bmwfw
Federal Ministry of
Science, Research and Economy

Investing in Europe's Future

Restarting the Growth Engine

Intangibles and green investments for restarting growth

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Abstract

Economic Growth Theory reveals that long-run growth is primarily dependent on intangible investments in rich countries, no longer on physical investments. A multiplier analysis shows that the short and medium-run demand as well as employment creation is larger for intangibles like education (to a larger extent at the national level, but also at the community level). It therefore makes sense to primarily use the new European Fund for Strategic Investment (EFSI) for innovation, education and green investment to combat climate change. We furthermore propose to complement the new fund by promoting, using and stretching the flexibility clause of the Fiscal Pact for additional expenditures for intangibles (silver bullet proposal). The priority of intangible investments should hold for the EFSI as well as for the national expenditures. This emphasis should not exclude investments in the upgrading of material infrastructure, which closes bottlenecks in energy or railroad nets with high demand and supply effects, but the projects have to be very different from the first round of submissions to the EFSI, which focussed on traditional large transport projects, and included nuclear and coal plants. The upcoming guidelines for the Funds place a higher emphasis on intangibles, but do not exclude traditional physical investments and it has to be expected that national governments and interest groups will heavily lobby for the traditional type of investments which will have a long time lag and low effects on growth and employment.

1. Introduction

Europe is a model of success currently experiencing a midlife crisis. Success can be demonstrated by (i) the number of member countries (and those with the intention of joining or cooperating more closely in the future), (ii) Europe's size in world trade (larger and more stable than that of the US) and (iii) the absence of a current account deficit. The Euro has become a widely accepted currency even if it is under its potential due to a lack of mutually issued debt; its future is no longer in doubt, despite the dire predictions of many US economists. Europe has achieved peace on a once belligerent continent within the current borders of EU28, stimulating the reform of institutions and encouraging potential member countries to engage in a neighbourly dialogue where there had previously been border conflicts.

Indicators for a critical phase of European development today, however, are the low dynamics of the European economy (GDP is not much higher than in 2008), the youth unemployment rate of 20%, inadequate European governance (with national priorities and preferences still overriding community goals), decreased political support, and inroads from both left-wing and right-wing political parties. These frequently cooperate with each other in seeking alternatives to the European project.

Currently there are signs of a weak recovery driven by low oil prices and the Euro. However, the deeper problems have not yet been solved. Europe suffers from (i) a slack in effective demand combined (ii) with the inability to close the technology gap to the US and (iii) a reluctance to use its lead in renewables and energy efficiency to boost growth and exports. At a time of high public debt and the danger of a downward trend in long-term growth in industrialised countries it is important to solve the problems of dynamics, social inclusion and sustainability not individually, but jointly, using a comprehensive strategy. Such a strategy is being developed in the WWWforEurope project by 34 European research institutes. In this paper we concentrate on three instruments to restart growth: the New European Fund for Strategic

Investment (EFSI), the proposal to use and perhaps stretch the limits of the Fiscal Pact to increase specifically important expenditure categories and the use of structural changes within the public sectors to boost employment and growth.

A central hypothesis of this paper is that a given public stimulus of maybe 1 bn Euro will be more effective if public spending were reallocated from tangible to intangible investments. This is specifically the case for Europe, as physical investment relative to GDP is higher in Europe than in the US (15.6% vs. 14.3% in 2014), while Europe lags behind in intangibles (3.7% vs. 5%). This tendency is consistent over time, so that the differences extend to the physical and intangible capital stock.

Section 2 summarizes the theoretical and empirical arguments indicating that the drivers of growth change with rising incomes. Section 3 introduces the silver bullet proposal for using or extending the limits of the Fiscal Pact for growth and employment enhancing expenditures. Section 4 argues that intangible investments are specifically important for Europe and can be combined with green investments as core priorities in the EFSI. Section 5 analyses possibilities for supporting structural change, employment and growth by the public sector without increasing debts and deficits; and this is followed by our conclusion.

Table 1: The share of physical vs. intangible investment in GDP

Remark: Intangible investment: R&D, education (universities), software, patents.
S: Eurostat and WIFO calculations.

	2000		2014	
	Physical	Intangible	Physical	Intangible
USA	17,8	5,1	14,3	5,0
EU-28	18,7	3,4	15,6	3,7
Euro Area	19,6	3,1	15,9	3,6
Germany	19,9	3,1	16,5	3,5
France	17,0	4,4	16,5	5,1
Italy	17,9	2,5	14,2	2,6
Sweden	15,4	6,7	16,8	6,3
Finland	18,6	4,5	15,7	4,3
Austria	22,4	3,3	17,8	4,3
Greece	23,7	1,3	10,1	1,5

2. Growth drivers change with rising per capita income[1]

Growth theory examines which activities determine the long-term growth of an economy (working at full capacity). One of the key results of both theoretical and empirical research in the last decades is that these growth drivers change with rising per capita income. Economic growth depends on natural resources, population growth and basic infrastructure for low-income countries. For medium-income countries, physical investments and secondary education are crucial; in high-income countries, innovation, education and other intangible investments

1 This section was written by Jürgen Janger.

influence long-run growth. This change is reflected in theoretical models and demonstrated in empirical work.

In early neo-classical growth models, the rate of growth of GDP depends on labour, tangible capital accumulation and exogenous technical progress (see, e.g. Solow, 1956). Increased per capita GDP is driven by investments in tangible capital, which exhibit diminishing returns, so that once economies have reached their theoretical equilibrium, the growth rate only depends on exogenously given technical progress. The key »policy« parameter here is the rate of capital accumulation, along with the savings rate, which after the Second World War led to many policies aimed at increasing investment in tangible capital and the savings rate by household, such as the favourable tax treatment of firm investment and the subsidizing of large-scale infrastructure projects, which often failed to ignite growth (Easterly, 2005). Indeed, simple neo-classical growth models fail to explain why the US exhibited higher growth than the EU in the 1990s with its comparatively higher tangible capital-labour ratio and higher savings rate.

A first attempt at enriching the neo-classical growth model with an »intangible« component in the form of accumulation of human capital was made by Mankiw – Romer – Weil (1992). Returns to human capital accumulation do not diminish and in principle can drive long-run growth as long as human capital continues to accumulate. However, their model is also inconsistent with the empirical evidence that the US grew faster than Europe in the 1990s, as the overall US rate of human capital accumulation was not faster than Europe's at that time. The missing factors were finally introduced by endogenous growth theory, which endogenises technical progress in various forms. Romer (1986), for example, models intangible knowledge as a basic form of capital which does not exhibit diminishing returns. Intangible knowledge can grow without bounds, turning the accumulation of »intangible capital« into a driver of long-run growth. In a »Schumpeterian« endogenous growth framework, quality-improving innovations displace old ones, and the economy-wide rate of innovation drives growth through its impact on technical progress (Aghion – Howitt, 2006).

In these frameworks, the growth of per capita GDP is not driven by accumulation of tangible capital – capital deepening – but by the rising efficiency with which capital and human resources are used, which is potentially unlimited, as ideas are non-rivalrous in use. Indeed, empirical contributions show that most of the growth differences between OECD countries are driven by differences in multi-factor productivity, a measure of efficiency or technical progress, and not by differences in the capital-labour ratio: differences in tangible per capita capital do not drive differences in per capita GDP, but investment in intangibles such as R&D and skills do, as these are major determinants of innovation (see, e.g. OECD, 2013; Jones, 2005). To summarize, investment in skills, education and training, as well as in R&D and innovation (which are closely connected, as no innovation can take place without qualified employees), can drive long-run growth and empirically explain growth differences between countries, whereas differences in the level of accumulated tangible capital do not.

However, the caveat is that growth factors are not the same in every country, but depend on the distance to the technological frontier or the stock of globally available technology (Aghion – Howitt, 2006). In advanced countries, firms are at the frontier and can gain competitive advantage mostly through innovation and the creation of new knowledge, as they cannot compete in labour costs with firms from poorer countries, which are further away from the frontier. In the latter, it may be more cost-effective to adopt technologies developed elsewhere. This is often done through investments in new capital such as advanced machinery as a carrier of embodied technical progress. Empirical work shows that in the advanced EU countries, the share of innovating firms – of firms using innovation as a main competitive strategy – is much higher than in catching-up EU countries. For these firms, the main barrier to innovation is not funding for innovative activity, but rather finding appropriately skilled employees, as there is a scarcity of highly-skilled employees (Hölzl – Janger, 2014).

As a result, public policy should not only support investment in intangibles such as R&D and innovation activity, as investment in these

activities tend to be below the socially desirable level due to positive spillovers and difficulties of firms to appropriate the gains from this investment (as ideas can be used over and over, and hence also copied); it should also make sure that educational systems, beginning with early childhood education (as there the effectiveness of public investment is highest, see e.g. Heckman, 2000), are performing well. In addition, for growth in advanced countries, the quality of higher education seems to particularly matter, which would also explain differences in growth rates between the EU and US (Krueger – Kumar, 2004; Vandenbussche – Aghion – Meghir, 2006).

Restarting growth is not only a question of increasing medium and long term growth (or their »potential«), but also a matter of fostering effective demand. While the supply side effect of growth drivers (and specifically intangible investments, innovation and education) only arises in the long run, most types of intangible investments have a strong short-run effect on demand and employment. They are labour-intensive and require low capital and material input (often partly imported from outside of Europe). And while physical investments have a long planning and operation lag (often up to two or more years), intangible investments can be boosted relatively quickly.

3. The silver bullet proposal

The idea and its relevance

Demand slack and distance to the technology frontier requires investment, which however is restricted by the debt and limits of the Fiscal Pact. The answer of the European Commission was to set up a Strategic Investment Fund. It will hopefully become operational in the next months, but given the planning, decision and operation lag it cannot be expected to foster jobs and growth earlier than by the end of 2016 if it focuses on large tangible investment projects. A proposal which could bridge the gap – or amplify its effect in the starting phase –

would be to allow member countries to invest in pre-specified drivers of growth using the inbuilt flexibility (or stretching the limits) of the Fiscal Pact. This would be the case if member countries were allowed to spend more than is allotted for two years by the Fiscal Pact for expenditures specifically relevant for long-term growth and combating climate change on the condition of structural reforms. We call this proposal the »Silver Rule« since it mimics the golden rule in Germany.

Borrowing from Germany's Golden Rule

Public deficits were for a long time correctly assessed as different, whether spent on administration or on enhancing future welfare.[2] This idea was applied decades ago by Germany, where the public sector was allowed to accrue deficits if they were spent for public investment (this was called the »Golden Rule«). It was given up formally in 2009, as infrastructure was generally well developed and theoretical and empirical analyses showed that in rich countries material investment was no longer closely related to growth and employment. The main drivers of growth in industrialized countries are innovation and human capital.

We therefore propose a »Silver Rule« (Aiginger, 2014B), which exempts specifically important, mainly intangible investments from the upper limits of expenditure as defined in the Fiscal Pact. This exemption should be temporary. Furthermore, it should be qualitatively connected to structural reforms and supervised by an independent authority.

More specifically, the European Commission should define five or ten categories of public expenditure, which (i) are specifically important for growth in the long run (expenditures with investment characteristics), (ii) which have high multiplier effects in the short run, (iii) which increases energy efficiency or foster renewable energy. Such categories could be research and education, early childhood investment,

2 Marterbauer (2014); Monti (2012); Truger (2015).

infrastructure maintenance, the upgrading or refurbishment of homes and offices, the reduction of bottlenecks in energy and broadband grids, renewables, and start-up centres, to name but a few.

We propose that **increases** in public expenditures in these predefined categories of up to 1% of GDP be allowed outside the deficit limit defined in the fiscal pact for 2015, 2016 or 2017. Countries have to commit to reform projects in their economy (from product market reforms to reforms in the structure of public expenditures, taxes, pensions, etc.).

While the categories of intangible investments eligible for this exemption are decided by the Commission, the adherence is controlled by independent authorities (e.g. the courts of audit of another member).

Relation to alternatives

This proposal is similar to the Golden Rule, but it first refers to the **increase** in expenditures, and, second, **mainly to intangible** investments. Some categories contain a mix of tangible and intangible investment, but all refer to reducing bottlenecks and upgrading structures, rather than building up systems from scratch.

Countries can decide on their priorities within the given categories, but all of them should contribute to European growth in the short and long run.[3]

It is possible to enact this proposal within the Fiscal Pact using its built-in flexibility clause. But the use of this flexibility clause has to be made more popular by the European Commission. This could be done if »country-specific recommendations« within the European Semester explicitly encourage countries to use this instrument for specifically important investments in future growth (a chance forgiven this year).

3 A disadvantage of a proposal focussing on a large share of wages could be that some expenditures only make sense if they continue beyond 2016 (new teachers, retraining). This should be possible within the limits of the Pact after two years, if traditional expenditures have been cut.

Bridging the gap to recovery

A recent communication of the European Commission concerning the »flexibility of the Stability and Growth Pact« shows that the proposal is in principle compatible with the Fiscal pact. It makes a case for an increase in public spending on intangible investments: The »structural reform clause« would allow for an incremental increase of deficits of up to 0.5% of GDP for »major structural reforms which have direct long-term positive budgetary effects, including by raising potential sustainable growth« (European Commission, 2015, p. 9). Typical (tangible) public investment projects like road or tunnel construction, while boosting current investment demand, lack the feature of being »structural reforms«. One such »major structural reform« could be energy transition. It not only requires substantial upfront investment, which is good for the badly needed demand impulse to the economy, but it also lays the ground for higher »potential sustainable growth«. Another reform might be improving of railroad interconnectivity and comfort, with the goal of changing transportation structures in the economy from road-dominated to rail-oriented. A third array of reform could be expanding early child care in some countries (which would boost current demand by hiring new staff and, hence, increasing the public wage bill). This raises the female participation rate, a channel which is also explicitly mentioned in the Commission paper (»higher potential output« by »increased labour force«, p. 10).

If the additional fiscal space of 0.5% of GDP given by the »structural reform clause« is fully exploited by member states, and if it is complemented by tax reductions so that over-indebted households can increase their spending, we think this can add an additional 1% or even more to annual GDP growth in the short run, since fiscal multipliers would be large. A weakness of the structural reform clause is that it only allows additional deficits if the overall deficit of a country is below 3% of GDP.

Thus, while the »silver bullet proposal« is partly possible within the fiscal pact, it stretches its limits. First, the scope is somewhat larger and there should be a way to apply it in countries with deficits larger

than 3%. This is specifically important, since in these countries the demand slack is often very large and there is an urgent need to upgrade technology and modernise the manufacturing sectors. In these cases, in the last years the European Commission has shifted the deadlines for lowering deficits on a year-by-year basis. This is necessary, but could be conditioned on important future-oriented investment and the creation of new firms (not on cutting wages for employees with already low incomes).

4. The new European Fund for Strategic Investment

The European Commission correctly analysed the slack of aggregate demand in Europe and set up a fund which should boost private and public investment in Europe[4]. This is in principle a good idea, given that interest rates are lower if investments are bundled and many private investors are looking for investment opportunities.

Focus on intangibles needed

It is, however, all-important that the stimulated investments remain in line with the three priorities:

- Raising short and medium term demand and employment in Europe
- Closing Europe's distance to the innovation and technology frontier
- Supporting Europe's lead in renewable energy, energy efficiency and green investment

Measured as a share of total investment, Europe spends 19% on intangibles, compared to 26% in the US. Only Sweden has a higher

4 Juncker (2014).

share than the US, while Germany and Austria have only 17.5% and 19.6% respectively, Italy 15% and Greece 13%.[5]

Table 2: The share of intangible investment in total investment

Remark: Intangible investment: R&D, education (universities), software, patents.
S: Eurostat and WIFO calculations.

	2000	2014
USA	22,1	25,8
EU-28	15,2	19,4
Euro Area	13,8	18,7
Germany	13,7	17,5
France	20,6	23,9
Italy	12,1	15,4
Sweden	30,2	27,3
Finland	19,4	21,5
Austria	12,9	19,6
Greece	5,1	12,9

Another important argument for restarting growth via intangible investments is that these have larger short and medium-term demand effects as well employment effects. Investment expenditures on physical investment of 1 bn € result in an increase in GDP of 1.460 bn in the short run and 2.420 bn € in the medium run. For education expenditures, the same amount of spending increases GDP by 1.800 bn € in the short run and 2.720 bn € in the medium run, while for R&D the multipliers are 1.64 and 2.61 respectively. The short-term employment effect is also highest for education, with an increase of 37,000 employees in the short run and 54,000 in the medium run (compared to effects of 27,000 and 45,000 for physical investment). These differences apply to the EU 27, while for a specific country like Austria the differences are even larger (about 50%).

5 The average share of total investment (1995-2014) in Europe according to the new SNA (System of National Accounts) is 23%.

Table 3: The impact of physical vs. intangible investment (1 mill €) on GDP and employment

Assumption: 1 mio € expenditures
Short run: reaction of intermediate demand and private consumption
Medium run: including the additional reaction of business investment
Calculation: Gerhard Streicher, WIFO, using Fidelio Model.

	Value added		Employment	
	Short run	Medium run	Short run	Medium run
	Multiplier		In Thousand	
EU-27				
Physical investment	1,46	2,42	27	45
Education	1,80	2,72	37	54
R&D	1,64	2,61	27	45
Austria				
Physical investment	0,85	1,08	13	16
Education	1,47	1,77	25	29
R&D	1,12	1,39	20	24

To focus the EFSI on intangibles will not be an easy task. Soon after the announcement of the new fund, member countries submitted projects of more than 1000 bn € (many of which were projects that had been declined in the past). Two thirds of the submitted investment projects referred to physical investment in transport and large energy plants, and one third involved knowledge and digital agendas, social infrastructure and resources, and the environment. The commission then set up a list of priorities, which should shift the content of the proposals, but still contains categories like »traffic«, which may lead to large physical investment[6]. Of course, physical investment of high value added (such as closing bottlenecks in networks) or shifting traffic

6 Main points should be investment into infrastructure, specifically broadband and energy nets, traffic infrastructure in industrial centres, education, research and development, renewable energy, small and medium-sized industries specifically mid-cap firms (European Commission, press release_ip-14-2128, 26.11.2014).

from roads to railways should not be excluded, but the fund should not be dominated by highways and large energy projects which need large subsidies (nuclear plant) or which decelerates the switch to renewables (coal plant). The categories proposed for the silver bullet should indicate the direction of investments to be prioritized by the EFSI.

Bridging the difference between silver bullet and golden rule

The extended new definition of gross investments by revised »System of National Accounts« (SNA 2008) offers a bridge between the golden and the silver rule. Truger (2015) presents a modified golden rule starting with the wider definition of investment including innovation, patents, software and education expenditures by universities, but deducting military expenditures«. He also considers – in a second step – to include expenditures on education and additionally to limit the exemption to 1% or 1½% of GDP. If this is done his proposal is not so far from the silver rule in which we start from innovation, education, and add green investment, energy efficiency, broadband and specific other investment to close bottlenecks.

Analysing the first proposal for the EFSI, it seems important to exclude large traffic projects (highways, tunnels, nuclear plants and coal plants) explicitly not only military expenditures. It is important that not too much money is invested into traditional transport systems and deceleration of energy transition.[7]

7 For instruments to foster intangible investment see Ebner et al. (2015).

5. Structure matters – more than aggregates[8]

Large public deficits and debts will limit the aggregate net demand stemming from the public sector over the next 5–10 years at the least. But there can be a substantial impact of government on long-term dynamics as well as short-run demand if taxes are shifted towards more growth and employment-friendly measures, and by shifting expenditures towards growth drivers and labour-intensive expenditures. Given that government expenditures amount to 40% or more of GDP in Europe, the effects of structural shifts may be more important than the balances. New priorities like ecological sustainability or social investment also have to be financed or supported by shifts in public expenditures and taxes.

Large and inefficient public sector, and lack of will

The public sector in Europe is quantitatively large, but surprisingly inefficient. On average, among the member countries close to 50% of GDP is absorbed by three to four layers of government expenditures (from local to European) without eliminating differences in gender, parental position and income, education or the distribution of life chances. The innovation effort is low in most countries, falling below national as well as EU targets. The direction of technical progress is unfavourable, as it is labour-saving instead of resource-saving, thus raising unemployment and limiting energy decoupling. This tendency is shared by other countries, but the situation has not changed since the EU roadmap defined its goal of reducing emissions by 80 to 95% of the current level by 2050, or since youth unemployment doubled. In many parts of Europe the quality of education is mediocre (even in large countries like Germany, France, Italy and Spain), and the support for entrepreneurship, mobility, social innovation and the enhancement of life chances is inadequate.

8 This part draws on a presentation (Aiginger, 2015) at the INET Conference 2015.

Lack of finance is less important than lack of political will. At both the national and European level it is often argued that there is a lack of finance. This is in reality not the case, since interest rates are very low, specifically if offered with a joint European guarantee.

- Europe currently probably spends more on subsidies for fossil energy (an estimated 100 bn Euro) than on subsidies for renewables. Specifically in times of low oil prices, the subsidies for coal and oil could be curbed without social costs.[9]
- Europe spends more on 28 military systems (inadequate for any challenge outside of Europe) than Russia and China together (with very high expenditures in high-deficit countries like France and Greece).
- Europe spends the largest single share of the EU budget on subsidies for big agricultural units (specifically on that pillar which does not prioritize organic agriculture).
- Europe allows tax evasion for firms and forfeits an adequate tax on financial speculation.

Taking these four sources together, depending on the time horizon and ambitions between 100 and 200 bn funds can become available. They can be used to reduce distorting taxes, reduce budget deficits or increase spending on growth and employment.

Taxing the wrong activities and »forgetting« own targets

The tax system makes positive activities like employment and the creation of jobs expensive. European countries are unable or unwilling to tax public bads such as emissions, resource consumption, fossil energy, tobacco, kerosene or pollution resulting from traffic. The ability to tax wealth and inherited income is very low due to the insufficient transparency of capital flows, profit shifting, and tax exceptions favouring mobile capital. If banks are regulated (or overregulated in many details)

9 Coady et al. (2015).

it is easy to switch money to non-banks or to offshores. Tax evasion and tax fraud seems to be an accepted activity of successful firms, managers and innovators in a system of big government, bureaucracy and over-taxation (a tendency which is currently slightly changing). Labour is taxed, while financial speculation is not (if anything, a stamp duty on new shares seems realistic ten years after the start of the Financial Crisis, which would place a new burden on the real economy).

The discussion on austerity attracts much attention, but Europe is currently overspending for past priorities and particular interests, implying a shortage of funds for future investments, new firms and jobs. A corollary of this is the inability to stick to strategic goals, such as those anchored in the EU 2020 strategy or the 2050 energy roadmap. The EU 2020 midterm review has shown that employment goals, R&D targets and poverty goals have been widely missed and environmental goals which were set without ambition (e.g. in relation to the energy roadmap 2050) have only been attained due to stagnant or respectively declining GDP (Aiginger, 2014A). On top of this, there has not been much concern about missing the strategy goals. If many European countries still face high fiscal deficits or debt has even increased relative to GDP, this is more the consequence of low growth, wrong taxation and inefficient bureaucracies, than of radical public austerity.

Lack of private demand and asymmetrical application of structural reforms

The quest for so-called »structural reforms« is adequate in principle, but the term has been hijacked by a specific conservative agenda. Structural reforms which activate labour supply and remove particular interests or entry barriers for new firms are fine, but in practice the call for structural reforms is used to exert downward pressure on labour costs, specifically in the segment of already low wages. The discrepancy between high and low incomes has thus widened, and those wages which already lag below productivity have been further dampened. Wage increases have been criticized in the European Semester, and wages

below the productivity increase have been overlooked. These tendencies additionally reduce consumption at a time when firms are reluctant to invest their profits and business becomes a net saver. It is known that the benefits of structural reforms for the labour market occur in the long run and materialize during good times (such as the benefits of Germany's Hartz 4, ten years after creating a low-wage sector and after Germany was labelled the »dead man of Europe«). Asymmetrical calls for structural reforms (leaving aside those leading to high incomes and super-normal profits in regulated businesses) reduce aggregate demand and employment during bad times.

The question which component of aggregate demand should rise after the Financial Crisis was constantly ignored; austerity as defined by low public deficits is the minor part of demand inefficiency (and difficult to tackle if the good times have not delivered budget surpluses and the government share has already approached 50% of GDP). If consumption decreases due to low wage increases (and decreasing real wage after tax and inflation), and if large firms do not use their profits for investments but become net creditors, and small and young firms are credit squeezed since the financial sectors wants to reduce risk, private demand will not rise. Firms and investors will become pessimistic about future growth. In this case, reducing product market incentives and creating incentives for business start-ups and innovation, including those in renewable energy and energy efficiency with higher standards, could help.

Therefore, Europe faces »private austerity« in the sense of lacking the potential – due to old debt – or the willingness to increase private consumption and private investment. Matching it by increasing export (surpluses) is limited for extra-European exports (increasing intra-European exports is infeasible as a national strategy for all members). To compensate lack of private demand with the traditional strategy of increasing public deficits and the size of the public sector is the wrong path to take, as government is already large and its increase would further boost inefficiencies, leading to higher taxes and lower investment and consumption (without radical structural policies, very different from those known in the past).

Only »high road« competitiveness is feasible for Europe

Europe's chance is to intentionally take a »high road to competitiveness« (Aiginger – Bärenthaler-Sieber – Vogel, 2013). A low road approach, consisting of depressing wages and reducing other costs, including social and environmental standards, or opening a second labour market is not feasible for a high-wage region surrounded by neighbours with low wages, an abundant work force and own efforts to catch up with richer countries via an export-led strategy. The only feasible path for Europe is a »high road strategy« .

Aiginger – Bärenthaler-Sieber – Vogel define five »capabilities« as drivers of success on a high road path: education, innovation, institutions, an activating social policy, and ecological ambition. And the outcome or performance of an economy is not measured by the export surplus, but by the attainment of a set of economic, social and ecological goals. This radically changes the content of the term »competitiveness« from price (or cost) competitiveness to the **»ability of a region to provide Beyond GDP goals«**. This redefinition may appear to be only of academic interest, but in fact a well-defined concept of high road competitiveness constitutes a game changer from an inadequate, past-facing strategy to a future-oriented one. A complement of this game-changing perspective is to define industrial policy as a policy that supports high road competitiveness and to call for a »systemic« industrial policy intertwined with innovation and education policy.[10] High energy costs (of Europe relative to the US) can be compensated with increased energy efficiency (with existing differences of 3:1 across industrialised countries), and the substitution of coal, oil and gas imports with renewables can help balance current accounts.

Going for a »high road« holds with a slightly different perspective and the specific reform needs of Southern and Eastern Europe. Of

10 For definitions for a new industrial policy see Aghion – Boulanger Cohen (2011); Rodrik (2013); Aiginger (2015).

course, countries with large deficits in current accounts have to reduce costs. But the real problem lies in »costs per unit of output« and these can be corrected through increased productivity, technology transfer and the fostering of new firms at least as easily as through a cumulative downward strategy of lowering labour costs.[11]

6. Embedding changes in a strategy

Towards a coherent strategy based on a long-term vision

This is a decisive phase for the European project in six dimensions: (i) economically; if Europe will not take part in this upcoming business cycle a lost decade will be completed; (ii) to cope with internal disequilibria: Southern Europe, including France and Italy, needs a stronger productive base, as well as new industries and services for exports; (iii) social acceptance; youth unemployment and the income spread have to be reduced; (iv) peace in the neighbourhood: from Ukraine to North Africa, political destabilization and economic problems have enforced each other; (v) technologically; Europe has to close the technological gap to the US, from ICT to biotechnology; (vi) Europe has a final chance to extend its first-mover advantage in renewables, energy efficiency, new car engines and other industries that can help limit climate warming to 2 degrees.

If Europe tries to solve these problems in an isolated way, there will be not enough funding to tackle them (given the unwillingness to make the changes in the public budgets delineated above), and there will be little chance to agree on measures across Europe. However, if the problems are addressed in a strategy that starts from a vision and develops synergies, different goals can be attained simultaneously.

11 It was essentially the problem leading to the crisis, which Southern European countries remained in a competitive position adequate for the pre-globalisation area. Southern Europe should have climbed up the quality ladder to a medium income position, defendable if new low cost competitors came up.

Such a strategy is currently being developed in the project »A new growth path for Europe« by 33 European research institutions under the lead of the Austrian Institute of Economic Research (WIFO; see www.foreurope.eu). Its constituent strategy lines are:

- Stronger dynamics based on innovation and skills, measured by Beyond GDP goals
- Fewer differences in income, higher employment
- Europe as a world leader in environmental technology and renewables
- A stable financial sector, regulation, financial transaction tax, reduced taxes on labour
- Open area, enjoying globalisation/heterogeneity, inviting neighbours

This vision originates from goals, rather than problems (Aiginger et al., 2014). The consolidation of budgets and the lowering of debt are a necessary long-term side condition. The main goal, however, is **balanced economic dynamics**, which links increased consumption and investment with respect for the limits of the planet and the equalisation of life chances across regions and persons.

Taxing financial transactions and public bads, zero tolerance of tax evasion and much lower taxes on labour are integral parts of the strategy, acknowledging that income distribution matters for growth and stability. Other aspects of the strategy focus on the quality of opportunities and life chances, capabilities, institutions, dialogue and democratic discourse, as well as the tolerance of heterogeneity and its transformation into a productive force. A deep and absolute decoupling of energy consumption from the use of resources is necessary (this implies 80% to 90% CO_2, doubling energy efficiency, 50% share of renewables redirecting technical progress from labour savings to energy and resource savings).

Europe will overcome its midlife crisis if the public sector is streamlined and reoriented towards the future, if taxes and incentives are used to support employment and growth, and if Europe invests in its own model of a socially cohesive and ecologically sustainable economy

instead of mimicking the US or the Asian model. Europe needs to lead as well as learn from its neighbours to play a decisive role in the globalized economy of 2050.

Going for ecological excellence and reducing youth unemployment along with the spread of income and wealth are not blockers of dynamics, but are – if embedded in a strategy – drivers of change, innovation and dynamics. This specifically holds for Europe, as these societal goals fit the European model better than the alternatives. The goal of becoming a world leader in renewable technologies is part of the program of the New Commission. The current low oil prices should be used for a substantial reduction in subsidies for fossil energy and the rebuilding of emissions trading. The pending trade agreements inter alia between Europe and the US (TTIP) and the upcoming climate conferences should be used to coordinate efforts to limit global emissions, build up a new, cleaner industry (industry 4.0), tax kerosene (while reducing taxes on labour), and develop an industrial policy favouring societal goals. The technology policy should improve resource and energy productivity (not so much labour productivity, as is done today[12]). Europe is currently building the new infrastructure for 2050 and developing traffic systems and car engines for 2050. The infrastructure built today will determine the feasibility and costs of reducing emissions to 10% of the current level in Europe, as planned in the Energy Roadmap 2050.

7. Conclusion

European growth is low, first, because of lacking aggregate demand, second, because of its persistent distance to the technology frontier and, third, due to its reluctance to build on and extend its lead in renewable energies and energy efficiency. It is not using and improving

12 »Biasing« technological progress towards increasing resource and energy productivity faster than labour productivity should be easy given the strong government inference in innovation policy and high taxes in Europe in specific.

its social model as a unifying force and role model for its neighbours. Europe's GDP is still not higher than it was at the start of the Financial Crisis, even if low oil prices and the currency value are leading to some growth in 2015. Most indicators show an increasing disparity of incomes (regionally and personally). The midterm review of the Europe 2020 strategy has revealed disappointing results with respect to employment, R&D and poverty goals, and developments in direction of the Europe's Energy Roadmap 2050 are much too slow.

In such a situation it makes sense to use all existing policy measures to stimulate growth (Aiginger–Glocker, 2014). In this paper we primarily discuss the plans to boost public investment via a Strategic European Investment Fund and the proposal to allow national governments to increase specific expenditures using (or stretching) the built-in flexibility of the current Fiscal Pact. Finally we suggest that the public sector should shift its taxes as well as its expenditures to stimulate growth and employment.

In all three cases, we argue that Europe should not invest in past priorities, but in investment and expenditures specifically important for long-term growth and Beyond GDP priorities. Such categories could be research and education, early childhood investment, infrastructure maintenance and upgrading, the refurbishment of homes and offices, the removal of bottlenecks in energy and broadband grids, increased use of renewable energy and energy efficiency, and start-up centres.

The case for these expenditures – many of which are intangible investments – rests on the following observations:

- Growth theory tells us, that innovation and education are the most important determinants of growth in rich countries. Physical investments determine the growth and competiveness of medium-income countries. Immaterial investments are also closely connected to Beyond GDP goals, the measure of welfare suggested to substitute GDP in many studies.
- Intangible investments are quicker to implement and they have a larger short-run employment effect due to higher labour intensity.

This specifically holds for the national level but also applies to the community level (where multipliers are larger and more similar across expenditure categories). We estimate that physical investments of 1 mio € result in an increase in employment of 27000 employees in the short run and 37000 for education expenditures for Europe. For a small country like Austria the employment-creating effect of expenditures in education is double that of physical investment (25000 vs. 13000)

- Europe has a specific gap in intangibles. The share of physical investment in GDP is higher than in the US (15.6% vs. 14.3%), and the share of intangibles is one quarter lower (3.7% vs. 5.0%).
- Green technologies, renewable energy and energy efficiency are essential for Europe to contribute to goals limiting climate warming at 2 degrees. Green technologies are among the few technologies in which Europe has a chance to maintain and enlarge its technology leader position. They offer opportunities for technology diffusion, exports and employment, and the European Commission has rightly set the goal that Europe should claim the no 1 position in renewables.

Public deficits and already-high shares of government and ageing will dominate European policy for a long time. In this situation, it is essential that all goals – long-run growth, short-run employment stimulus, ecological sustainability, social inclusion – be incorporated into an integrated strategy and not tackled in separated, individual policies. Such a strategy is being derived in WWWforEurope by 34 research institutions, and in »Österreich 2025« for Austria by WIFO. The public sector itself can contribute to such strategies by restructuring taxes and expenditures without additional deficits. Taxes on labour can be lowered, while those on activities contributing to future expenditure reductions can be increased. Public expenditures, which amount to 50% in most European economies, can be more efficiently used to create employment, create firms, increase social and ecological investment, and restart growth.

The new European Fund for Strategic Investment is a promising instrument for reducing the slack in effective demand. It is our recommendation to encourage member countries to use the built-in flexibility of the Fiscal Pact for expenditures that have a high effect on long-run growth as well as a substantial short and medium employment effects, but this has to be combined with reforms and budget discipline in other categories. Intangible investments are lower in Europe than in the US, they have higher growth and employment effects and they can additionally reduce emissions (if they are energy-saving) and inequality (if they contribute to reducing differences in life chances).

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Annex

Figure A1: Current account balance

Percent of GDP

Including Intratrade. | Source: European Commission, OECD.

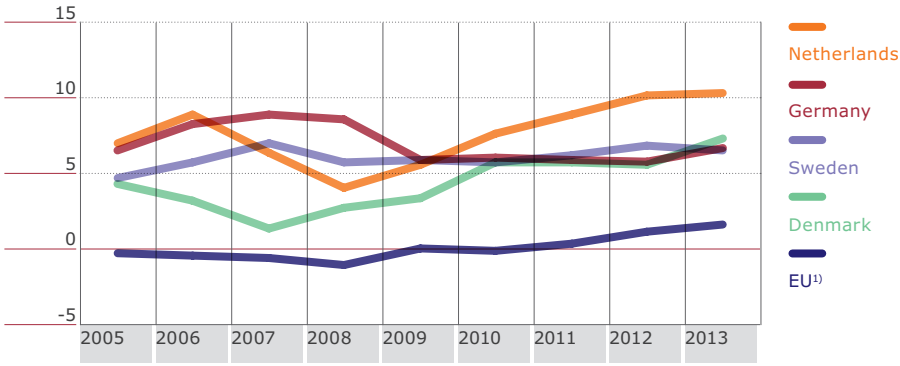

Figure A2: Financial balance of corporations[1)]

Percent of GDP

1) Excluding financial corporation. | Source: Eurostat.

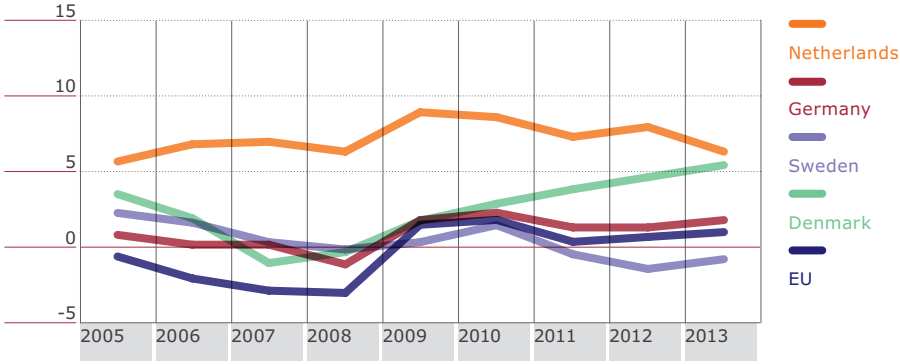

Figure A3: General government balance (deficits)

Percent of GDP

Source: European Commission (AMECO).

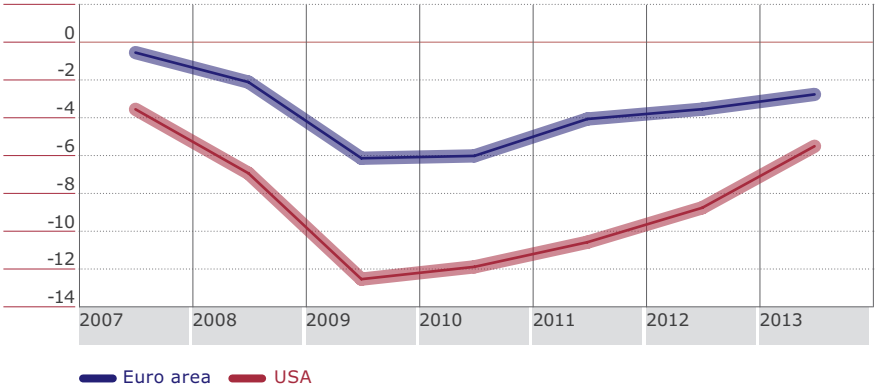

Figure A4: Government expenditures

Percent of GDP

Source: European Commission (AMECO).