unemployment has such a strong negative impact on the happiness of people who experience unemployment, but also on the employed.

The policies for the "vibrant scenario" which were advanced in the preceding are:

On innovation:

- Provide more public R&D closely related to industry.
- Increase the ease of doing business (World Bank Doing Business report: ease of doing business index).
- Give more attention for entrepreneurship education at all education levels.
- Implement dual education at all education levels (including higher education) after the age of 16.
- Provide more (pre)venture capital.

On the EU level several steps could be taken:

- Ease patenting through a simple European patent to supersede national patterns.
- Allocate 50% of cohesion and structural funds to higher education and public research.

The most radical proposal for the EU to leverage individual member states is:

- Allow additional R&D expenditures in EU countries (above the status quo) to remain outside the Maastricht criteria.

On income policy:

- Introduce or augment income support for the working poor based on family circumstances through tax credits. If a minimum wage is necessary to prevent employers from reaping windfall gains, it should remain at a relatively low level to avoid the destruction of jobs. At the same time a minimum wage should remain low to avoid the destruction of jobs which require little education. Minimum wages should only be used if they help fight poverty.
- Introduce wage subsidies where labor demand is failing and where there is a “social” demand for work which requires less education (e.g. the Belgian example of the service checks or concierges at school).
- Uphold income-related prices and social payments for government service, with consideration of the “poverty trap.”
- Cap private-sector bonuses in all industries, following the Swiss example and engage in a dialogue with the private sector on maximum wages (excluding the rewards of entrepreneurial work, i.e. risk taking with potential private losses).

On labor mobility:

- The general notion is that unemployment should not occur if a job is lost, because workers anticipate the disappearance of the job and timely “hop” to another one. An incentive for anticipation is:
 - Reconstruct severance pay in permanent employment in the Austrian way as accumulated savings can be transferred to another job.

Other incentives are:

- Paid leave during the notice period for the purpose of job seeking (e.g. 5–20 days).
- Sponsorships enabling individuals to try out a new job to see if it suits both parties (trial periods).
- Support while starting a new business (for example, low interest credit).
- Regular training (general and firm-level) for employed individuals to maintain employability, in worker adaptability to both the knowledge economy and technological change; making this a legal right for all labor contracts would be an important counterbalance for less worker protection.
- Further improvement of employment service through the provision of information about labor market and training possibilities, training, personal guidance, advice

and counseling (on education and career choices), coaching on job search processes, and personal development activities individually or in groups (starting at the moment of the dismissal notice).

- For those who still experience unemployment, EU member states would have “flexicurity” (high benefits for a short search period), including well-functioning employment services.

The EU role in coordination with the member states on mobility policy could be:

- Active policy towards the implementation of country-specific recommendations for the labor market in individual member states, perhaps by discussions on these recommendations between the European Parliament and national parliaments.
- Ease fiscal and monetary constraints (Maastricht criteria) according to an agreed framework for member states which sign up for reform aimed at full employment.
- Improve mobility across European member states by improving language skills (compulsory English as a second language starting at an early age).
- Ensure full integration of intra-EU mobility through migrant language programs.
- Due to the wide variety of European social security systems, the transferability of social security rights within the EU between member states is impossible. Therefore we must depart from the present system in which all social security rights apply equally to migrating EU citizens with a work permit as they do to host country citizens. This could invite “welfare” migration, which would undercut the European social model; thus safeguards must be applied even if they have a limiting effect on labor migration.
- Recognize degrees and work experience of other EU countries.
- Create EU-wide pension systems, as proposed by the EU for academics, which are not country-dependent.

On youth employment:

- Introduce a European youth social loan scheme; for example, one totaling 50 billion euro for the years 2014 and 2015 for every young EU citizen between the age of 20 and 30 with a loan for a maximum of 40,000 euro.
- Use tax incentives to lower the costs for firms for trainees.

On immigration:

- A more clear-cut and focused immigration policy is needed, while at the same time efforts should be enhanced towards integration, particularly for the second and third generation children at school.
- It is equally important to develop a political base for an immigration policy.
- A first step would be to expand Blue Card access to the whole European labor market, not just within the arrival country.
- A second step would be to expand the Blue Card to well-educated immigrants, even if they do not have a job offer.

- As a third step, non-European students graduating with a Master's degree or equivalent from (selected) European universities should be automatically eligible for a Blue Card.
- Apply anti-discrimination regulations more strictly.
- Asylum requests are only accepted when filed from outside of Europe (either in the first country after leaving the home country or at European borders).
- Leave room for immigration into the EU for those who do not satisfy the Blue Card criteria, based on a regulated quota system.
- Immigration is in principle temporary; the permanent status is achieved after a couple of years.

On greening:

- An absolute and rigorous way such that the ecological footprint (including CO2 emissions) is at a sustainable level.
- A more indirect way in which all the growth surpluses from the vibrant growth path are made available for greening. This is not likely to lead to full sustainability but means at least a path towards increased sustainability.

References

- Acemoglu, Daron (2002), "Technical Change, Inequality, and the Labor Market", *Journal of Economic Literature*, 40(1): 7-72.
- Aghion, Philippe, Eve Caroli and Cecilia García-Penalosa (1999), "Inequality and Economic Growth: the Perspective of the New Growth Theories", *Journal of Economic Literature*, 37: 1615-1660.
- Aghion, Philippe and Peter Howit (2006), "Appropriate Growth Policy: A Unifying Framework", *Journal of the European Economic Association*, 4 (2-3): 269-314.
- Alesina, Alberto, Rafael Di Tella and Robert MacCulloch (2004). "Inequality and Happiness: Are Europeans and Americans Different?" *Journal of Public Economics*, 88: 2009-2042.
- Atkinson, Anthony B. and Eric Marlier (eds.) (2010), "Income and Living Conditions in Europe", Eurostat Statistical Books, Luxembourg.
- Atkinson, Anthony B. (2013), "Reducing Income Inequality in Europe", *IZA Journal of European Labor Studies*, 2:12. DOI:10.1186/2193-8997-2-5.
- Autor, David H., Frank Levy and Richard J. Murnane (2003), "The Skill Content of Recent Technological Change: An Empirical Exploration", *Quarterly Journal of Economics*, 118: 1279-1334.
- Barro, Robert J. and Jong-Wha Lee (2001), "International Data on Educational Attainment: Updates And Implications," *Oxford Economic Papers*, 53 (3): 541-563.
- Bartelsman, Eric J., Pieter A. Gautier and Joris de Wind (2011), "Employment Protection, Technology Choice, and Worker Allocation", De Nederlandsche Bank Working Paper No. 295.
- Baumol, William J. (1967), "Macroeconomics of Unbalanced Growth: The Anatomy of Urban Crisis", *American Economic Review*, 57(3): 415-426.
- Bergerhoff, Jan, Lex Borghans, Philipp K. Seegers and Tom van Veen (2013), "International Education and Economic Growth", *IZA Journal of European Labor Studies*, 2 (3): 1-13.
- Boeri, Tito and Pietro Garibaldi (2009), "Beyond Eurosclerosis", *Economic Policy*, 24 (59): 409-461.
- Boeri, Tito (2013), "Generation Indebted Jobless", IZA/VEF Workshop Presentation.

- Cahuc, Pierre, Stéphane Carcillo, Ulf Rinne and Klaus F. Zimmermann (2013), "Youth Unemployment in Old Europe: The Polar Cases of France and Germany", *IZA Journal of European Labor Studies*, 2 (18).
- Cedefop (2010), "Skills Supply and Demand in Europe", Publications Office of the European Union, Luxembourg.
- Cedefop (2012), "Future Skills Supply and Demand in Europe", Cedefop Research Paper No. 26.
- Chusseau, Nathalie, Michel Dumont and Joël Hellier (2008), "Explaining Rising Inequality: Skill-Biased Technical Change and North–South Trade", *Journal of Economic Surveys*, 22 (3): 409-457.
- Clark, Andrew E. (2010), "Work, Jobs and Well-Being across the Millennium", in E. Diener, J. F. Helliwell, & D. Kahneman (eds.), *International Differences in Well-Being*. Oxford University Press, Oxford.
- Coe, David T., Elhanan Helpman and Alexander W. Hoffmaister (2009), "International R&D Spillovers and Institutions", *European Economic Review*, 53 (7): 723–741.
- Cooper, Cary L. and Ulf Lundberg (2011), "The Science of Occupational Health: Stress, Psychobiology, and the New World of Work", Wiley-Blackwell, Oxford.
- Cornell University, Insead and WIPO (2013), "Innovation Index", 6th Edition, URL: <http://www.globalinnovationindex.org>.
- Draeger, Vanessa and Paul Marx (2013), "Do Firms Demand Temporary Workers When They Face Production Variation?", IZA Discussion Paper No. 6894.
- Easterlin, Richard A. (1974), "Does Economic Growth Improve the Human Lot? Some Empirical Evidence", in Paul A. David and Melvin W. Reder (eds.), *Nations and Households in Economic Growth: Essays in Honor of Moses Abramovitz*, Academic Press, New York.
- Easterly, William, Jozef Ritzen and Michael Woolcock (2006), "Social cohesion, Institution and Growth", *Economics and Politics*, 18(2): 103-120.
- Eichhorst, Werner (2013), "The Unequal Distribution of Labor Market Risks: Permanent vs. Temporary Employment", IZA/VEF Workshop Presentation.
- European Commission (2012), "Europe's Growth Strategy, Towards a job-rich recovery.
- European Commission (2013), "Strengthening the Social Dimension of the Economic and Monetary Union", European Commission Communication, Brussels.
- European Parliament (2012), "Towards a stronger EMU" ("Thyssen report").
- Eurostat (2013), "Employment statistics".

- Gill, Indermit and Martin Raiser (2012), "Golden Growth: Restoring the Lustre of the European Economic Model", World Bank, Washington DC.
- Gill, Indermit, Johannes Koettl and Truman Packard (2013), "Full Employment: A Distant Dream for Europe", forthcoming in IZA Journal of European Labor Studies.
- Giordano, Raffaella, Domenico Depalo, Manuel Coutinho Pereira, Bruno Eugène, Evangelia Papapetrou, Javier J. Perez, Lukas Reiss and Mojca Roter, (2011), "The Public Sector Pay Gap in a Selection of Euro Area Countries", ECB Working Paper Series No 1406.
- González, Felipe (Chairman of the Reflection Group on the Future of Europe) (2010), "Project Europe 2030 - Challenges and Opportunities".
- Grabka, Markus M., Jan Goebel and Jürgen Schupp (2012), Top income inequality in Germany behind us? (Höhepunkt der Einkommensungleichheit in Deutschland überschritten?) in: DIW Wochenbericht 43/2012.
- Graham, Carol and Andrew Felton (2005), "Does Inequality Matter to Individual Welfare? An Initial Exploration Based on Happiness Surveys from Latin America", CSED Working Paper No. 38.
- Graubard, Stephen R. (ed.) (1964), "A New Europe?", Houghton Mifflin, Cambridge.
- Gruen, Carola, Wolfgang Hauser and Thomas Rhein (2010), "Is Any Job Better than No Job? Life Satisfaction and Re-employment", *Journal of Labor Research*, 31 (3): 285–306.
- Heckman, James J., Lance Lochner and Christopher Taber (1998), "Explaining Rising Wage Inequality: Explorations with a Dynamic General Equilibrium Model of Labor Earnings with Heterogeneous Agents", *Review of Economic Dynamics*, 1: 1-58.
- Helliwell, John F., Richard Layard, and Jeffrey Sachs, (eds.) (2013), "World Happiness Report 2013", UN Sustainable Development Solutions Network, New York.
- Houreau, Cécile, Jo Ritzen and Gabriele Marconi (2012), "The State of University Policy for Progress in Europe", IZA Policy Paper No. 51.
- ILO (2012), "Eurozone Job Crisis: Trends and Policy Responses", ILO, Geneva.
- Kahanec, Martin (2012), "Skilled Labor Flows: Lessons from the EU", IZA Research Report No. 49.
- Kolev, Alexandre and Catherine Saget (2010), "Are Middle-Paid Jobs in OECD Countries Disappearing? An Overview", ILO Working Paper No. 96.
- Lalive, Rafael and Alois Stutzer (2011), "Economic Shocks, Labor Market Institutions, and Workers' Well-Being", Paper University of Lausanne.

- Lamo, Ana, Javier J. Pérez and A. Jesús Sánchez-Fuentes (2013), “Institutional Determinants of Public-Private Sector Linkages”, *Applied Economics Letters*, 20 (12): 1165-1169.
- Leonardi, Marco and Giovanni Pica (2013), “Who Pays for It? The Heterogeneous Wage Effects of Employment Protection Legislation”, forthcoming in *The Economic Journal*.
- Machin, Stephen and Sandra McNally (2007), “Tertiary Education Systems and Labour Markets”, A paper commissioned by the Education and Training Policy Division, OECD, for the Thematic Review of Tertiary Education.
- Martin, John P. and Stefano Scarpetta (2012), “Setting It Right: Employment Protection, Labour Reallocation and Productivity”, *De Economist*, 16 (2): 89-116.
- Mazzucato, Mariana (2013), “The Entrepreneurial State. Debunking Public vs Private Sector Myths”, Anthem Press, London.
- Meer, Jonathan and Jeremy West (2012), “Effects of the Minimum Wage on Employment Dynamics”, NBER Working Paper No. 19262.
- Monheim, Jenny (2008), “Human Trafficking and the Effectiveness of Asylum Policies”, [CSLE Discussion Paper Series](#) 2008-01.
- Moretti, Enrico (2012), “The New Geography of Jobs”, Houghton Mifflin Harcourt, Boston.
- Murphy, Gavin, Iulia Siedschlag and John McQuinn (2012), “Employment Protection and Innovation Intensity” Neujobs Working Paper D6.4.
- Nelson, Richard R. and Edmund S. Phelps (1966), “Investment in Humans, Technological Diffusion, and Economic Growth”, *The American Economic Review*, 56 (1/2): 69-75.
- OECD (2009), “OECD Employment Outlook”, OECD Publishing.
- OECD (2011), “Divided We Stand: Why Inequality Keeps Rising”, OECD Publishing.
- OECD (2012), “OECD Economic Outlook, Volume 2012/1”, OECD Publishing.
- OECD (2013), “How’s life? 2013 Measuring Well-being”, OECD Publishing.
- Peichl, Andreas and Sebastian Siegloch (2013), “Linking Labour Demand and Labour Supply on the Micro Level for Germany”, Neujobs Working Paper D10.4.
- Peichl, Andreas, Mathias Dolls, Clemens Fuest, Dirk Neumann, Nico Pestel and Sebastian Siegloch (2013), “Fiscal Union in Europe? Redistributive and Stabilising Effects of a European Tax-Benefit System and Fiscal Equalisation Mechanism”, IZA/VEF Workshop Presentation.
- Picchio, Matteo and Jan C. Van Ours (2010), “Market Imperfections and Firm-Sponsored Training”, CentER Discussion Paper Series No. 2010-57.

- Pierre, Gaëlle and Stefano Scarpetta (2004), "Employment Regulations through the Eyes of Employers: Do They Matter and How Do Firms Respond to Them?", IZA Discussion Paper No. 1424.
- Pritchett, Lant (2001), "Where Has All the Education Gone", *The World Bank Economic Review*, 15(3): 367-391.
- Putnam, Robert D. (2000), "Bowling Alone. The Collapse and Revival of American Community", Simon and Schuster, New York.
- Rinne, Ulf and Klaus F. Zimmermann (2012), "Another Economic Miracle? The German Labor Market and the Great Recession", *IZA Journal of Labor Policy*, 1.
- Rinne, Ulf and Klaus F. Zimmermann (2013), "Is Germany the North Star of Labor Market Policy?", IZA Discussion Paper No. 7260, forthcoming in the IMF Economic Review.
- Rinne, Ulf (2013), "What are Common Desired Elements in Labor Market Policies for EU Countries towards 2020?", IZA/VEF Workshop Presentation Bonn.
- Ritzen, Jo (2010), "A Chance for European Universities", Amsterdam University Press, Amsterdam.
- Ritzen, Jo, Klaus F. Zimmermann and Caroline Wehner (2013), "The Impact of Income Inequality and Financial Expectations on Euroscepticism: Systematic Differences in the European Union", IZA Discussion Paper (forthcoming).
- Ritzen, Jo and Klaus F. Zimmermann (2013) "Muddling Through or Vibrant, Scenarios for the European Labor Market towards 2020", Background Paper IZA/VEF Conference, Bonn.
- Robertson, Ivan and Cary Cooper (2011), "Well-Being: Productivity and Happiness at Work", London: Palgrave Macmillan.
- Salvatori, Andrea (2010), "Labour Contract Regulations and Workers' Wellbeing: International Longitudinal Evidence", *Labour Economics*, 17: 667-678.
- Sapir, André, Philippe Aghion, Giuseppe Bertola, Martin Hellwig, Jean Pisani-Ferry, Dariusz Rosati, José Viñals and Helen Wallace (2003), "An Agenda for a Growing Europe", Oxford University Press, Oxford.
- Schneider, Friedrich (2003): "Zunehmende Schattenwirtschaft in Deutschland: Eine wirtschafts- und staatspolitische Herausforderung", *Vierteljahrshefte zur Wirtschaftsforschung* 72(1): 148-159.
- Schneider, Hilmar and Klaus F. Zimmermann (2010), "Agenda 2020: Strategies to Achieve Full Employment in Germany", IZA Policy Paper 15.

- Schneider, Hilmar, Eric Sommer, Mathias Dolls and Karina Doorley (2013), "The Consequences of Demographic Change on Labor Demand, Wages and Pension Systems in Europe", IZA/VEF Workshop Presentation.
- Soete, Luc (2013), "From Lisbon 2000 to Horizon 2020: Reflections on the Demand for Non-Routine Skills and Entrepreneurial Qualifications", IZA/VEF Workshop Presentation.
- Stern, David and J.M.M. Ritzén (eds.) (1991), "Market Failure in Training? New Economic Analysis and Evidence on Training of Adult Employees", Springer-Verlag, Berlin.
- Tinbergen, Jan (1975), "Income Distribution: Analysis and Policies", Elsevier Science Publishing.
- Van Rompuy, Herman (2012), "Towards a Stronger Economic Union", EU.
- Vedder, Richard (2003), "Taxation and Migration", The Taxpayers Network, Cedarburg, WI.
- Vibrant Europe Forum (2012), Vaeshartelt Declaration, URL: www.vef.merit.unu.edu.
- Visser, Jelle (2006), "Union Membership Statistics in 24 Countries", *Monthly Labor Review*, 129 (1): 38-49.
- Wilkinson, Richard G. (1997), "Income, Inequality, and Social Cohesion", *American Journal of Public Health*, 87(9): 1504-1506.
- Wilson, R.A. and Katerina Homenidou (2012), "Working Futures 2010-2020", Institute for Employment Research, University of Warwick, Cambridge Econometrics.
- Wulfgramm, Melike (2011), "Can Activating Labour Market Policy Offset the Detrimental Life Satisfaction Effect of Unemployment?", *Socio-Economic Review*, 9(3): 477-501.
- WWF (2012), "Living Planet Report 2012", WWF International, Gland, Switzerland.
- Yann, Algan and Pierre Cahuc (2006), "Civic Attitudes and the Design of Labor Market Institutions: Which Countries Can Implement the Danish Flexicurity Model?", IZA Discussion Paper 1928.
- Young, Cristobal and Charles Varner (2012), "Millionaire Migration in California: The Impact of Top Tax Rates", Paper Stanford University.
- Zimmermann, Klaus F., Costanza Biavaschi, Werner Eichhorst, Corrado Giulietti, Michael J. Kendzia, Alexander Muravyev, Janneke Pieters, Núria Rodríguez-Planas, and Ricarda Schmidl, Youth Unemployment and Vocational Training, *Foundations and Trends in Microeconomics*, 2013, 9 (1-2), 1-157. DOI: 10.1561/07000000058.
- Zimmermann, Klaus F. (2005), Tackling the European Migration Problem, *Journal of Economic Perspectives*, 9 (2), 45-62.

Zimmermann, Klaus F. (2005), European Labour Mobility: Challenges and Potentials, *De Economist*, 153 (4), 425-450.

Zimmermann, Klaus F. (2013), The Mobility Challenge for Growth and Integration in Europe, IZA Policy Paper 69.