IZA/VEF/ROCKEFELLER CENTRE BELLAGIO

European labor market policy 2014-2020: muddling through or a vibrant alternative?

Jo Ritzen and Klaus F. Zimmermann

5/15/2013

IZA/VEF Workshop: A European Labor Market with Full Employment, More Income Security and Less Income Inequality in 2020, University Club, Bonn

July 11-12, 2013

Comments on an earlier draft by Vanessa Dräger, Gabriele Marconi and Michiel Ritzen are gratefully acknowledged. I am most grateful to the Bellagio Rockefeller Centre for the Residency which allowed me to write this paper in the beautiful and inspiring setting of the Villa Serbelloni. Teresa Schildmann provided research assistance.

Abstract.

The performance of Europe in the past 70 years in terms of economic growth and income convergence has been extraordinary. However, the European miracle turned out not to be resilient to the financial and economic crisis from 2008 onwards. The perspectives of a "muddling through" scenario for the period 2013-2020, in which the financial framework is fixed, are not encouraging: low growth, a loss of some 80 million job years compared to a no-crisis scenario and increasing income inequality. The "muddling through" scenario is cast in terms of innovation, employment protection legislation (EPL), taxation, social security and greening towards 2020. In contrast, a vibrant scenario with major reforms in the factors which drive innovation (including higher education and public research), combined with substantial changes in EPL and taxation/social security as well as in CO2 emission regulation world-wide creates a promising basis for full employment, less income inequality, more growth and more sustainability. The vibrant scenario might (substantially) increase "happiness" in Europe compared to "muddling through".

Contents

1. Alternatives before us.

The Euro crisis has brought despair. Europe as a Union would be bliss for the citizens of the European member states. The countries who had ventured to give up part of their own identity, namely their own currency, would be ensured of a “golden future”. The first few years (2001- 2008) showed indeed that growth in the Euro area exceeded partly that of the rest of the EU. The bitter reality today, however, is very different. Unemployment in two of the Eurozone countries, Greece and Spain, was 27% in 2013. Youth unemployment (younger than 25 years of age) in those countries amounts to 57%, meaning that more than half of the youngsters either left school without being able to find a job or had a job from which they were kicked out. Total unemployment in the EU is at 11% and rising. Non-Euro countries fare better than Euro-countries. Of course, the counterfactual in the form of a Europe without the EU or the Euro might even have shown worse results.

The European project was enthusiastically embraced by European leaders and found broad support by the citizens. “A New Europe” is the title of a collection of writings published in 1964 by leading intellectuals on the promises of Europe, in the aftermath of a Bellagio conference. Europe in the early 1960’s had turned out to be a dream: an end to armed rivalry between the nations and the associated wanton killing and maiming of millions. The new Europe created between 1950 and 1960 offered the space for economic and job growth which is double that of the US. Europe has achieved an unprecedented economic growth in the period 1820-2009. Total accumulated growth has been higher in Europe than in any other part of the world (Gill and Raiser, 2012). The European citizen saw that the leaders’ promises were fulfilled. They wanted more: in 1963 the trade unions of the EU of 6 /EU-6 countries organized a mass meeting to demonstrate their approval of a United States of Europe.

Yet/But half a century later and after the expansion of the Europe of the 6(EU-6) to a Europe of the 27, soon 28, the tables are turned. Nowadays Europe appears to be unable to respond to the financial crisis, brought about by reckless investments in the US. In many EU countries real incomes are decreasing and unemployment as well as income inequality is rising. The EU countries who embraced the common currency do worse than those who decided to stay out of it. Yet, their plight might have been even greater without the Euro.

The (very) worst result the Euro crisis has brought about is a new resentment between peoples who had gotten better and better along. This crisis is turning from a financial and economic crisis into a crisis of “bridging trust”, in particular between the North and the South of Europe. There is a resurgence of the identification with regional and national culture. The solidarity within Europe has been under observation and turned out to be absent or insufficient. The social contract which linked the EU member states seemed to end up in smoke.

There is outrage on the streets of Europe against national cutbacks imposed by no-one else but ….Europe! Demonstrations all over the continent lament the crisis, the ensuing cutbacks in social provisions and rising unemployment, blaming Europe. Greeks protest against what they see as the German domination of Europe, culminated in calling Ms. Merkel a Nazi.

Not that there were no early warning signs. The failure of the European Constitution to gain support in some EU countries rang loud as an alarm bell. The unwillingness of some of the wealthier European countries to share the financial burden in order to bring about more convergence which would have been a win-win game was yet another signal. The “I want my money back” ride of several countries might have been considered smart negotiation for a while, but the implied message was that Europe was not to be trusted as a safe haven for cooperation with mutual benefits.

With more negative financial future expectations, European citizens increasingly express skepticism in Europe (Ritzen et al, 2013). Anti-European parties receive wide spread support. The European project is in danger. It is presumably not the danger of the old times, of wars or armed conflicts. Yet the real danger is (that of) irrelevance and the inability to negotiate at the world table important issues like fair world trade with prices incorporating the impact of production on the environment(, or simply fair treatment at all). Europe is in danger of becoming irrelevant in maintaining values of human dignity and human rights and it has become incapable at maintaining social cohesion and full employment. The irrelevance of Europe in helping to resolve conflicts worldwide has been a painful sight for many Europeans, aside from the threat to our borders and the flows of refugees in the European direction.

This paper pursues the lines set at the Vibrant Europe Forum in March 2012 with the Vibrant Europe declaration (Appendix A): Europe can do better than “muddling through”. One of the main areas where Europe could do better is the labor market, which is subject of this paper and of the July 11/12th IZA/VEF workshop with academicians, stakeholders (like trade unions and employers) and politicians. Europe should aim for full employment, less income inequality and more greening. This alternative is explored here.

In chapter 2 we characterize the European labor market of the period 2000-2010 from the perspective of the (working) population, including the rising level of education of the work force, the level of innovation and the drivers there-off like research and development. The changes in the production structure have led to what some see as a polarization of the labor market, between the better and not so well educated. The retreat from social security practiced by many governments contributed to more income inequality. A characteristic of the European labor market, which deviates substantially from the US-American one, is the relatively high level of employment protection. Furthermore Europe has worked hard on sustainability, yet not hard enough to provide a secure living environment for our children and grandchildren.

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 three years of this decade have not been happy ones. The predictions tell that gradually employment demand will again grow sufficiently to absorb supply, so that unemployment by 2020 would be at levels not above 5-10% (Cedefop, 2010). However, compared to the no-crisis scenario some 80 million job years are lost (or some 80 million unemployment years are experienced). Income inequality will continue to rise in this muddling through scenario.

We then turn towards the alternative of a vibrant scenario with more growth generated through more innovation, less income by focusing more on redistribution policies, more labor mobility through less employment protection and more greening in chapter 4. In many respects this alternative follows the ideas of the Project Europe 2030 (which stood on the shoulders of the Sapir report and the Lisbon strategy).

With this study we aim to influence the positions which political parties take at the onset of the EP elections in June 2014, in the hope that a substantial group of the national parties, competing for the EP elections ask the voters for a clear mandate on the labor market. We propose a mandate for a vibrant European future, with full employment, more green growth and less income inequality. National parties should jump over their shadows of local competition and look jointly at the two alternatives for Europe: a muddling through, with a loss of some 90 million job years between 2010 and 2020, with rising income inequality and insufficient greening, a Europe which is hardly relevant in the world of international affairs, in the struggle for human rights worldwide and in trade negotiations. Or a vibrant Europe, driven by social and economic innovation, greater internal labor mobility, more ecological sustainability, with full employment, which is willing to take internationally positions in (or: to take the lead in international subjects of) peace and human rights.

2. Europe's economic performance.

Europe is hailed by Gill and Raiser (2012) 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." And: "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" (p.3).

Still there is reason to be concerned about the future. The recent years have demonstrated a European uneasiness and uncertainty regarding the future. The decade of the 1990s and 2000s with substantial "third way" reforms brought economic growth and employment, yet with less within country equity than Europe was used to. The turning point occurred when the financial crisis hit in 2008 and Europe seemed to be less able to overcome that crisis compared to the US. Several European countries were plunged into a sovereign debt crisis together with a prolonged recession with double and triple dips (of GDP growth per capita) in several other EU countries, like the UK and the Netherlands. Table 2.1 shows the (predicted) real growth rates of the European economies in the period 2010-2013 compared to those of

the US and of the world. This documents the faltering growth which is having severe implications for employment in Europe.

Table 2.1: 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.				

To sum up, in the following sections we characterize the European labor market of the period 2000-2010 from the perspective of the (working) population (section 2.1), including the rising level of education of the work force, the level of innovation and the drivers there-off like research and development (2.2). The changes in the production structure have led to what some consider a polarization on the labor market, between the better and not so well educated, visible in levels of unemployment by level of education (2.3) as well as in wage premiums by level of education (2.4) which have been major forces for rising wage inequality. The governments' retreat in social security measures contributed to more income inequality, threatening social cohesion (2.5). A characteristic of the European labor market, which deviates substantially from that in the US, is the relatively high level of employment protection (2.6) which has a substantial impact on labor mobility and labor allocation. Europe has worked hard on sustainability (section 2.7), yet not hard enough to provide a secure living environment for the generations to come. The last section (2.8) "evaluates" the developments on the labor market in the period 2000-2010 in terms of the knowledge we have about causes for personal happiness. Europe would have been a happy continent in the first decade of the 21th century, but for the crisis.

2.1. Population, education and the labor force.

During the period 2000-2010 Europe grew economically and was able to ensure sufficient job creation for a growing population and a growing work force, as is shown in Table 2.2. Europeans also became more skilled. The growth rate of the 15+ population between 2000 and 2010 was some 6%. Yet the growth of the highly skilled population was no less than 88%, combined with a growth of the middle trained population of 29%. In the labor force we find a corresponding percentage, namely of 7% for all, 71% for highly skilled staff and 11% for medium skilled workers. Note that we omit migration in and out of Europe from this study.

Table 2.2: Population and labor force aged 15+, 2000-2010 by level of education (in millions).				
	Population 15+		Labor force	
year	2000	2010	2000	2010
all	410	435	229 (100%)	243 (100%)
low	178	146	71 (31%)	55 (23%)
middle	168	197	110 (48%)	121 (50%)
high	64	92	48 (21%)	67 (27%)
Source: Cedefop, 2010, p. 84-87.				

In terms of a national comparison, the population in Europe is very much 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 a large group of countries around 24% (Denmark, France, Luxembourg, the Netherlands and the UK). All EU countries will experience an aging of the population in the years to come. In 2010 the share of the age group 65+ already exceeded that of the age group 20- in Germany and Italy (Cedefop, 2010).

Table 2.2 also shows that the labor force participation rate between 2000 and 2010 remained practically constant at 56% as the net result of a lengthening of the school career, the increased participation of women and the increase in early retirement. Labor force participation fell among all education groups: among lower trained people (from 40% to 38%), middle trained people (from 65% to 61%), as well as among highly trained people (75% to 73%), but still increased when weighing all groups together (the shift towards more training). Appendix B presents the change in skilled labor during the period 2000-2010 by share 2000 for the EU 27 countries separately.

The distribution of the labor force across education levels in 2010 deviates substantially from that computed for 2007 by Williams (2011, p. 295) from micro-data (SILC), presented in Table 2.3. The difference is to be attributed mostly to the classifications: Williams uses occupational groups (p.293) while CEDEFOP relies on education levels according to the UNESCO classification (ISCED).

Table 2.3: Distribution of employment in the EU 2007 by skill group (occupations).	
Low skill	33%
Medium skill	45%
High skill	22%
Source: Williams (2011, p. 15).	

It is important to note the differences in the employment by level of education of the public and the private sector. 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 2.3a.

Table 2.3: Distribution of work force by level of education, 2010 and by subsector of the public sector			
	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

Employment by level of education also differs within the public sector: the subsector education is by far the most education intensive (the percentage of workers with a higher level of education involved in the sector education ranges in 2010 between a low of 50% in Italy to a high of 87% in Greece, Eurostat), while in human health and social work activities the range is between 21% in Austria and 60% in Cyprus and Spain. The subsector public administration has the lowest percentage of highly trained workers, ranging from 18% in Austria to almost 70% in the Baltic countries. These ranges are remarkable, showing 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 of the countries. In the subsector public administration the differences in the composition of the labor force by level of education may also have to do with the way this subsector is built up between general public services and other parts of the subsector general government. While the EU27 spends 6.5 % on general public services, these expenditures are above 10% in Cyprus and Greece and above 8% in Belgium, Italy, Hungary and Portugal (Eurostat figures).

2.2. Innovation/vibrancy.

EU countries do well on the global innovation index (by INSEAD and the World Intellectual Property Organization): 7 of the top-ten are (North-Western) European countries, with the other three being Singapore, Hong Kong and the US. 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—internet, biotechnology, computer software, health care 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).

Innovation is in the innovation index closely related to research (size and performance) and the quality and quantity of human capital. For this paper we focus on public research as an instrument to achieve labor productivity, along the lines of Hoareau et al (2012). They show for the EU 27 in 2010, that both university research quality as well as the quality of graduates is statistically (strongly) related to labor productivity. Moreover, the quality of university research is strongly related to expenditures for research and the organizational structure within universities (in this regard university autonomy plays a substantial role).

On the road from public research to total factor 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 national or international organization of patents.
- The “ease of doing business”.
- 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 laid on private sector research while public research is being ignored. Private research is then measured as the accrued business expenditures for R&D (the 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 the ease of doing business (measured with the World Bank scale) and the quality of tertiary education systems (measured along the Jiao Tong scale, which puts a high value on research quality at universities – in the public domain) in a country is high, then the country tends to benefit more from its own R&D efforts, as well as from international R&D spillovers, and 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 whose legal systems are based on French and, to a lesser extent, Scandinavian law benefit less from their own and foreign R&D capital than countries whose legal origins are based on English or German law.

What one misses in this study, besides the accounting for public research (except for the quality indicator), is a multiplicative term between domestic and foreign R&D. Often firms indeed do research to invent, but more in particular to learn about the inventions elsewhere, in order to be close to the invention frontier. One also misses the impact of the quality of human capital additions to the stock of human capital as for example could be proxied by PISA results as in Barro and Lee (2000).

Aghion and Howitt (2008) are very convincing on the importance of institutional variables on the transmission from research 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).

In the report: the State of University Policy for Progress in Europe (SUPPE) (Hoareau et al, 2012) a variable: “(university) research- attractiveness and –productivity” is introduced for EU- countries. In a factor analysis “research- attractiveness and productivity” is composed of top scientific publications (.90), the number of universities in the top 500 Jiao Tong ranking as a percentage of the EU population (.94), incoming Marie Curie fellows (.90), the number of ERC Starting grants (.94) and the number of public private co-publications (.75) (cp. p.53).

The relation between research attractiveness and productivity on labor productivity four years later (both normalized coefficients) indicates that half of research attractiveness “spills over” to labor productivity (Hoareau et al, technical report SUPPE 2012, page 49).

2.3. Employment and unemployment.

There was a net growth of some 12 million jobs in the period 2000-2010 (Cedefop, 2012, p. 8). The (semi-)public sector accounted for more than half of that growth. The private sector showed strong growth in the sectors distribution and transport and in the sector business and other services, while the primary sector and utilities, as well as manufacturing showed a substantial loss of jobs. The sector construction grew slightly in the number of jobs (some 1 million extra jobs). Job growth was particularly strong in the period 2003-2008, after a hesitation at the beginning of the new century with low income- and employment growth.

In the period 2000-2010, European unemployment has had its downs and its ups in line with the gently rising supply and the fluctuations in demand. In the period 2005-2008 the increase in the demand for workers outpaced supply sufficiently to ensure a substantial decrease in unemployment.

Then the crisis hit the continent and between 2008 and 2010 Europe lost around 5.5 million jobs (CEDEFOP, 2012, p. 7). The years 2010-2013 are also years with –Europe wide- more job losses than gains. As a result in December 2012 we had 26 million unemployed in the EU 27, equivalent to 11% of the labor force. 5 million were under the age of 25, which represents an unemployment rate of 23% for this age group.

Unemployment is unevenly spread around Europe. Austria, Germany, Luxemburg and the Netherlands are countries with low unemployment (less than 6%), while at the other end Greece and Spain have unemployment rates around of 27% (with a youth (-25)-unemployment rate of around 57%).

One might imagine some mitigation in the uneven unemployment spread, as people, in particular youngsters, would migrate from high to low unemployment countries. However, such behavior is not the case. Cedefop (2012, p.12) mentions that there is no significant (mitigating) impact of migration within the EU on unemployment. “Most Europeans prefer not to move to find a job in another member state”.

Unemployment by level of education follows more or less the line of overall unemployment, in that regard that the unemployment level of people with high qualification is consistently some 4 percentage points below that for middle trained people which is again some 4 to 5 percentage points below that for persons with a low qualification.

2.4. Wage inequality.

Wage inequality increased in Europe in the period 2000-2010 in line with the long run changes in the structure of production in which non-routine work became more and more important. The increase in the wage premium of higher education graduates is for example described by Machin and McNally (2007) for the OECD countries for the period 1997-2003, when the supply of graduates increased.

The production structure (including technological change) in combination with the supply of factors determines the wage structure. The increasing wage inequality of the past decades is broadly viewed as a result of demand and supply of labor under gradually changing technology. Autor, Levy and Murnane (2003) argue that it is particularly computers which have created the skill-biased technological change (meaning that lower educated and unskilled workers are in less demand on the labor market) and suggest that the demand for work is in particular strong for non-routine work because routine work can be mechanized, outsourced or off-shored. This is why – in their view and the one of Acemoglu (2002) - the wage premium for (higher) skills (needed for non-routine work) has increased during the same period in which the supply increased: a shift occurred in the production structure to that effect that the demand for non-routine skills has become more important while that for routine skills is declining .

At the same time the expansion of the (semi-)public sector (which is far more “higher education intensive” than the private sector and where the wage-setting follows that of the private sector) contributed to the creation of scarcity on the market for higher educated for the private sector. The increase in the wage premiums for well trained staff has to be attributed in part to this increased scarcity.

OECD (2011) documents how all OECD countries underwent significant structural changes, driven by their closer integration into the global economy and by rapid technological progress. These changes often brought highly skilled workers greater rewards than low-skilled ones and thus affected the way earnings from work were distributed. The increase in the ratio between the earnings of the highly skilled and those of the low-skilled workers can be attributed to several factors. First, a rapid rise in the integration of trade and financial markets generated a relative shift in labor demand in favor of highly skilled workers. Second, technological progress shifted production technologies in both industries and services in favor of skilled labor.

OECD (2011) comes to the same conclusion as Chusseau et al (2008): neither rising trade integration nor financial openness has had a significant impact on either wage inequality or employment trends within the OECD countries. However, increased imports from low-income countries, increased financial flows and technological progress do tend to heighten wage dispersion.

Most OECD countries carried out regulatory reforms in the two decades from 1980 to 2008 to strengthen competition in the markets for goods and services and to make labor markets internationally more competitive. “All countries, for example, significantly relaxed anticompetitive product-market regulations and many also loosened employment protection legislation (EPL) for workers with temporary contracts” (OECD, 2011, p.30) (see further

section 1.6). “Minimum wages declined relatively to median wages in a number of countries between the 1980s and 2008. Wage-setting mechanisms also changed: the share of union members among workers fell across most countries, although the coverage of collective bargaining generally remained rather stable over time. A number of countries cut unemployment benefit replacement rates in an attempt to promote employment among low-skilled workers, some also reduced taxes on labour for low-income workers “(OECD, 2011, p.30). OECD (2011) continues by focusing on the trade-off between these measures which weakened the demand position of workers against the size of employment, with the conclusion that “empirical evidence points to the significant positive impact of reforms on employment levels”.

- **Substitution elasticities.**

Overwhelmingly, however, wage inequality arose from the difference between the demand for and supply of skills or, as captured by Tinbergen (1975) as the outcome of a “race between education and technology”. This has mostly been studied from the perspective of production functions with more types of labor and considering the substitution elasticities among different types of labor (like high and low skilled) and between labor and physical capital. Some studies include the time trends to model labor or capital augmenting (or “-saving”) technological innovation. Data sources are sometimes longitudinal, sometimes cross sectional across countries, or across sectors within a country.

Specifications of the production functions with three types of labor (along the lines of lower, middle and higher skilled workers) were introduced in a Cobb Douglass form by Tinbergen (1975) and Ritzen (1976) in an economic growth model. The first estimations for a Constant Elasticity of Substitution function with three types of labor were done by Bowles (1970). There is no capital involved in the estimates and the data are cross-sectional for 12 countries before 1970.

The substitution elasticity for a specific type of labor i with respect to another type j is the relative change in the ratio of the demand for that labor i to labor of type j due to a relative change in the ratio of the wage rate of i to the wage rate of j. Bowles (1970) found for the partial elasticities of substitution for L_1 (0 – 7 years of education), L_2 (8 – 11), L_3 (12 or more) that : a 1% change in the earnings ratio between L2 and L3 results in a 202% change in the demand ratio between L2 and L3. However, Fallon and Layard (1975) explained, based on a cross section of 75 countries, that Bowles’ finding of high substitution elasticities was the result of the omission of capital: there was a high complementarity between capital and skilled workers.

Hebbink (1992) finds a similar result with three types of labor (as Bowles) estimating also the “time trends” attached to different types of labor or to physical capital to indicate (if attached to unskilled labor or physical capital) labor or capital saving technical progress, or (if attached to highly skilled labor) to indicate the increasing demand for highly skilled labor for innovation and production “close to the production frontier”). Hebbink (1992) combines L1 (low skilled), L2 (medium skilled) and K into one factor to better study the complementarity between highly skilled workers and the combination of physical capital. He finds with cross sectional data for 1979 and 1985 for the Netherlands almost full complementarity between highly trained labor and the combined production factor H:

$\sigma_{HL3} \approx 0.02 – 0.04$

with some, but limited substitutability within H.

$\sigma_{L1, L2, K} \approx 0.5 – 0.06$

Therefore higher educated labor and capital are complements, as are lower and intermediate educated labor, yet the elasticity of substitution between capital on the one hand and lower and intermediate educated labor is high.

He furthermore finds a rate of "unskilled labor (L_1) augmentation" of 0.72 per year, meaning an autonomous growth of unskilled labor of no less than 11% for the years 1979 to 1985 (which agrees with the observations for the Netherlands).

The strong complementarity between capital and highly trained labor is a dominant feature in most findings. It also seems that highly trained labor may exhibit a demand increasing trend, while unskilled and lower skilled labor can be easily substituted for by physical capital. Katz and Murphy (1992) found point estimates for the elasticity of substitution between skilled and unskilled labor for the US for the period 1963 – 1987 of 1.41, more or less in line with later estimates by Heckman, Lochner and Taber (1998), Krusel et al. (2002) and Blankenau and Cassou (2011). Also Ciccone and Peri (2005) find an aggregate long-run elasticity of substitution between more of less educated workers of 1.5. Acematoglu (1993) and Klump et al. (2007) discuss many of these themes in their review articles.

In a recent study Varella Mollick (2011) finds across the world support for stronger links between productivity and output for "college educated" labor on the basis of estimates of the elasticities of substitution.

A somewhat different approach is used in a large number of other labor demand studies, in which own- or cross wage elasticities are estimated. These elasticities are related to substitution elasticities through income shares. The conclusion is always the same: the demand for well trained workers is on the rise, regardless of the wage rate, yet changes in the wage rate of unskilled and medium skilled workers have a substantial impact on labor demand.

Peichl and Siegloch (2012) use a translog cost function to estimate with micro-data own labor elasticities for Germany of -.6 (high skilled), -.4 (medium) and -1.1 (low), with virtually no cross labor elasticities between high and low skilled and cross labor elasticities between medium and high of .6 (demand for medium) and .1 (demand for high), and a cross demand elasticity for medium skilled workers when wages for lowly skilled workers rise of 1.1. Similarly Falk et al.(2000) shows for Germany with industry data for the period 1976-1995 that own wage elasticities of the unskilled, medium and high skilled labor are relatively low (order of magnitude -.1 to -.2). The impact of wage levels at the bottom of the wage distribution has been less than at the top.

Goos, Manning and Salomons (2009) have mapped the changes in employment shares in hours worked by occupation over 1993 – 2006 in 16 European countries versus the (log) wage, showing that the greatest changes in employment shares have occurred in the top and at the bottom of the wage distribution of 1994 (some 10% in top and in bottom, some -10% at the mean). This is another way of saying that the combined effects of labor demand (technology) and labor supply have increased or at least not decreased wages at the upper

end whereas an increase in supply of labor at the lower end has depressed wages at the bottom, presumably as an expression of the (changes in) technology at the demand side. They also show that the impact of off-shoring of jobs is often highly exaggerated, and their findings are in line with OECD (2011).

Dustmann (2007) decomposes the increase in wage inequality in West Germany in the 80's and 90's by supply side changes in the skill composition of the work force and institutional factors. At the lower end of the wage distribution he finds that one third of the rise of inequality is accounted for by de-unionization. Kolev and Saget (2010) follow the OECD (2008) line in observing that from 1985 to 2005, two thirds of OECD countries have seen an increase in earnings inequality, and that in nearly 1/3 of the OECD countries the widening was driven by an increase in inequality at both the top and the bottom of the distribution, while the other 1/3 of OECD countries which exhibited an earnings inequality increase showed a relative increase in high earnings only.

Heckman et al (1998) also find that the rising wage inequality in the US over the period 1979-1987 can be well explained by skill-biased technological change, while immigration of low skilled workers contributes little to rising wage inequality.

The increasing wage inequality in Europe in the recent past (as a result of relatively higher wages for higher educated workers) is in contrast to the supply (as shown in Table 1.2) which exceeded the demand expected on the basis of the production function estimates of the 1980s and 1990s. The explanation is found in "exogeneous" skill-biased technological progress (which was insufficiently taken into account in the demand estimates of the 1980s and 1990s. Yet also institutional factors (like the decreasing power of unions and the increasing importance of business practices and emulation on bonuses and top earnings) have contributed to an increasing wage premium for the well-educated.

- **Higher education and growth.**

In line with the earlier growth studies by Tinbergen (1975) and Ritzen (1976), Romer (1986), Lucas (1988) and Mankiw, Romer and Weil (1992) present a fully specified model of long-run growth in which knowledge is assumed to be an input in production that has increasing marginal productivity. They assume that the aggregate stock of knowledge in the economy is proportional to the cumulative sum of past aggregate investment. He makes the crucial assumption that the effect of the stock of knowledge determines productivity via a time dependent factor: capital becomes more productive all the time. It is a competitive equilibrium model with endogenous technological change. In contrast to models based on diminishing returns, growth rates can be increasing over time, the effects of small disturbances can be amplified by the actions of private agents, and large countries may always grow faster than small countries. Long-run evidence is offered in support of the empirical relevance of these possibilities. However, the endogeneity in the Romer model is still limited in assuming that capital accumulation directly causes technological advancement, while ignoring the possibility of separate investments in technology through R&D. Also the costs of investments in human capital are ignored in contrast to Ritzen (1976). Grossman and Helpman (1991) make a further extension by basing economic growth on intentional innovations, brought about by research.

In these models, capital accumulation is still determined by national savings. However, we now live in a world with a global foreign direct investment flow of US $ 1.3 trillion in 2010 (UNCTAD) with an estimated world gross domestic product of US $ 64 trillion, which signifies that 2% of world GDP is invested across national borders, at a total investment rate of some 20-25% in the last decade of the previous century (Desroches and Francis, 2007). Also, it has been widely recognized that the financial sector has been internationalized (liberalized in the 80's), giving rise to a gap between the national investment rate on the one hand and on the other hand the national savings rate. As a result the spread of interest rates worldwide is no longer determined by national savings rates, but rather by national risk premiums, which result from governance and stability, as was already suggested by Barro and Sala-i-Martin (1990).

- **Human capital.**

Most of the econometric studies on the relation between the supply of human capital, production and wages departed from a categorization of human capital into two or three groups according to education levels achieved or years of education. Recently, the distinction in routine and non-routine jobs made by Autor et al (2003) is often used in such studies.

However, the measurement of human capital in terms of levels of education (according to the ISCED categories), or years in school seemed to be of little relevance. The contribution of education measured in years in school to economic growth turned out to be non-existent (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". Pritchett surmises that he might have found different results if the "quality" of education had been taken into account, as Barro and Lee (2000) did around the same time, when they used results of the Project International Student Achievement (PISA) to measure the quality of education. Furthermore worldwide countries differ considerably in the investment in education they make per person. A quality measure for $L_{3.t}$ could be derived from the country's standing in university rankings. Ritzen (2010, p. 42, 43) presents a country ranking according to the number of universities per country which belong to the world's top (according to the Jiao Tong and the THES ranking) divided by the countries' population. A higher ranking is closely related to a higher budget per student (Ritzen, 2010, p. 49). This includes the research budget of the university. In SUPPE 2012, Hoareau et al (2012) 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). At the same time, they find that the size of higher education (the enrolment rate) is not statistically significantly related to innovation.

Note that the level of human capital for a country 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 Europe (the US even (slightly) more). This can increase the national human capital levels, if students decide to stay after graduation in the host country (as indeed applies to some 20% of these students, Bergerhoff et al, 2013).

2.5. Income inequality and social cohesion.

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 saw on average 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). Appendix C gives for some selected EU countries (all in the OECD) the figures on gross earnings inequality – expressed in the Gini coefficient - which range in the late 2000s for the selected countries between .38 for Iceland to .53 for Italy. Atkinson and Marlier (2011, p. 281) present the EU wide distribution of gross earnings as (Gini) .35 in 2006.

Taxation and transfers are means by which the gross income distribution is transformed into the net distribution of income. Overall income inequality in the EU decreased because of the differences in growth rates with the poorer countries growing faster than the richer countries. Yet underneath this decrease in between country inequality lies an increase in within country inequality.

Wage inequality in the overall setting of income inequality has been well studied for OECD countries in OECD (2008) and OECD (2011), as well as by Atkinson and Marlier (2011) for Europe. 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 the growth of the top decile was some 50% higher (namely 1.9%). OECD (2008) highlighted the inequality of labor incomes, in the same way as Williams (2011) does for the EU (and the US), by educational level.

The population weighted average Gini coefficient in the Europe of the 27 (EU 27) was in 2008 .31 with a substantial between member country difference (see Atkinson and Marlier, 2011, p.111) with a variation between a high of .38 in Latvia and a low of .23 in Slovenia. In Appendix D the details by country are given for 24 countries for which data are published by the OECD (not including Latvia). It is noted that the redistributive impact of taxation and transfers has decreased in the past decades. The increase in inequality (measured by the Gini coefficient) in the period has been some 5 percentage points.

Social cohesion is a notoriously vague concept (Wilkinson, 1997), despite all efforts at measuring it through social capital (Putnam, 2000) or otherwise. At the same time, it is used in practically every major document of any of the 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: 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 one self. “Trust” is a key notation in this notion of social cohesion. In particular the “bridging” trust (bridging social capital) between individuals belonging to different social groups or tribes in society contributes to social cohesion, more than “bonding social capital” (trust within a social group or tribe). Easterly, Ritzen and Woolcock (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 eg. 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. While Aghion et al (1999) explain the negative growth effects of inequality through the impact of the wage and wealth distribution on individual investment in human and physical capital, Easterly et al (2006) approach the impact of inequality through a decrease in trust and the resulting increase in transaction costs and decrease in governance. The connection with the Aghion et al (1999) approach is easily made: decreased trust and governance reduce factor productivity (ceteris paribus) and thus reduce economic growth.

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

2.6. Employment protection, labor demand, economic growth and the quality of work.

Employment protection can be specified in legislation, collective agreements or individual employment contracts: all of these elements are included under EPL (employment protection legislation). In Appendix E we present data on employment protection in 2008 in OECD and selected non-OECD countries.

The practice of 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).

The impact of EPL (in all of its different forms) on employment, (the duration of) unemployment, through 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.

We present some of the findings without claiming completeness.

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) (as also found by Leonardi and Pica, 2013). In this context, 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.

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 life time 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 operative, but also in another firm. Firms themselves (who have been successful) show that they “reinvented themselves” every 5-10 years, often drastically changing in the package of products they produce (with the most famous example of GE, and less famous, but definitely as successful, a company like DSM).

OECD (2009) finds that each year, on average, about 3% of jobs are destroyed in some industries, 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.

Employment protection may reduce mobility from declining to growing industries (or within firms from disappearing jobs to newly emerging jobs) by raising labor adjustment costs. It also may have negative implications for aggregate economic and labor market outcomes.

The asymmetric liberalization of temporary contracts while leaving in place stringent regulations for permanent contracts – as observed in many European countries, over the past two decades- has pushed firms to substitute temporary for regular workers. Those employed on temporary contracts (often youths and other workers with little work experience or low skills) then bear the brunt of employment adjustment, as happened in the recent great recession (see OECD, 2010).

Bartelsman et al (2011) find that high-risk innovative sectors are relatively smaller in countries with strict employment protection legislation (EPL). The described mechanism can explain a considerable portion of the slowdown in productivity in the EU relative to the US since 1995 and the findings of Gill and Raiser (2012) on the lower level of “yollies” in Europe compared to the US.

Also, employment protection in the form of firing costs for permanent workers contributes to more hiring of temporary contract workers when firms face uncertain futures (Draeger and Marx, 2013). For start-ups and firms in their initial stage uncertainty is a certain part of their existence. Employment protection is then equivalent to the support for a two tiered labor market. Leonardi and Pica (2013) studied the 1990 Italian reform that introduced unjust dismissal costs for firms below 15 employees to find that the slight average wage reduction induced by the reform hides highly heterogeneous effects. Workers who change firm during the reform period suffer a drop in the entry wage, while incumbent workers are left unaffected. Also, the negative effect of the reform is stronger for young blue collars, low-wage workers and workers in low-employment regions.

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). They also consider unemployment benefits in relation to the job protection along iso-welfare curves, making the point that flexicurity (high unemployment benefits/low protection) provides the same welfare as EPL (in the form of high unemployment protection), while the benefits of flexicurity to society (due to increased mobility) might be substantial.

Employment protection may also reduce the innovation intensity as Murphy et al (2012) analyse using panel data of OECD countries for the period 1990-1999. They find that stricter employment protection legislation leads to a lower innovation intensity. Employment protection in the form of the regulation of temporary contracts has the stronger effect on innovation (compared to employment protection for regular jobs).

Lastly, it is important to recognize that 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). Yet Picchio and Van Ours (2010) cannot find a (sizeable) significant effect.

- **Minimum wage legislation**.

Most EU countries have introduced minimum wage legislation. Germany is one of the exceptions. Yet also in Germany there is at present a ground swell to introduce such a law.

The background of minimum wage legislation generally is that a person who works full time should be able to sustain himself/herself with the wage income.

The impact of the minimum wage has been an issue of considerable debate. The key issue is the degree of the employment loss among low-wage workers and the resulting impact on poverty levels which ultimately reverts to the size of the labor demand elasticity. 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 a job, and those not covered by 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. This is in line with the findings in section 2.4 on substitution and demand elasticities for workers with low levels of education and may in part explain the differences in unemployment levels between workers with different skill levels.

At the same time the minimum wages in the EU are set at such low levels that only a small share of the jobs is affected. As a result the impact of the minimum wage on employment is negligible. Many countries do not have a minimum wage (like Denmark and Germany). The minimum wages range from about 1 euro per hour in Romania and Bulgaria to about 10 euro in France and Luxemburg. Generally the minimum wage

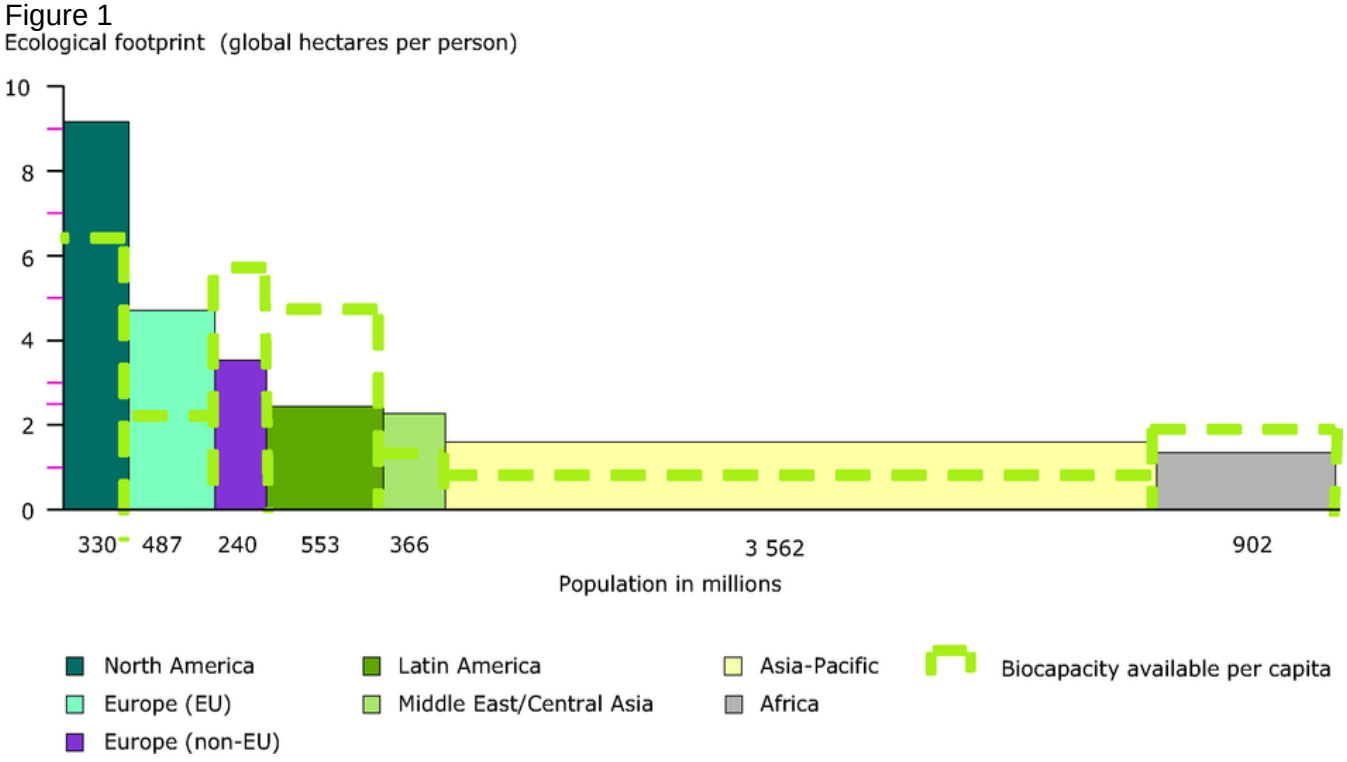
2.7. Greening.

Greening is part of the policies which affect employment. More greening in a country may lead to higher prices for products and services and as a result a lower competitive position. We use the term “greening” to indicate a process towards sustainability. The progress of that process (or the lack there-off) can be measured by the ecological footprint. This is (Wikipedia) “a standardized measure of demand for that may be contrasted with the planet's ecological capacity to regenerate. It represents the amount of biologically productive land and sea area necessary to supply the resources a human consumes, and to assimilate associated waste. Using this assessment, it is possible to estimate how much of the Earth (or how many planet Earths) it would take to support humanity if everybody followed a given lifestyle. For 2007, humanity's total ecological footprint was estimated at 1.5 planet Earths; that is, humanity 1.5 times as quickly as Earth can renew them”. The Ecological Footprint for Europe has been increasing almost constantly since 1961, while Europe's bio capacity has decreased. This results in an ever larger deficit, with negative consequences for the environment within and outside Europe and with rising uncertainties for future generations as to their capacity for survival on a reasonable welfare level.

The biggest ecological footprint is found in 2008 in the UAE (16 hectares per person), followed by the US (12), Kuwait (10) and Denmark (10). In the EU the poorer and smaller Eastern European countries, Romania (3), Latvia, Bulgaria and Slovakia (all 4) have the smallest footprints (WWF, 2012).

Figure 1 gives an impression of the ecological footprints across the different continents.

Figure 1



Source: Ecological Footprint of European countries (SEBI 023) - Assessment published May 2010; Figure 2: 2005, European Environmental Agency, 2012.

Another measure of sustainability is carbon dioxide emissions (expressed in billions of tons of CO2). In the period 1989-2008 European emissions have remained more or less the same. Global CO2 emissions have increased in recent years, mainly in the Asia and the Pacific region (UNEP, Yearbook, 2012).

CO2 exhaust per capita in 2010 differs considerably within the EU with many countries hovering around 10 metric tons per capita (half of the top emitters: Australia and the US with around the 20 tons per capita), while others are below 7 tons (like France, Sweden, Romania and Latvia) (Wikipedia)..

2.8. Happiness, the economy, the labor market and greening.

“People’s lives are characterized by events and circumstances which contribute to pain, sorrow and concerns, to joy and happiness” (Helliwell et al., 2013, p.7). Happiness is related to the labor market, through the work which people do, through the income they earn with work, through the difficulties in finding a job, the sorrow of losing a job or inability to find (a new) one and through the inequality in income which has arisen in society.

Governments care about the happiness of their citizens, about eudaemonia, the good life "Life, Liberty, and the pursuit of Happiness**"** is the phrase in the US Declaration of Independence meant to exemplify the "unalienable rights" with which all human beings are endowed. Government should protect these rights.

The factors in life which might make people more or less happy have been the subject of research. In economics the basic concept of happiness has been formulated by Easterlin (1974). The person's enduring level of happiness is an experience brought about by personal factors and important external factors, like income, work, community and governance (corruption, freedom, social support), as well as values and religion. More “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.

Across countries per capita income makes a difference on average happiness in the country. However, over time it does not, once a certain income level has been achieved (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 of happiness is between countries, 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 but one of the supports for happiness, and most of the other supports are much more evenly spread across countries.

- Unemployment.

Some consideration could be given to “happiness” which –as we know- is a function of unemployment (negative relation), EPL (positive relation, more protection more happiness for individual) and income, in a world with fast changing jobs.

When people become unemployed they experience sharp falls in well-being and their well-being remains at this lower level until they are re-employed. Helliwell et al. (2013, p.66) document that “unemployment reduces well-being in all the datasets analyzed. The main impact of unemployment on well-being is not through the loss of income, but rather through loss of social status, self-esteem, workplace social life, including the preset time structure of the working day, regularly shared experiences and contacts with people outside the family, links to goals and purposes that transcend the individual, personal status and identity, and the enforcement of activity. Unemployment is destructive due to its negative effect on these functions. The estimated effect is typically as large as the effect of bereavement or separation, and the unemployed share with these other experiences the characteristic of ceasing to be needed”. Lalive and Stutzer (2011, p. 21-22) agree, yet they find that the impact is somewhat lessened by the level of the unemployment benefits.

High unemployment also has spillover effects not only on the families of the unemployed, but also on those in work, who feel less secure in their jobs. When we total up all the loss in well-being of a rise in the unemployment rate, this turns out to be twice as large as the loss to the unemployed themselves, according to Helliwell et al. (2013, p. 67).

A comprehensive study using the German Socio-Economic Panel concludes that “our main result is that 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 (Gruen et al, 2010). A parallel study examines the value of the large German Workfare program and concludes that people’s life satisfaction rises substantially after moving onto the program from being totally out of work (Wulfgramm, 2011).

- Quality of work and employment protection.

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. However, when in work the quality of life at work is also crucial. The view that job quality consists of pay and hours of work has by now largely been superseded. In three waves of the International Social Survey Programme workers rank eight different job characteristics, on a one to five scale from “Not at all important” to “Very Important.” The 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. The results show that only around 20% of respondents in OECD countries say that having a high income is very important and the same figure applies to flexible hours and promotion opportunities. But around 60% say that job security is very important, with similar figures for interesting work and autonomy (50% and 30% respectively) (Clark and Senik, 2010). Thus it

is not surprising that measured satisfaction is shown to be strongly correlated with not only pay at work, but also measures of job security, autonomy, workplace trust, independence and so on.

Salvatori (2010) provides evidence that both permanent and temporary employees gain in terms of well-being (measured by job-satisfaction) from reforms that ease restrictions on temporary employment but leave firing costs for permanent workers unchanged. Lalive and Stuetzer (2011) find 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 the importance of employment protection for happiness for workers under a permanent contract decreased: they experienced a decline in job satisfaction between 1995 and 2000 by 3 percentage points and by 4 percentage points between 2000 and 2005 (Boeri and Garibaldi, 2009).

Worker well-being matters to firms as well as workers; 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 their jobs. They are also less likely to reduce firm productivity via absenteeism or via present-eism - turning up to work, but contributing little (Robertson and Cooper, 2011, and Cooper and Lundberg , 2011).

- **Income inequality and happiness.**

Income and/or wealth inequality can be a signal of income mobility and opportunity as much as it is a signal of injustice. Alesina et al. (2004) found for Europe for the period 1975-1992 that individuals have a lower tendency to report themselves happy when inequality is low, even if their own income might be high (by statistically controlling for individual income). Ritzen et al (2013) suggest from an analysis of Euroscepticism and financial expectations that this effect, however, may have disappeared in the recent years in Western Europe (while remaining 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 advantage for the very wealthy and persistent disadvantage for the poor, rather than a signal of future opportunities.

Alesina et al. (2004) find a strong relation between happiness and inflation. Helliwell et al (2013) show that the differences in happiness between countries are related to health (healthy life expectancy), education (the HDI average educational level among adults), the degree of social support and of freedom and corruption that individuals experience in their country.

- **Happiness and Sustainability: the Happy Planet Index (HPI).**

Individuals are in general too unaware of or cannot evaluate the impact of their behavior on the environment or to take that environment into account for their happiness. At least we are unaware of statistical analyses between happiness and environmental degradation.

Nevertheless many countries are looking for a measure of the living standard in which the impact of the behavior of the population (in production and consumption) on the environment is valued. Such a measure is the Happy Planet Index (HPI), introduced by the New Economics Foundation (Wikipedia). A country's HPI value is defined as a function of its average subjective life satisfaction, life expectancy at birth, and the ecological footprint per capita.

2.9. Europe and happiness.

Europe was overall a happy continent in the decade of 2000-2010. When asked to rate their general satisfaction with life on a scale from 0 to 10, people across the OECD gave it a 6.7 grade. Life satisfaction is not evenly shared across the OECD however. 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%.

The life satisfaction question in the European Social Survey (ESS) asks "All things considered, how satisfied are you with your life as a whole nowadays?" The World Values Survey asks almost the same life satisfaction question, except that it uses "these days" instead of "nowadays," and the response scale runs from 1 to 10. The results of the 2010 ESS are below for 22 EU countries plus Croatia plus Switzerland, the Russian Federation, Israel and Ukraine:

Table 2.5 Average happiness score in mostly European countries

	0	1	2	3	4	5	6	7	8	9	10
% of all	0.9	1.0	1.7	3.5	4.3	12.4	9.1	17.7	25.2	14.3	9.0

Source: ESS 2010, 2012.

Unhappiness is concentrated in poorer countries, like Bulgaria and the Ukraine. Not only do absolute happiness levels differ: their variations also differ between countries. Among OECD countries the correlation between country means and standard deviations is significantly negative, while for the rest of the world the correlation is on average positive. Among those countries with high average scores, some have quite high degrees of equality in the distribution of happiness (e.g. Denmark and the Netherlands), while in some other fairly high-ranking countries (e.g. Costa Rica and the United States) there is much more dispersion, and a higher proportion of the population has low life satisfaction.

2.10. Summary Europe 2000-2010.

The period 2000-2010 in Europe is to be divided in the pre-crisis (up to 2008) and in the crisis period (the last years of the decade). The crisis brought an abrupt halt to a period of convergence and –whatever the leaps and bounds- of pretty much uninterrupted economic growth, with moderate levels of unemployment. The crisis did also bring to the forefront that the European model of growth plus equity had already been waning before: income

inequality started to rise in the 1970's. The underlying causes for the coincidence of economic innovation and wage inequality growth (through the changing structure of the labor market) were observed but not politically translated into action against the growth in income inequality.

Europe has been unable to deal with the crisis. On its labor markets, unemployment is still on the rise, in contrast to the US where in early 2013 the lowest level of unemployment since 2008 was recorded. The jury however is still out on the comparison between the US and Europe as unemployment in the US may be more structural than in Europe (Rinne and Zimmermann, 2013).

The commitment to more sustainability in Europe may be one of the highest among the world's continents, yet is still not sufficient to avoid the risks of living conditions which are worse for our children and grandchildren than for us.

3. Europe 2010-2020: muddling through.

In this chapter we explore the period 2010-2020 as far as the labor market is concerned, along the lines of growth, (un)employment, income inequality and greening. The scenario is named "muddling through". In this scenario it is assumed that the financial framework for the Eurozone and the EU as a whole is fixed, meaning that credit flows will resume at pre-crisis levels. Muddling through as a scenario does not include major policy changes. The labor market for this scenario is mostly derived from a Cedefop study (2010).

Table 3.1 presents the OECD projections for GDP growth as well as potential labor productivity, potential employment and real GDP growth. This is our point of departure for "muddling through". It implicitly assumes that the 2012 and 2013 Euro-crises (mostly around Greece and Cyprus) will be put to rest within the year 2013. Also we assume that no new crises emerge, that the trust in the banking system is restored by credible measures and that credit flows resume. The OECD projections are based on the standard pre-crisis econometric models which are more or less extrapolations of the past.

The period 2008-2013 has been one with a shaky economic development: growth rates in the EU plummeted. The EU27 went into a recession (-4.3% growth in 2009) with a second dip in 2012 (-.3%). The patterns across Europe in the growth record are:

- The countries which suffered most were in general the countries 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 a country with the highest compound decline in growth over the period 2008-2012.
- Euro-area countries fared less well than not Euro area EU countries.

Table 3.1: Euro area: potential GDP, labor productivity and employment growth, 2012-2050.									
Potential real GDP growth			Potential labor productivity growth			Potential employment growth (output per employee)			Real GDP growth
2012 2017	2018 2030	2031 2050	2012 2017	2018 2030	2031 2050	2012 2017	2018 2030	2031 2050	2012 2017
1.4	1.7	1.4	1.0	1.7	1.5	0.4	0.0	-0.2	1.7
Source: OECD, 2012, p. 200 NB Potential Euro area real GDP growth (%) in 2020: 2.2% (OECD, 2012, p. 220).									

The context is one in which other parts of the world are growing faster, notably China, India, Brazil, Russia (the BRIC countries), the MIST countries (Malaysia, Indonesia, South Korea and Turkey), but 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 to a lesser extent than in the previous decade. The shift towards a better trained labor force continues unabatedly (section 3.1). Yet economic growth remains sluggish while the level of innovation in Europe is likely to be overtaken by countries outside Europe (section 3.2).

We will see that -with rising unemployment- the first three years of this decade (2010-2013) have not been happy ones. The predictions show that gradually employment demand will again grow sufficiently to absorb supply, so that unemployment by 2020 would be at levels not above 5-10%. However, compared to the no-crisis scenario some 80 million job years are lost (or some 80 million unemployment years are experienced). Employment growth will be primarily located in the private sector (section 3.3 and 3.4).

Income inequality will continue to rise in this muddling through scenario, as wage inequality (section 3.5) and income inequality (3.6) will continue to rise. Sustainability is not pursued more vigorously than in the past (section 3.7) and happiness decreases (3.8). Section 3.9 gives a summary with conclusions.

3.1. Population and labor force by level of education.

The overall labor supply trends measured by the number of economically active people (labor force aged 15+) with high- and medium-level qualifications show a substantial increase for those who are qualified at a higher level, holding a university degree or equivalent (by 19 million). Although the supply of those with medium-level qualifications, mainly vocational, is expected to increase to a lesser extent (by 11 million), they will still remain the majority of the European labor force (50%). The labor force with low-level qualifications is projected to fall by around 16 million. 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 3.2 shows that the percentage of workers with higher education will increase by 7 percentage points (while it rose between 2000 and 2010 by 8 percentage points).

Table 3.2: Population and labor force age 15+ (in millions), 2010-2020 by level of education.

	Population 15+		Labor force	
year	2010	2020	2010	2020
all	435	450	243 (100%)	246 (100%)
low	146	113	55 (23%)	40 (16%)
middle	197	217	121 (50%)	124 (50%)
high	92	120	67 (27%)	82 (34%)

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

3.2. Innovation/ vibrancy.

There are few signs that the EU 27 takes the vibrancy challenge –as expressed for example by the relative absence of yollies in Europe, compared to the US- seriously, contrary to the language used in the Lisbon declaration of 2000. The increased outlays for public R&D and for the improvement of the quality of education in BRIC countries, in many MIST countries and in the oil rich Arab countries, has little following in Europe, except for some “excellence initiatives”, like the one in Germany (see country reports in Hoareau et al, 2012). It is likely that European countries will find themselves on average lower on the Global Innovation Index by 2020. Instead of 7 (2010) there may be no more than 3-4 EU countries still among the top-10. This is also expressed in Table 2.1 where labor productivity growth is estimated to be 1% for the period 2012-2017. The recent discussion in the European Council (of Prime Ministers) on the so called Horizon 2020 program (on research) which foresaw a EU outlay of some 80 billion Euro for the period 2013-2017 bodes ill for the awareness in the Council of the innovation challenges. In the budget proposal of the Council the amount was reduced to 70 billion, less than 10% of the total budget while at the same time the budget for agricultural subsidies remains at around 50%, making the EU in fact an EU of milk and wine, butter and beef, rather than of knowledge.

3.3. Employment in the (semi-)public sector.

Cedefop (2012, p 8) reckons that the growth of jobs in the (semi-) public sector in the EU 27 in the period 2010-2020 may be restrained (to some half a million in a total increase in employment of eight million net new jobs). This may be an underestimation in view of the ageing of the population which will drive up the demand for health care. It seems unlikely that the increased demand for health care workers will be compensated for by an almost equivalent decrease of jobs in other sectors in the (semi-)public sector. Cedefop (2012, p.26) explains that this is mostly due to the expected contraction in public administration and defense. Table 3.2a shows how Cedefop sees the expansion in the three major parts of the public sector:

Table 3.2a Expansion public sector 2010-2020 by level of education and subsector (in millions).				
	All qualifications	Low qualification	Medium qualification	High qualification
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				

The total of job openings (expansion or contraction and replacement demand) is given in Table 3.2b.

Table 3.2b Total job openings 2010-2020 public sector by level of education and by subsector (in millions).				
	All qualifications	Low qualification	Medium qualification	High qualification
Public administration	4,2	0	.9	3.3
Education	6.2	0	1.7	4.5
Health and social work	8.7	.2	3.0	5.5
Total	19.1	.2	5.6	14.3
Source: cedefop.europe.eu/EN/Files/5526				

In 2010 the percentage of GDP in the public sector and the corresponding employment ranged between 12% in Romania to 25% in Denmark (Eurostat, National Accounts). The richer West European countries had a percentage above 20%, the poorer Central and Eastern European countries between 14 and 20 %. The exceptions are in Western Europe: Luxemburg (15%) and in Southern and Eastern Europe Cyprus (22%), Portugal (22%) and Greece (20%). In the OECD at large, governments spend some 13% of GDP on public social services (education, health, care services etc., OECD, 2011, p. 38).

The production structure of the (semi-)public sector is likely to exhibit little or no substitutability between production- factors due to changes in relative wage rates (as was first broadly observed by Baumol (1967). There is also no evidence of “technological” labor saving progress, despite the technical advances in the medical sector and the great promises of educational technology. It seems that these have increased quality, but not affected labor productivity differentially between workers with different levels of education. The production technology in education, health and government is more or less fixed. The ratio of wages of doctors to nurses 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”, i.e. the gross wage rate per category of workers is determined by the wage setting in the private sector, even though differences emerge across countries, with Greece, Ireland, Italy, Portugal and Spain exhibiting higher public sector premiums than other countries (Giordano et al, 2011). The latter is in line with institutional determinants of public-private sector linkages in a pool of 18 OECD countries, as explored by Lamo et al (2012), where it is clear that throughout Europe trade union membership has shifted towards the public sector (Visser, 2006).

3.4. The private sector.

“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”(Cedefop, 2010, p.9). The OECD estimates for the Euro area a potential employment growth of .4% in the period 2012-2017 and of 0 in the period 2018-2030 (Table 3.1). These figures point in the same direction as the Cedefop estimates.

The net total of private sector jobs to be created in the private sector is estimated by the Institute for Employment Research, University of Warwick and Cambridge Econometrics for the period 2010-2020 to be about 8 million (Wilson and Homenidou, 2012 and Cedefop, 2012, p. 22), marked by an almost certain gradual decrease in agriculture and textile and a more uncertain increase in sectors like pharmaceuticals, automotive construction and in the commercial services.

There is considerable variation within the EU in job growth, where in some of the richer EU countries the share of employment in the services is to grow in 2020 above 50%. 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 the “no crisis” scenario predictions, so that by then the number of jobs is the same as would have been without the crisis. However the number of job-years lost during that period (the surface between the 2008-2020 no-crisis line and the 2008-2020 crisis plus recovery line) is substantial, namely more than 80 million job years.

Table 3.3: Expansion of jobs, 2010-2020, EU27 by level of qualification (millions).

High qualification	20
Medium	2
Low	- 14

Source: Cedefop, 2012, p. 34.

3.5. Unemployment.

ILO (2012, p. 12) is highly concerned about the present development on the European labor market: "Mounting evidence points to the fact that a prolonged labour market recession may be in the making. Long-term unemployment is on the rise and many workers are becoming excluded from the labour market", because of the high unemployment rates, even higher among the young with potentially long lasting effects on their careers.

In April 2013, the youth unemployment rate in the Eurozone was over 25 per cent. It exceeded 30 per cent in Italy, Portugal and Slovakia and was over 57 per cent in Greece and Spain. Youth unemployment rates also were high in reasonably successful countries, such as Belgium and Malta. In 2012 ILO (p.12) added: "Without a prompt policy turn – to address the crisis and to regain the trust and support of workers and enterprises – it will be difficult to implement the reforms necessary to put the Eurozone back onto a path of stability and growth". This is even truer in early 2013.

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 (decrease in supply of people with low education levels, increase in the supply of well-trained people). The trend continues to be that people with low qualifications will find it more and more difficult to find 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 the family composition, health and (net) wages. Peichl and Siegloch (2012) estimate with micro-level data for Germany (for household groups by level of education, age and family composition) 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 decrease in the labor force due to demographics is already declining- labor market shortages may be enhanced by reduced supply.

3.6. Wage inequality.

The demand forecasts of Cedefop (2012, p. 29) show that most job growth will be either in the higher- or the lower-skill occupations showing lower growth in the medium level qualifications. Jobs that will be demanded tend to be characterized by non-routine tasks (Autor et al. 2003): they cannot easily be replaced by technology or organizational change. Workers, in manufacturing, commercial services, in whatever occupation or qualification level, working largely on routine tasks can be and most often are substituted by technology either through changes in the local production or by off-shoring. The (semi-)public sector, in particular health and education, is likely to remain as human capital intensive as is today, even though for example ict (information and communication technology) seems to hold great promises, yet mostly for qualitative improvement, rather than replacement of the doctor or the teacher by ict in combination with lower skilled staff .

Housekeeping, personal care and catering are subsectors which are also sectors with non-routine work. The number of jobs in those subsectors will thus be unaffected by technical change is likely to grow in growing economies (either in the shadow or in the open economy).At the same time the number of jobs in

The substantial increase in the wage premium of the highly trained in the period 2000-2010 was the result of a faster increase in demand for non-routine jobs compared to the supply. However, it should be noted that in the decade 2000-2010 a substantial part of the increase in supply went to the wage- following (semi-)public sector, so that the wage forming private sector actually may have been affected by a supply shortage.

Cedefop (as in Table 3.2 and 3.3) expects the highly trained labor force to grow by 15 million people while demand grows by 20 million people. It is then likely that the wage premium increase of the highly trained population is going to be at least as strong as it was in the period 2000-2010, even though the public sector is no longer “crowding out” the public sector of highly trained graduates.

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

In order to get a feeling for the impact of the supply/demand interaction by level of education on wage formation (and on wage ratios) it is important to have an impression how economic growth and employment creation is going to be resumed. It is likely that in this process the first step will be some sort of “jobless” growth, with new investments which require non-routine workers while leading to a loss of lowly skilled jobs. Hence 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.

At the same time growing demand for low skilled non-routine service jobs has been an expression of the increased income inequality in which the better paid could afford the services of others for their personal care and attention. An increase in income inequality then means more demand for lower skilled workers in non-routine work. Yet, overall one would consider the Cedefop (2012) predictions for job growth for lower skilled workers in the period 2010-2020 to be “optimistic”.

In any case, the numbers of the Cedefop (2012) forecast give rise to the expectation of an increase in wage inequality across education levels, due to the continued increase in non-routine jobs.

3.7. Income inequality.

It is highly likely that income inequality will continue to rise across Europe, as the result of at least the following process:

- Income inequality between European countries will decrease less as in the past as the “convergence machine” seems to have halted: the differences in growth rates between richer and poorer countries seem to become less (OECD, 2012) with a possible exception for the Baltic countries, implying that the gap between the richer and the poorer countries remains.

- Income inequality within countries increases because of increased wage inequality.
- It 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 move in the direction of a “flat tax”.
- The room for inequality reduction 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 see a (more or less) serious worsening of the Gini coefficient, likely to be a bit larger than that of the first decade of the 21st century when it increased in Europe by about 5%.

3.8. Sustainability.

Where there is considerable unemployment and economic growth is faltering, there is little leeway for enhanced greening policies. This is exemplified with the remarkable and daring “Atomausstieg” in Germany where the closure of the nuclear reactors by 2020 will imply a substantial rise in the price of energy, following on earlier German initiatives, like the feed-in tariff for locally produced “clean” energy (with a cost of some 17 billion Euro in 2010). The political backlash against this price increase is substantial.

In the period 2010-2020 no major greening initiatives are to be expected if indeed the projections on growth and employment turn out to be realistic (and are not superseded by reality), despite the obvious need for more greening in a “no-regret” scenario.

3.9. Happiness.

It is obvious from the preceding that –in view of what we know about the impact of income, its distribution and unemployment - Europe’s average level of happiness is likely to decrease, due to the impact of unemployment, both on the unemployed as on the employed. At the same time the distribution of happiness across the population will alter with a higher degree of variation.

3.10. Summary of the “muddling through” scenario.

Fixing the financial framework in the Eurozone and fixing the Banking sector is important to at least achieve the level of economic activity through which in 2020 unemployment in Europe is reduced to acceptable levels. Yet in the meantime some 80 million job years are lost (implying that the same number of unemployment years has come about). This muddling through scenario also means that earlier developments like increasing wage- and income inequality are continuing and that there is little or no room for a more vigorous greening effort. “Muddling through” puts Europe behind in relevance in the world, making it more difficult to play its role in the world’s negotiations on human rights, on peace, on the environment, but also on trade.

4. A vibrant alternative for labor market policies.

The vibrant alternative departs from the same premises as the “muddling through scenario” with respect to the fixing of the financial framework, so that credit flows can resume and trust in the banking system is restored.

Moreover it departs from full employment on the shortest possible term and maintaining it through policy measures which have been considered up to now to be outside the realm of possibilities.

Full employment is maintained through more innovation, more mobility, more flexicurity, more work related social security, being soft on the minimum wage, less labor regulation, less business regulation and more credits for entrepreneurs, while accommodated by less income inequality (through restrictions on top wage incomes and focused on social security) and more greening. This approach can be argued as contributing to happiness, both in terms of the levels of happiness as in its distribution.

The major question is not whether such an alternative is possible. It is about the governance: are EU Governments able to carry it out without surrendering to the moral hazards involved?

4.1. Innovation/ vibrancy.

More public R&D, less entrepreneurial regulation, better quality education and more credit for starters can be argued (see section 1.2) to 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 in the effectiveness of public R&D expenditures, whether measured in citations or in patents or in knowledge based startups or in “intrapreneurship”. It is important to analyze the research Governance factors which contribute to the best research outcomes. Obviously, competition is one of them. At the same time the organization of competition should avoid bureaucratization and should be focused on long run research results. In many respects the Sapir report (2003) followed this line.

The difference between on the one hand the richer Western European Countries and on the other hand the poorer Central and Eastern European countries in terms of research effectiveness (as well as research effort, expressed in the % of GDP spent on public R&D) is striking (see Hoareau et al, 2012). A new convergence should arise from stronger human capital and R&D positions in the poorer countries. In this respect it is also counter intuitive to notice that structural and cohesion funds are hardly allocated toward universities or R&D (except for Poland)(see: country reports, Hoareau et al, 2012)

A “visualization” of this vibrancy approach is best derived from Moretti (2013). He sees the US as divided in three Americas: the brain hubs with a large number of growing firms, the Detroits with a continuous job loss and the undecided regions or cities. The brain hubs create for every new innovation job five additional, well paying, non-innovative jobs. More public R&D etc. would create such hubs all over Europe and not –as it appears now- mostly in Western Europe.

The 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 –if well embedded in the “right” organizational structure- public R&D can bring about higher levels of economic growth and more employment is tantamount to assuming that the time dependency of so called labor saving technical progress is not just on a constant level but can be influenced by R&D. By the way, instead of low-skilled labor saving technical progress there might also be something like high skilled labor augmenting technical progress as the result of public R&D investments, in the sense that the demand for skilled labor might increase. This is not the same as low-skilled labor saving technical progress as might be obvious from its implications for the demand of other factors of production.

4.2. Employment and unemployment.

A higher speed of innovation together with more worker mobility (brought about by changing EPL regulations and flexicurity) would lead to more growth and more employment. However at the same time, it would also lead to more wage differentials between high and low skills as it would increase the demand for high skilled faster than for that for low skilled labor. Greater employment of highly skilled labor in well-paying jobs increases (as a derivative) employment of low skilled workers in service jobs. Unemployment would be reduced, freeing up resources to pay for additional R&D efforts, for other labor market measures or for measures to reduce income inequality.

- Work related social security.

The (lagging) demand for low skilled work could be expanded by developing the service sector, of which large parts are currently hidden in Europe in a shadow economy that is estimated to account for up to one-sixth of GDP in Germany alone (Schneider, 2003). The (strictly forbidden) employment of illegals –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).

- Jump starting youth employment.

Youth unemployment in 2013 situation is at an alarmingly high level. Drastic measures are be needed to jump start (youth) employment again. The EU has developed a youth employment program which is admirable, but has no teeth as it is not sufficiently well funded. This plan starts from what could be seen as the German approach by bridging the education-employment gap, namely to provide on a substantial scale on the job training for unemployed youngsters. For that purpose national governments can tap into the €30 billion budget not yet allocated to projects for 2007-13 under the European Social Fund. There are also funds (but very small) for ESF technical assistance to set up apprenticeship schemes. The aim is to get

370,000 new apprenticeship placements by the end of 2013. Lastly there is €3 million in ESF technical assistance available for young business starters and social entrepreneurs. Note that –however laudable- the 370.000 looks pale in view of the 5 million unemployed youngsters in early 2013.

As an additional measure one could think of the introduction of a European youth loan scheme with for example a total size of 50 billion euro, for the years 2014 and 2015. The notion would be that every youngster between the age of 20 and 30 who is a citizen of the EU can take out a loan of a maximum of 40,000 euro at an interest rate of the Government lending rate plus 2% (for default and administrative costs).

It is a personal loan which has to be paid back according to the social loan schemes (in the same way as used in some EU countries for education loans), i.e. you never have to pay back more than 10% of your income and at some point (after 20 or 25 years) the remainder of the loan (if there is still one) is written off.

The loan is to be spent in the EU within two years after it has been procured (what has not been spent has to be repaid immediately). It is 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 the administrative costs to the lowest possible level.

The loans should not lead to contraction of credit available for other purposes. Hence it is assumed that the ECB will accommodate such 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 an own business, or to study or to invest in other ways in themselves.

The EU policy brief on youth entrepreneurship (2012) shows that 40% of young European people 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 on 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 lower the costs for firms for trainees, through tax incentives (tried out in the Netherlands in the 90s with considerable success) or even to pay firms for engaging youngsters to learn on the job as part of their education career (the Norwegian example), under the normal 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 the school years where transitions take place.

4.3. How to address wage inequality.

Kolev and Saget (2010) address policies to mitigate earnings inequality . Regarding the low end of the labor market, policies to reduce inequality should act on the labor supply (providing workers with better skills and training), as well as on labor demand measures (investment in job creation), and building institutions to ameliorate low paid workers' salaries such as collective bargaining and minimum wages. Turning to the upper end of the labor market, they see a general lack of political support of addressing rising top earnings, but have been foreseeing the Swiss 2013 amendment when they say: "since the 2007-initiated global financial crisis … a consensus seems to have emerged on the necessity to adopt pay practices for top managers which are based on the firms' long term performance and with a view to "smoothen" earnings (and bonuses)(p.15)". A European regulation of top incomes from non-entrepreneurial activities could be –in the wake of the Swiss 2013 referendum- an excellent way of reducing the rise in wage inequality. The Swiss referendum simply says: no more golden helloes, no more golden parachutes, no more bonuses linked to merging your company with another and a binding vote on executive pay by shareholders.

A Europe wide introduction of legislation to control top wage incomes might help to recreate a wage income distribution which is more like that in the period 1950-1980, before the great disequalization (documented in OECD, 2008, 2010 and analyzed by Atkinson et al., 2011) started.

The likelihood of emigration of top talent to regions outside Europe (the US or Australia) of such a regulation is minimal as can be surmised from Young and Varner (2011, 2012).

4.4. How to address income inequality.

- **Top incomes.**

Limiting top incomes will have a strong impact on income inequality in the very upper income brackets (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 impact of the limitation of top-incomes brought about by shareholder constraints.

Several studies indicate that considerable lee-way exists for sharpening taxation at the top of the income distribution without losing due to out-migration. A study by Young and Varner (2012) concludes 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 in a particular state on outmigration from that state to another state in the US.

It is clear that the US experience (with substantial mobility) is incomparable to the European one (where annual mobility across European borders within the EU is no more than 1/10 of that in the US).

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.

- **At the lower end**.

Rinne and Zimmermann (2011) argue that important factors that have contributed to the strong German employment resilience in the past years are the so called Hartz market reforms (of 2003), the extension of short-time work, the behavior of social partners, and automatic stabilizers (in social security expenditures). Among these factors, they emphasize the key role of the interaction between short-time work and long-term shortages of skilled workers in sectors and regions that were particularly affected by the crisis.

At the same time the Harz reforms have reduced the ability of the Government to reduce income inequality through social security payments. Social security could perhaps regain importance as an instrument of redistribution with the workfare principle, that is: to link income support to wage earnings, through a negative income tax.

More in general several studies show that many of the Government welfare benefits could be better targeted to be effective as a means to reach a more equitable (in view of social cohesion) income distribution.

4.5. EPL and the minimum wage.

- Soft on the minimum wage.

The minimum wage has a strong symbolic value: full time work should be able to provide a living. Unfortunately the other side of the medal is that the minimum wage may lead to a decrease in demand for the most vulnerable group on the labor market: lowly skilled workers. It seems that the demand for low skilled workers may not be high enough to absorb the supply, even though the supply is decreasing rapidly. An increase in the minimum wage in the EU would worsen the already existing difference in unemployment rates between lowly 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) could help to provide decent incomes for full time work. Focusing 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, in line with the composition of the household.

- **EPL**.

Martin and Scarpetta (2012) implicitly plead for EPL reduction as one of the means to create higher productivity growth and in that way 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 and/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 and from the fact that their

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. Leonardi and Pica (2006) find that entry wages were on average around 10% lower in small firms because of the 1990 EPL reform and the returns to tenure increased by as much as 5%. This would confirm the “Lazear hypothesis”, namely that employees pay their own firing costs. A reduction of EPL for permanent contract workers then creates room for wage increases, aside from the benefits derived from increased allocative efficiency.

Boeri and Garibaldi (2009) suggest the existence of “iso-welfare curves” for EPL and the level of unemployment benefits: a person would be equally well off with different combinations of on the one hand employment protection and on the other unemployment benefits (high benefits in case of unemployment in combination with low protection or the other way around: high protection with low unemployment benefits. One could argue –using this framework- for a European wide move towards flexicurity. However, Yann and Cahuc (2006) suggest that the generous unemployment benefits that form part of the Danish model can only work in a high trust society where few cheat the system. Besides, they document that civic attitudes cannot be systematically changed quickly just by changing institutions. They imply that the labor market reform agenda in the EU should be country or region specific depending on the level of trust and governance of the region.

- **Cross Member State mobility.**

If labor mobility in the EU member states is too low for sufficient economic growth, then this applies even stronger to cross border mobility. Unemployment rates differ substantially between EU countries. Also the demographic profiles of the EU countries differ. In countries like Germany a declining size of the workforce and increasing shortages of skilled labor pose huge challenges, while an ageing population requires additional Government outlays for healthcare. Rinne and Zimmermann (2011) 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”. Present EU regulations do not stand in the way of internal migration. However, the huge differences in social security and pension systems between the countries in combination with the perceived psychological costs of moving across country (and often language and culture) borders, seem to be larger than the perceived benefits of a job elsewhere in the EU.

Some of these costs can be reduced. For example, it would be useful to create pension systems (as proposed by the EU for academics) which are not country dependent. Also regarding social security which is based on an employment record one could make a plea for less dependency on the country where the credits are earned.

4.6. Greening.

Greening (less CO2 per capita and a smaller footprint) raises prices in such a way that the goods and services which have larger CO2 emissions and a larger footprint rise most in price, implying a shift in consumption 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 mitigate in part the increase in welfare of the package of policy measures of this “vibrant scenario”, which leads to more innovation and higher economic growth.

The impact on (the composition of) employment of additional greening efforts can only be guessed. It is likely to be in line with that for innovation, with a positive quantitative impact while furthering the polarization on the labor market.

The increased prices of “ungreen” goods and services might impede the export position for European firms and thus impact its international competitive position. However, this need not be the case if Europe either by Kyoto type agreements or WTO negotiations can create a level playing field. WTO negations can help to create a level playing field if the EU can levy import taxes on “ungreen” goods and services on a level which corrects the import price for the additional costs the EU has imposed on to make its production more green.

There are two different policy pathways which can be followed in increased greening:

- An absolute/rigorous way such that the ecological footprint and CO2 emission get to a sustainable level.
- A relative way in which all the growth surpluses from vibrancy are made available for greening. This is not likely to lead to full sustainability but means at least a course towards increased sustainability.

4.7. Evaluating Alternative Scenarios on Happiness.

Some consideration could be given to “happiness” which –as we know- is a function of unemployment (negative relation), EPL (positive relation) and income, in a world with fast 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.

4.8. Summary and conclusions for a vibrant scenario.

The vibrant scenario departs from full employment on the shortest possible term and maintains it through policy measures which have been considered up to now to be outside the realm of possibilities.

Full employment is maintained through more innovation, more mobility, more flexicurity, more work related social security, being soft on the minimum wage, less labor regulation, less

business regulation and more credit for entrepreneurs, while accommodated by less income inequality (through restrictions on top wage incomes and through focused social security) and more greening. This approach can be argued to be in favor of happiness, both in terms of the levels of happiness as in its distribution.

5. Summary and conclusions.

The EU is at the moment focused on fixing the financial and economic framework in which the EU and in particular the Eurozone can operate. This is dearly needed. At the same time it is equally important to reflect on the underlying dynamics of the pre-crisis period. Such a reflection shows that the underlying dynamics have un-European elements: on the one hand, increasing wage and income inequality and on the other hand, free rider behavior in research and development (leading to a race to the bottom with lower levels of innovation). Also the demographic characteristics of Europe (of an aging and in some countries decreasing population) have insufficiently been integrated in labor market policy.

The performance of Europe in the past 70 years in terms of economic growth and income convergence has been extraordinary. However, the European miracle turned out not to be resilient to the financial and economic crisis from 2008 onwards. The perspectives of a “muddling through” scenario for the period 2013-2020, in which the financial framework is fixed, are not encouraging: low growth, a loss of some 80 million job years compared to a no-crisis scenario and increasing income inequality. The “muddling through” scenario is cast in terms of innovation, employment protection legislation (EPL), taxation, social security and greening towards 2020. In contrast, a vibrant scenario with major reforms in the factors which drive innovation (including higher education and public research), combined with substantial changes in EPL and taxation/social security as well as in CO2 emission regulation world-wide creates a promising basis for full employment, less income inequality, more growth and more sustainability. The vibrant scenario might (substantially) increase “happiness” in Europe compared to “muddling through”.

We hope that this line of thinking, originating from the Vibrant Europe Declaration of March 2012 can incite the political parties participating in the EU elections to take an active position in favor of a vibrant Europe.

References.

Acemoglu, Daron (2002), Technical Change, Inequality, and the Labor Market", Journal of Economic Literature, 40(1): 7-72.

Aghion, Philippe and Peter Howit (2008), "Appropriate Growth Policy: A Unifying Framework", Journal of the European Economic Association, 4 (2-3): 269-314.

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.

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) (2011), "Income and living conditions in Europe", Eurostat statistical books, Luxemburg.

Atkinson, Anthony B., Thomas Piketty, and Emmanuel Saez (2011), "Top incomes in the long run of history", Journal of Economic Literature, 49(1): 3–71.

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, Roberto J. and Jong-Wha Lee (2000), "International Data on Educational Attainment: Updates and Implications", working paper no. 42, center for International Development, Harvard University.

Barro, Roberto J. and Xavier Sala-i-Martin (1990), "World Real Interest Rates", National Bureau of Economic Research Macroeconomics Annual 1990, 5(1): 15-74.

Bartelsman, Eric J., Pieter A. Gautier and Joris de Wind (2011), "Employment Protection, Technology Choice, and Worker Allocation", Paper Vrije Universiteit Amsterdam.

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, to appear in IZA JOELS.

Blankenau, William F. and Steven P. Cassou (2011), "Industry estimates of the elasticity of substitution and the rate of biased technological change between skilled and unskilled labor", Applied Economics.

Boeri, Tito and Pietro Garibaldi (2009), "Beyond Eurosclerosis", Economic Policy, 24(59): 409–461.

Bowles, Samuel (1970), "Aggregation of Labor Inputs in the Economics of Growth and Planning: Experiments with a Two-Level CES Function", Journal of Political

Economy, 78(1): 68-81.

Cedefop (2010), “Skills supply and demand in Europe”, Publications Office of the European Union, Luxembourg.

Cedefop (2012), “Future skills supply and demand in Europe”, Research Paper No.26, Publications Office of the European Union, Luxembourg.

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: Oxford University Press.

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.

Dräger, Vanessa and Paul Marx (2013), “Do firms demand temporary workers when they face production variation?, IZA DP No. 6894.

Dustmann, Christian, Johannes Ludsteck and Uta Schönberg (2009), “Revisiting the German Wage Structure”, The Quarterly Journal of Economics, 124(2): 843-881.

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*, New York: Academic Press.

Easterly, William, Jozef Ritzen and Michael Woolcock (2006), “Social cohesion, Institution and Growth”, Economics and Politics, 18(2): 103-120

EU (2012), Policy brief on youth entrepreneurship.

Falk, Martin and Bertrand M. Koebel (2000), “A Dynamic Heterogeneous Labour Demand Model for German Manufacturing”, ZEW Discussion Papers, no.00-16.

Fallon P.R. and P.R.G. Layard (1975), “Capital-skill Complementarity, Income Distribution, and Output Accounting”, Journal of Political Economy, 83(2): 279-302.

Gill, Indermit and Martin Raiser (2012), “Golden Growth: Restoring the Lustre of the European Economic Model”, World Bank, Washington DC.

Giordano, Raffaela, 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.

Goos, Maarten, Alan Manning and Anna Salomons (2009), “The Polarization of

the European Labor Market", *American Economic Review Papers and Proceedings*, 99(2, May 2009): 58-63.

Graham, Carol and Andrew Felton (2005), "Does inequality matter to individual welfare? An initial exploration based on happiness surveys from Latin America", The Brookings Institution, CSED Working Paper No. 38.

Grossman, G. and E. Helpman (1991), Innovation and Growth in the Global Economy, Cambridge: MIT Press.

Gruen, Carola ,Wolfgang Hauser and Thomas Rhein (2010), "Is Any Job Better than No Job? Life Satisfaction and Re-employment", J Labor Res, 31:285–306.

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, Richard Layard and Jeffrey Sachs (eds.) (2013), "World Happiness Report", The Earth Institute Columbia University.

Hoareau, Cécile, Jo Ritzen and Gabriele Marconi (2012), "The State of University Policy for Progress in Europe", Empower European Universities, IZA Policy Paper No. 51

ILO (2012), "Eurozone Job Crisis: Trends and policy responses", International Labor Organization (ILO). [cited on p.32]

Katz, Lawrence F. and Kevin M. Murphy (1992), "Changes in Relative Wages, 1963-1987: Supply and Demand Factors", Quarterly Journal of Economics, 107: 35-78.

Klump, Rainer, Peter McAdam and Alpo Willman (2007), "Factor Substitution and factor augmenting technical progress in the US: a normalized supply-side system approach", Review of Economics and Statistics, 89:183-192.

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 (2012), "Institutional determinants of public-private sector linkages", Paper ECB.

Leonardi, Marco and Giovanni Pica (2013), "Who Pays for It? The Heterogeneous Wage Effects of Employment Protection Legislation", the Economic Journal.

Leonardi, Marco and Giovanni Pica (2006), "Employment protection legislation and wages", IZA Paper.

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.

Mankiw, Gregory, David Romer and David N. Weil (1992), “A Contribution to the Empirics of Economic Growth”, The Quarterly Journal of Economics, 25, pp. 275-310.

Martin, John P. and Stefano Scarpetta (2012), “Setting It Right: Employment Protection, Labour Reallocation and Productivity”, De Economist, 16 (2): 89-116.

Meer, Jonathan and Jeremy West (2012), “Effects of the Minimum Wage on Employment Dynamics”, Paper, Texas A&M.

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” Neujobsworking paper no.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 (2012), Economic Outlook, Volume 2012/1.

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

OECD (2008), Growing Unequal? Income Distribution and Poverty in OECD Countries.

OECD (2009), Employment Outlook.

OECD (2010) Employment Outlook.

Peichl, Andreas and Sebastian Siegloch (2013),”Linking labour demand and labour supply on the micro level for Germany”**,** Neujobs working paper d 10.4.

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.

Rinne, Ulf and Klaus F. Zimmermann (2011), “Another Economic Miracle? The German Labor Market and the Great Recession”, IZA DP No. 6250. Published in IZA Journal of Labor Policy 2012 (1).

Rinne, Ulf and Klaus F. Zimmermann (2013), “Is Germany the North Star of Labor Market Policy?“, IZA DP No. 7260.

Ritzen, Jo (2010), “A Chance for European Universities”, Amsterdam University Press.

Ritzen, J.M.M. (1976), “Education, Economic Growth and Income Distribution”, North Holland

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 Paper (forthcoming).

Robertson, Ivan and Cary Cooper (2011), “Well-being: Productivity and Happiness at Work”, London: Palgrave Macmillan.

Romer, Paul M. (1986), “Increasing Returns and Long-Run Growth”, Journal of Political Economy, 94: 1002–37.

Salvatori, Andrea (2010),” Labour contract regulations and workers' wellbeing: International longitudinal evidence”, Labour Economics, 17: 667-678.

Sapir, André et al. (2003), “An Agenda for a Growing Europe”, Oxford University Press.

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, Institute for the Study of Labor (IZA), Bonn.

Stern, David and J.M.M. Ritzen (editors) (1991), “Market Failure in Training?”, Springer-Verlag.

Tinbergen, Jan (1975), “Income Distribution: Analysis and policies, Elsevier Science Publishing.

UNEP Yearbook (2012), United Nations Environment Programme, Nairobi.

Varella Mollick, Andre (2011), “The world elasticity of labor substitution across education levels”, Empirical Economics, 41 (3):769-785.

Vedder, Richard (2003), ”Taxation and Migration”, The Taxpayers Network.

Visser, Jelle (2006), “Union Membership Statistics in 24 Countries”, Monthly Labor Review, 129(1).

Williams, Donald (2011), “Educational intensity of employment and polarization in Europe and the US, in Atkinson, Anthony B. and Eric Marlier (eds), 2011, Income

and living conditions in Europe, Eurostat. Or: Eurostat Methodologies and Working papers, Brussels.

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”.

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, Institute for the Study of Labor (IZA), Bonn.

Young, Cristobal and Charles Varner (2012), “Millionaire Migration in California: The Impact of Top Tax Rates”. Paper Stanford University.

Young, Cristobal and Charles Varner (2011), Millionaire migration and state taxation of top incomes: evidence from a natural experiment, National Tax Journal, 64 (2, Part 1), 255–284.

Appendix A. Vibrant Europe Declaration: A Vibrant Europe for People.

The signatories to this declaration affirm their active support for the EU and its positive development. We aim for a vibrant Europe for all Europe's citizens, which helps deliver safer, stronger communities, nurture every individual talent and holds out a realistic hope of betterment for themselves and their children. We want a Europe that aims for higher and sustainable growth, with outcomes that promote full employment and reduced wage inequality. Crucial to achieve this are trade agreements in which sustainability is rewarded, a migration policy which is a win-win for both the receiving country and the migrant, and a decisive pooling of responsibility, which Europe's nations must accept, for their external relations with the rest of the world. The European Union should provide a vibrant framework for the development of our economies and societies. To do this the EU must work closely with regional and national Governments, in the spirit of mutual reinforcement, where trust is restored as the leading organizing principle, accountabilities are clear and transparent and executive decision-making is devolved to the maximum possible extent. Vibrant must be the catchword for this new dynamic Europe, where creativity and entrepreneurship can blossom, new products and services originate, and it is good to live because a strong sense of community offers fellowship and security. Europe has been a tremendous asset for its citizens. In the post WW II decades, European integration facilitated unprecedented economic growth and strong convergence between poorer and richer member states. But for the past decade and more, Europe has found it difficult to cope with the realities of a fast changing world where the new emerging economies of other continents have substantially reduced worldwide income inequality but at the same time added to Europeans' sense of insecurity.

At the same time the relative power of even the largest EU member states has dramatically diminished. In the old world of the G7, more than half the members were EU member states. Today, in the G20, which has now become the major forum for world economic debates, only one fifth of the members are European. With Europe only amounting to some 8% of the world population, individual European countries will have less and less leverage on the world stage.

Europe as a whole faces the choice of either hanging together to remain influential and relevant, or succumbing one by one to the whims and demands of other world powers. A Europe that successfully hangs together could mean so much more in the hearts and minds of its citizens. It could navigate a careful course between the strong desire for both individual freedom and community belonging, within a European tradition of openness, which is part of Europe's best traditions.

To believe in a vibrant EU that is more influential in shaping globalisation to our citizens' benefit does not mean that decision-making and responsibility needs to be pushed upwards to the anonymity of some higher level of governance: communities can and should be strengthened. With the aim of contributing to convergence within and between EU member states in living conditions, they should be financially empowered by higher levels of governance to take control of their future. Each community should take responsibility for its own 'social contract': its own particular balance between rights and responsibilities within the

welfare state, as well as taking decisions on where public intervention is needed, or private endeavour should be relied upon, on issues such as housing and schooling. The financial resources for sustaining this social contract will be derived from enhanced sustainable growth across the whole EU, achieved by the encouragement of creativity and entrepreneurship in an overall setting of full employment, yet leaning strongly against increased wage inequality. Our aim is to influence decisively the European Parliamentary elections of 2014 with our vision of a vibrant revitalised EU. Each signatory within her or his own circle, be it a political party, a group of employers or trade unionists, an academic or civil society network or otherwise, spreads these notions and contributes to their elaboration.

The vision brings six different strands of thinking, each of which present their own dilemmas and choices:

- A vibrant, dynamic Europe, which appeals as a place to thrive for intelligent, creative minds and hands.

- A Europe, which offers hope of improvement and the prospect of real social mobility for all citizens, while being mindful of the inherent dangers implied in the present trend towards greater inequality in income and wealth.

- A Europe, which acts as a responsible steward to future generations and follows a no-regret course in tackling climate change and preserving the natural environment.

- An open Europe for all those who want to contribute to the common European cause in a genuine spirit of tolerance, social trust and community cohesion, at all times respecting individual freedom of choice as a fundamental European value.

- A secure Europe, which continues to live in peace by furthering its internal economic and social cohesion and by intense cooperation with neighbouring countries on its borders in a meaningful partnership of respect, recognition and compromise.

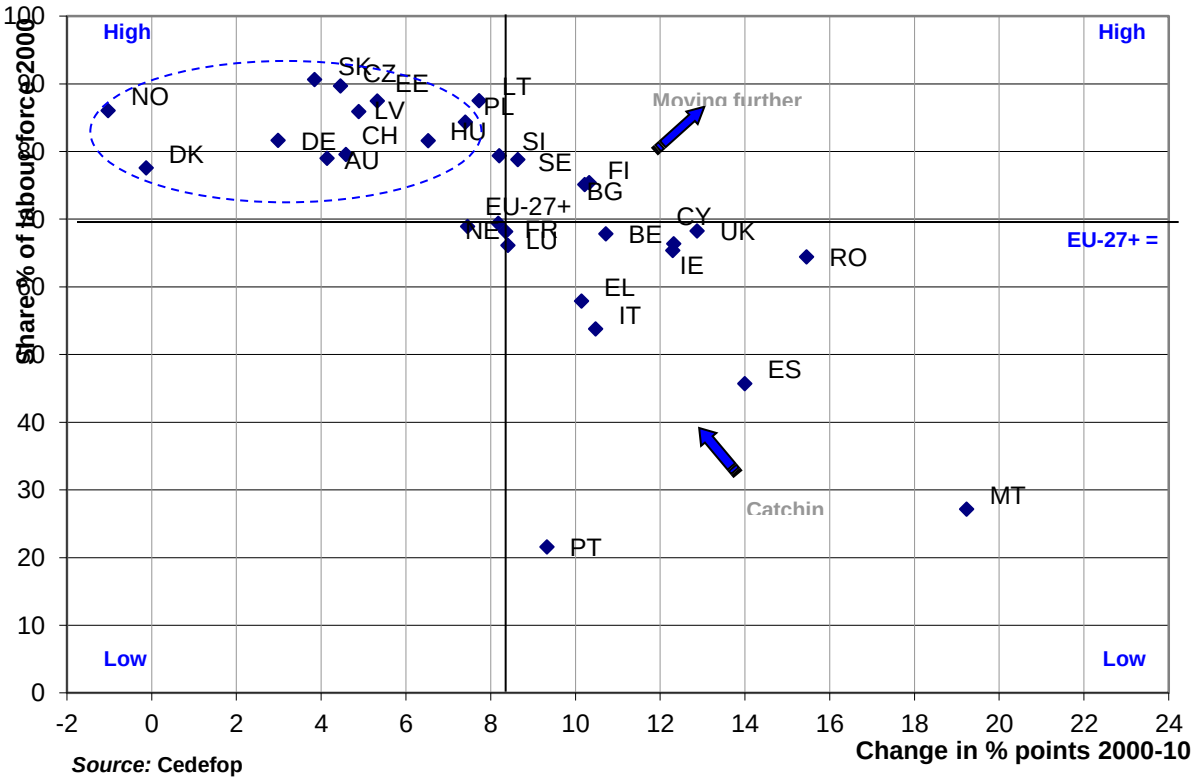
- A European Union whose institutions regain the trust and respect of the ordinary European citizen.

So that Europe is more than the sum of the EU member states.

We realize that most of us come from countries in one specific part of Europe and look forward to a discussion with colleagues from other parts of Europe with the openness to come to a joint position which also encompasses their views.

First signed in Vaeshartelt (Maastricht) March 23, 2012

Appendix B: Change 2000-2010 in Skilled labour (Medium and Higher Qualification) by share 2000.



Source: **Cedefop**

Appendix C: Gini coefficient, before taxes and transfers.

Country	mid-70s	mid-80s	around 1990	mid-90s	around 2000	mid-2000s	Late 2000s
Austria						0.433	0.472
Belgium		0.449		0.472	0.464	0.494	0.469
Czech Republic				0.442	0.472	0.474	0.444
Denmark		0.373	0.396	0.417	0.415	0.417	0.416
Estonia						0.504	0.458
Finland	0.343	0.387		0.479	0.478	0.483	0.465
France		0.380	0.370	0.473	0.490	0.485	0.483
Germany		0.439	0.429	0.459	0.471	0.499	0.504
Greece	0.448	0.426		0.446	0.466	0.454	0.436
Hungary			0.452	0.496	0.463	0.497	0.466
Iceland						0.365	0.382
Ireland							

Appendix C: Gini coefficient, before taxes and transfers.

Country	mid-70s	mid-80s	around 1990	mid-90s	around 2000	mid-2000s	Late 2000s
Italy		0.420	0.437	0.508	0.516	0.557	0.534
Luxembourg		0.383		0.427	0.421	0.454	0.482
Netherlands	0.426	0.473	0.474	0.484	0.424	0.426	0.426
Norway		0.351		0.404	0.426	0.447	0.410
Poland						0.542	0.470
Portugal	0.457		0.436	0.490	0.479	0.542	0.521
Slovak Republic						0.458	0.416
Slovenia						0.452	0.423
Spain							0.461
Sweden	0.389	0.404	0.408	0.438	0.446	0.432	0.426
Switzerland							0.409
United Kingdom	0.338	0.419	0.439	0.453	0.458	0.445	0.456
United States	0.406	0.436	0.450	0.477	0.476	0.486	0.486

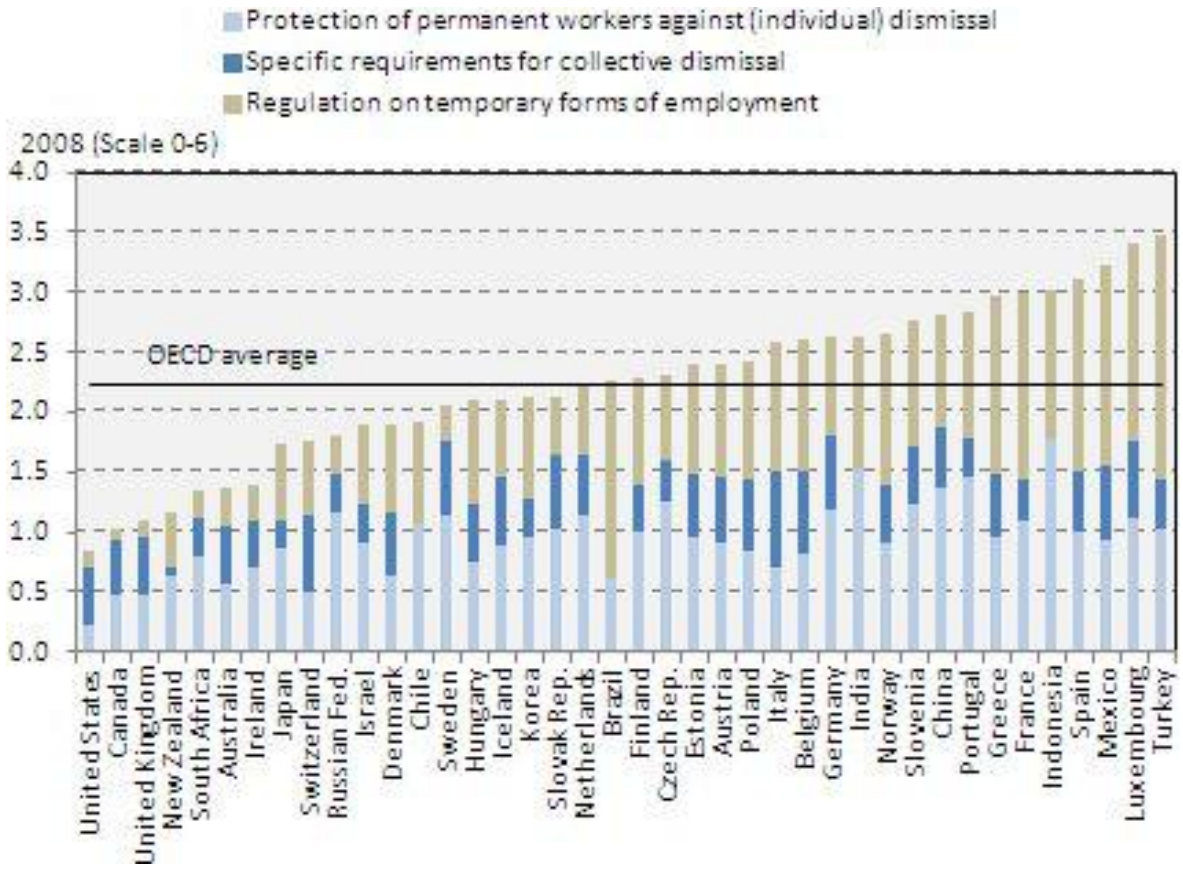
Appendix D: Gini coefficient after taxes and transfers.

Period / Country	mid-70s	mid-80s	around 1990	mid-90s	around 2000	mid-2000s	late-2000s
Austria	..	0.236	..	0.238	0.252	i 0.265	0.261
Belgium	..	0.274	..	i 0.287	0.289	i 0.271	0.259
Canada	0.304	0.293	0.287	0.289	0.318	0.317	0.324
Czech Republic	..	..	0.232	0.257	0.26	0.268	0.256
Denmark	..	0.221	0.226	0.215	0.226	0.232	0.248
Estonia	..	..	..	..	..	0.349	0.315
Finland	0.235	0.209	0	0.218	0.247	0.254	0.259
France	..	0.3	0.29	0.277	0.287	0.288	0.293
Germany i	..	0.251	0.256	i 0.266	0.264	0.285	0.295
Greece	0.413	0.336	..	0.336	0.345	0.321	0.307
Hungary	..	..	0.273	0.294	0.293	0.291	0.272
Iceland	..	..	..	..	..	0.257	0.301
Ireland	..	0.331	..	0.324	0.304	i 0.314	0.293
Italy	..	0.309	0.297	i 0.348	0.343	0.352	0.337
Luxembourg	..	0.247	..	0.259	0.261	0.258	0.288
Netherlands	0.263	0.272	0.292	0.297	i 0.292	0.284	0.294
Norway	..	0.222	..	0.243	0.261	0.276	0.25
Poland	..	..	..	..	0.316	i 0.349	0.305
Portugal	0.354	..	0.329	0.359	0.356	i 0.385	0.353
Slovak Republic	..	..	..	..	..	0.268	0.257
Slovenia	..	..	..	..	..	0.246	0.236
Spain	..	0.371	i 0.337	0.343	0.342	i 0.319	0.317
Sweden	0.212	0.198	0.209	i 0.211	0.243	0.234	0.259
Switzerland	..	..	..	..	0.279	0.276	0.303
United Kingdom	0.268	0.309	0.354	0.336	i 0.352	0.331	0.342
United States	0.316	0.337	0.348	0.361	0.357	0.38	0.378
OECD Total	..	..	..	..	..	0.316	0.314

From: OECD Statistics, 2013.

Appendix E. Employment protection, 2008, OECD and selected non-OECD countries.

Scale from 0 (least stringent) to 6 (most restrictive)



* Data are for 2009 for France and Portugal. OECD average is the unweighted average for the 30 countries that were members of the OECD in 2008.

Previous updates:

Source: OECD, website 2013.