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Investment-led growth: A solution to the European crisis

Giovanni Cozzi
University of Greenwich

And

Stephany Griffith-Jones
IPD, Columbia University

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Abstract: A major plank for both recovery of the European economy and for its structural transformation is a significant increase in investment, particularly if linked to innovation. Higher investment can accelerate recovery in the short-term, by contributing to expand aggregate demand, but is as-or more important for increasing the future output and structural transformation. In this paper, we argue that for a significant increase in European Investment to occur, it is necessary to have a two pronged approach. One is to use regional and national development banks and national development banks to help catalyse investment. The other is to reduce the pace of fiscal consolidation, so that public investment does not continue to fall. Using the Cambridge Alphametric Model (CAM) we compare and contrast an austerity scenario, which project current austerity trends in Europe till 2025, with an 'investment-focused' scenario where investment rates are increases further in the context of an expansion in lending by both the European Investment Bank (EIB) and national development banks, and at the same time governments pursue more expansionary fiscal policies in order to stimulate investment and economic growth further. Our analysis gives a strong illustration of the positive role that development banks can and do play in helping economic recovery after crisis and in achieving structural transformation.

Keywords: development banks, investment, fiscal policies, innovation, structural transformation

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Corresponding Author: Giovanni Cozzi. Department of International Business and Economics, University of Greenwich, Old Royal Naval College, 30 Park Row, London SE10 9LS, email: g.cozzi@greenwich.ac.uk

I Introduction

A well-functioning financial sector, both national and international, needs to play important roles to achieve the aims of sustained and inclusive growth, particularly through the funding of investment.

To achieve this key positive role, the financial sector needs to encourage and mobilise savings, intermediate these savings at low cost, ensure savings are channelled into efficient investment, including in innovation and structural change, as well as helping manage the risks for individuals and enterprises. Because the financial sector has such important effects throughout the economy it also needs to adhere to a key principle of the Hippocratic oath that medical doctors swear to, which is to do no harm to the rest of the economy. Therefore there should be as few and as small crises that stem from the financial sector, as these have huge costs, both fiscal and on growth, employment and investment.

In recent decades the private financial system has not performed any of these functions well. It has created risk, instead of managing it, leading to many major crises. It has been deeply pro-cyclical in that it tends to over-lend in boom times, and ration credit during – and long after-crises, limiting both working capital and long term finance crucial for investment. In both tranquil, but even more in turbulent times, it has not funded sufficiently the long-term investment in innovation and skills which businesses need to grow and create jobs; key sectors like infrastructure, renewable energy and energy efficiency have also been insufficiently funded.

In the European Union, and particularly in the Eurozone, an already relatively low level of private investment pre-crisis has fallen further since the beginning of the Eurozone crisis. Particularly dramatic has been the decline in Investment to GDP in the South Eurozone, from 21.7% in 2007 to only 14.5% in 2012; in the UK, the fall is also sharp from

15.9% in 2007 to a really low level, of 11.0% in 2012. There is a growing consensus that a major plank for both recovery of the European economy and for its structural transformation is a significant increase in investment, particularly if linked to innovation. Higher investment thus accelerates recovery in the short-term, by contributing to expand aggregate demand, but is as-or more important-for increasing future output and structural transformation. The so-called Juncker Plan, as well as more ambitious versions to stimulate investment, are key elements of such an attempt at policy change in the European Union.

In this paper we would like to strongly argue that for a significant increase in European investment to occur, it is necessary to have a two pronged approach. One is to use both the regional development bank of the EU, the European Investment Bank (EIB) and national development banks to help catalyse especially private investment; the other is to reduce the pace of fiscal consolidation, so that public investment does not continue to fall. Indeed, as we show in our simulations, it is the combined impact of public and private investment that will lead to sufficient total investment in Europe. If a greater role for EIB and national development bank lending (eg through the Juncker Plan) is not accompanied by at least maintaining levels of public investment, private investment will not be enough to do the job. Indeed private investment could be discouraged by lack of public investment; especially in times of very slow growth, there is strong evidence that public investment crowds in private investment.

In what follows we turn to the important role that public development banks can play in Europe and globally, and then focus on how best to use them in a European context.

Indeed, the problems with the private financial sector outlined briefly above have increasingly drawn attention to the positive role that effective public development banks can play. In recent years, the valuable role that national, regional and multilateral development banks can and often do play received recognition in wider and ever-growing circles. The

positive role these banks have played in providing counter-cyclical finance as private credit in, and flows to, developing countries collapsed during the North Atlantic crisis which started in 2007, is widely seen as valuable. Furthermore, the greater need for instruments to implement more long term national or regional development strategies has been increasingly recognized. This coincides with growing recognition of the value of a modern "industrial policy" and the importance of an "entrepreneurial State", that encourages and leads, providing the vision and the dynamic push for private innovation and structural transformation, as powerfully argued in Mazzucato, 2013. Stiglitz and Greenwald (2014) add a complementary dimension,- that successful and sustained growth requires the creation of a learning society and a knowledge economy to increase productivity; good public development banks cn be an important institutional vehicle for supporting this. Indeed, development banks can help overcome limitations in both financial and knowledge private markets simultaneously. Going well beyond this, effective development banks can help generate and support a positive agenda for innovation in the broadest sense, to include new sectors, products, methods of production, etc that will generate future growth and higher productivity.

The value of development banks, at a multilateral, regional, and national level, to help implement and finance development strategies and visions (by funding both the public and private sector) has thus received greater support. It is also interesting that the role of development banks has not just been highlighted as important in developing and emerging economies, but also increasingly in developed ones, and especially in Europe. Thus the European Investment Bank-the bank of the European Union member states- has played a prominent role in the provision of long term lending during and after the European debt crisis, as private lending fell. Since its creation in 1956, the EIB, and EU Structural Funds, had provided significant funding for the inter-connection of national infrastructure on a massive scale, to support the creation of the Common Market and to reduce economic divergence between poorer and richer regions (see Griffith-Jones et al., 2006). More recently,

it is engaged in helping fund the creation of a "smart" intra-European electricity grid, to facilitate transmission of renewable energy. Indeed, the key challenge, especially in the European Union, is not just to invest more in infrastructure, but to invest in the right type of infrastructure, that is one that minimizes carbon impact in different dimensions; this implies choosing the right type of new infrastructure, giving priority to renewable energy and investing in energy efficiency.

The doubling of its' paid-in capital in 2012 allowed the EIB to expand its lending significantly; furthermore the EIB, and linked mechanisms to it, will play a very big role in the implementation of the Juncker Plan or more ambitious versions of it, as discussed below.
At a national European level, Germany's public development bank, KFW, now the second largest commercial German bank, has played a very positive role in increasing lending counter-cyclically -for example to SMEs-, during the crisis, as well as funding on a significant scale key sectors-such as investment in renewables and for innovation more broadly. In Europe these actions are perceived and highlighted as a valuable model for other countries. France has just created a new public development bank; and the United Kingdom is contemplating the creation of a similar institution.

The favourable experience of many development banks in emerging economies, such as BNDES in Brazil, and CAF in the Andean region, spreading increasingly in Latin America, are very important, as are positive Asian experiences, as in China, South Korea and India, which have had effective development banks. BNDES for example has taken important risks in financing important new sectors, like biotechnology and renewable energy. Furthermore, countries like Chile have in the past used their development banks for promoting and funding private investment in sectors, such as for example massive expansion of forestry in Chile, that generated major exports of paper and cellulose, as well as wood. In all these experiences, development banks have pioneered investment in new sectors and new

technologies, following national or regional priorities, defined by government often in consultation with the private sector.

The next section (II) will elaborate more the analytical reasons why development banks need to play a bigger role in developing, emerging and developed economies.

In section III we make specific proposals on how the major EU development bank, the European Investment Bank, (EIB) has and can further expand its lending significantly, in ways that will make a meaningful contribution to growth, investment and innovation, particularly in the countries, whose economies and citizens have suffered most from the sovereign debt crisis; this will help deal with the clear fragmentation of banking and financial and banking markets, which emerged in Europe since the crisis, which implies that in the periphery, enterprises are extremely credit rationed.

After outlining in some detail the type of measures that can be taken, as well as their scale, we model the likely impact on GDP, investment and employment, which would be significant. Using the Cambridge-Alphametric Model (CAM) we compare and contrast two alternative scenarios for Europe. In the first, we assume the continuation of current austerity policies and that private investment increases as a result of the implementation of the Juncker plan. We compare and contrast this scenario with an 'investment-focused' scenario where investment rates are increased further in the context of an expansion in lending by both EIB and national development banks, and at the same time governments pursue more expansionary fiscal policies in order to stimulate investment and economic growth further.

Our analysis gives a strong illustration of the positive role that development banks can and do play, both in helping economies recover after crises, and doing so by funding investment which will lead to long term transformation and innovation. One important advantage of this approach, that we will highlight, is that with fairly limited public resources,

a very large impact can be achieved, due to leverage. Indeed, in this and other cases, public development banks have the advantage that they can leverage public resources, as they fund their loans by bonds issued in the private capital markets, as well as co-financing with private banks and/or private investors. The contribution of public resources is mainly through an increase in paid-in capital.

European leaders, in a visionary move doubled paid-in capital of the EIB by Euro 10 billion in 2012, which is facilitation at least an additional EIB lending of Euro 60 billion, and a total additional lending of at least Euro 120 billion, as the EIB requires 50% of co-financing with its loans. Our proposal is that they increase paid-in capital by a further Euro 10 billion, which will facilitate at least additional similar amounts, facilitating an important increase in private investment. Together with a less austere fiscal policy that does not allow public investment to fall, our simulations show an additional 5 million much needed jobs can be created in the European Union.

II The analytical case for good development banks

II.1 Theoretical framework

Despite its size and importance to the economies, surprisingly little academic research has been conducted on the role of, and the rationale for, development banks. The discussion needs to be placed in the context of the broader debate on the desirable nature and structure of the financial sector.

In the three decades after World War II, it could be argued that the financial sector functioned quite well both in developing and developed countries. National and multilateral

development banks were created and performed, and were broadly seen to perform, valuable roles. Private domestic financial sectors were relatively small and fairly tightly regulated. However, there were policy concerns that "financially repressed" systems, as they were then called were inefficient. From a theoretical perspective, the idea that "financial markets were efficient" encouraged financial liberalization, with light or no regulation (Gurley and Shaw 1955, McKinnon 1973). This process was followed by frequent and costly crises. Diaz Alejandro (1985) perceptively synthetized this early on as: "Good-bye financial repression, hello financial crisis". Within the efficient financial market school, the existence of public financial institutions, such as development banks, was –almost by definition- seen as negative. As a consequence, development banks were criticized -fairly and unfairly- and their role was reduced sharply in many countries.

An alternative approach emphasized credit rationing, which describes a situation in which, even when agents are willing to pay a higher interest rate to get the funds to finance their investments, banks may refuse financing. In this perspective, the approach of credit rationing justifies the existence of development banks, which would supply the necessary credit to investment, unavailable in the private financing system.

A first important approach is associated to the theory of market failures (Stiglitz and Weiss, 1981; Stiglitz.1990). Credit rationing occurs due to a malfunction of the financial markets, caused by imperfect information or information asymmetry, which prevents financial market to function efficiently. If borrowers have more information on the expected return of their projects than the lenders, there is a greater demand for credit than supply, but the adjustment would not be done by increasing interest rates. Furthermore adverse selection and moral hazard accentuate these market imperfections.

Stiglitz (1994) argues that market failures in financial markets are likely to be endemic as those markets are particularly information intensive, thus making information

imperfections and asymmetries as well as incomplete contracts more important and disruptive than in other economic sectors. Therefore in important parts of financial markets, market failures tend to be greater than government failures. In such cases government interventions are more desirable than in other sectors if their benefits outweigh their costs. This provides a first base for a strong case for public development banks and for robust regulation of private financial markets. In the case of development banks the argument is therefore not that they are perfect, but that they tend to perform key functions better than private banks; indeed, evaluations of public development banks should be made comparatively with private banks. An important point to add here is that it is naturally desirable to promote as good and well functioning development banks as possible, for example by promoting good governance within them.

From a complementary theoretical perspective several commentators (e.g. Ferraz et al, op cit, Kregel 1988, Wray, 2009), argue there is a preference for liquidity amongst investors, as well as banks, responsible for the limitations of the supply of credit in the economy. There may be lack of credit for investment even when there are well-developed national and international financial systems. Therefore, as pointed out above, the importance of development banks goes beyond the question of "market failure", though it includes it. Given the uncertainty about the future, depending on the characteristics of the new sectors / projects that require resources, banks often offer no or insufficient credit, (especially long term one), even if the financial system is fully developed.

Therefore, the existence of development banks is justified by the existence of sectors / investment projects that require funding, for the future development of the economy, but imply high uncertainty as to their future success (Mazzucato, op cit). Because of that, they may not be funded by the private financial system which prefers sectors / investment projects whose expected returns are less uncertain. These are often highly complex and expensive

sectors / projects, requiring sophisticated expertise in their evaluation that takes account positive impacts across the economy (positive externalities) and / or those in which social returns exceed private returns.

Thirdly, a key market imperfection in the operation of financial markets, basically across the board, is the tendency to "boom-bust", with feast of finance followed by famine, both in domestic and in international finance. Building on the theoretical tradition of Keynes (1936) and Minsky (1977), Kindleberger (1978) developed a historical analysis which considers financial crises as a response to previous excesses. Such excesses seem clearly far greater in financial and banking markets that are more liberalized and not properly regulated. The pro-cyclical nature of private finance implies the need for public development banks to provide both short- term, and especially long term, counter-cyclical finance, as well as the need for counter-cyclical regulation of banking and financial markets (Griffith-Jones and Ocampo, 2014). Griffith-Jones et al. (2012) and Ocampo et al. (2012) provide empirical evidence for the counter-cyclical response of regional and multilateral development banks, whilst Brei and Schlarek (2013) and Luna Martinez and Vicente (2012) provide evidence for the counter-cyclical role national development banks play.

II.2 Desirable functions and characteristics of development banks

The above theoretical context, as well as empirical evidence, help define the role that development banks do and need to play.

There are four valuable functions that seem crucial for national, regional and multilateral development banks to play: a) providing counter-cyclical finance, especially for supporting investment; b) supporting, through funding, a dynamic vision and strategy of

growth and structural transformation c) mobilizing broader resources, for example by leverage and targeted subsidies d) financing public goods. (Culpeper, Griffith-Jones and Titelmann, forthcoming).

As regards b), a particular focus of this chapter and book, the emphasis is on the especially valuable role that development banks can play to fund investment in the beginning of new sectors or the deepening of existing sectors, where private investment on its own would not invest, as it is too uncertainty averse. In those cases, effective development banks can provide the vision- and part of the resources, either through loans or equity-to do those things that at present are not done at all (Keynes,1926,Mazzucato, op cit). This requires development banks to have the expertise and the strategic vision to fund new sectors and new technologies. The fact that development banks can provide long term loans, as well as require lower returns further facilitates this. This is the most challenging, but also probably the most valuable role for development banks. For example, the EIB, and EU Structural Funds, provided funding for the inter-connection of national infrastructure within Europe on a massive scale, to support the creation of the European Common Market and to reduce economic divergence between poorer and richer region. More recently, the EIB is engaged in helping fund the creation of a "smart" intra-European electricity grid, to facilitate transmission of renewable energy.

However, development banks are also needed to fund sectors or activities where important externalities exist, which imply that social returns are higher than market returns; this is typically the case with environmental externalities. It is interesting that public development banks, and notably the EIB, evaluate projects both on a purely commercial basis, and also in an environmental way, incorporating a "shadow" (higher than market) price for carbon. This may require the provision of targeted and time- limited subsidies, for certain projects to go ahead; in the case of the EU, this can be and is provided from European

Commission resources. Finally, the counter-cyclical role is crucial to help sustain investment, innovation, job creation and growth in the long periods when private lending falls or, worse dries up. Uncertainty of funding, accompanied by lower demand, can be a major discouragement for private investment, prolonging stagnation or low growth unnecessarily. Development banks can step in to help with both.

More broadly, there is a different case in favour of development banks, in the sense of the benefits of diversification. Having a more diversified financial structure than one just focussed mainly in private (often large) banks may have several advantages. Firstly, it may encourage competition between different types of financial institutions, which could lead to them being more efficient, for example in the spreads they charge. Secondly, a more diversified financial system, especially if not having inter-connected risks, could lead to less systemic risk and therefore contribute to financial stability. Thirdly, if different varieties of financial institutions have different strengths[1], having a more diverse system could make it more likely that the financial sector functions needed to help achieve inclusive and dynamic growth are achieved, than if the structure of the financial sector are determined spontaneously, or dominated by one type of financial institutions, private or public.

Indeed, given that financial sectors (particularly liberalized, very lightly regulated ones) can be very problematic for growth, the need to pursue pragmatic policies in financial sector development, and not be driven by pure free market ideologies or conditioned too much by the interest of agents in the financial sector is especially important. It is key not to adopt an "either/or" attitude, but look at the best ways of building synergies amongst institutions of different type (e.g. private and public) as well as encourage best practice within them; for the more dynamic sectors, initially the catalytic role of development banks may be

[1] To include some stylized facts, development banks are good at counter-cyclical lending and at providing long-term finance for private investment in infrastructure, as well as supporting investment and innovation in new sectors; private banks are good at providing international trade credit as well as financing the needs of large companies;.

crucial. Public development banks co-finance, and increasingly lend, via private banks. Furthermore, much of their lending is done to private firms. The ability to combine private and public creatively, ideally working constructively together, is an essential feature of a financial system if it is to serve the needs of inclusive and environmentally sustainable growth. In this sense, though by no means perfect, the way the German financial sector has developed and operated, for example to successfully help fund renewable energy via public and private banks (as well as cooperative banks) and private investors acting together, provides a very good example.

Whilst it is valuable for public and private sector banks to collaborate and build on mutual positive synergies, it is important that the vices of one sector (e.g. the excessive financial risk taking of private investment banks and hedge funds) are not transmitted to the public development banks. Whilst public development banks can and should assume "economic risks" related to uncertainty of going into new sectors, new technologies, new markets, etc, they should not assume "purely financial risks", by copying or buying from, the private financial sector instruments that may offer short term high financial returns but imply potentially high risks. A preference for simple and transparent instruments, like "plain vanilla loans" or simple equity contributions seems justified for development banks, especially in the light of the North Atlantic financial crisis. More broadly, it should not be assumed that all activities of all public development banks are good, and that all their problems and any negative outcomes are justified; a specific research and policy effort is required to learn positive lessons from good experiences, so that countries can create new "good" development banks, as well as improve the ones that exist. Good governance, clear and strategic aims, careful project evaluations, as well as clear and transparent financial objectives seem to be key variables for ensuring god developmental performance by these banks.

Another important consideration is the scale of development bank lending, in proportion to total lending. There seems to be an important case for a significant scale so they can fulfil their functions well, especially in terms of funding key investments to make a meaningful impact on innovation and structural change and for playing a strong counter-cyclical role when this is necessary, as was clearly the case in the period during and after the North Atlantic crisis, and for financing public goods, like investment in renewable energy. It is interesting to note that KfW, the German public development bank is the second largest commercial bank in Germany, and represents 12.7% of total bank credit in the German economy. If the role of regional and other development banks is added, the share of public banks in Germany represents about a quarter of total bank credit. This is particularly relevant because the German economy is perhaps the most dynamic one in Europe, with a large ability to innovate and compete internationally, including in advanced industrial goods. The role that KfW has played in helping such innovation, growth and employment generation is a very understudied but important subject. In the case of Brazil, BNDES represents an even higher proportion of total credit, 21%; it represents a particularly high proportion of long-term finance and therefore has become a major instrument for innovation and industrial policy (see Ferraz et al, forthcoming).

A final desirable feature of effective development banks is that they should have a close dialogue with the private sector, to develop a joint vision and expertise for funding good projects in strategic sectors, but development banks should not be captured by narrow private or political interests, both because it would misuse resources and would distract the development bank from its important roles. Good governance of development banks is therefore essential.

III A Proposal for investment jobs and growth in the EU

There is growing consensus that it will prove impossible to restore growth on a sustained basis in the EU without stimulating investment. Restoring sustained and sustainable growth, based on expanded investment is also the best way to achieve a widespread resolution of the sovereign debt crisis. To do this is not only good arithmetic, as we illustrate below, but also good economics, and builds on clear lessons of history.

The need for stimulating investment has also become one of the key priorities for European policy makers and the European Commission. To this end, in November 2014, European Commission President Juncker argued for the mobilisation of up to 315 billion euros in additional public and private investment in the next three years. In his political guidelines President Juncker argued for the need of additional investment in the areas of infrastructure, notably broadband and energy network, as well as transport infrastructure in industrial centres; education, research and innovation; renewable energy and energy efficiency. Further Mr Juncker pledged that a significant amount should be channelled towards projects that can help the younger generation back to work (European Commission, 2014).

Thus, the timing for a major boost in investment is very good at present. The acute phase of the financial part of the Eurozone sovereign debt crisis seems fortunately over, as spreads-even in crisis hit countries- have declined sharply. Financial markets are much calmer, which is of course very positive. This gives some more space for a less austere fiscal policy, especially for defending existing public investment levels, and –especially- for facilitating private investment in the EU. This is crucial because growth in much of the Eurozone is anaemic; again this is better than in previous years, but clearly insufficient; other countries in Europe, like the UK, have seen their growth performance improved from

previous poor performance, but have still not recovered their GDP per capita levels of before the crisis. The main challenges for policy-makers are restoring investment and employment in most of Europe, as levels of both are so much below their pre-crisis levels; higher investment, especially if in the framework of a vision for future development in Europe, will lay a solid basis for a future dynamic and equitable European economy. Increased employment is crucial, especially in the countries most affected by the crisis, from a social, economic and political perspective.

There is the need for an additional growth and investment -promoting financing strategy which: is of sufficient size to produce rapid and significant effects; enhances productive capacity, encouraging present and future sustainable growth by financing economically sustainable projects and activities, in the context of a vision of innovation and structural transformation towards a greener economy; support the growth of both existing and new competitive enterprises, especially those that are innovative. Many of these enterprises are suffering severe lack of access to private credit, especially in countries like Spain and Greece, where lending has been stagnating during the crisis or, worse still, declining.

There is the need for proposals that are not only desirable but also feasible. A sound initiative, which has real chances of success, therefore needs to be: feasible to implement quickly, have sufficient size to make a meaningful contribution; be cost effective in terms of large impact with relatively limited additional public resources; the measures we propose provide significant leverage; lead to investment, that will contribute to a more dynamic and equitable future European economy. the additional finance should not only provide resources, eg for financing working capital for generating greater employment today, but – above all-investment in innovation and increased productivity, including in new sectors, strategic for future growth, which will generate jobs in the future.

The historical experience of the Marshall Plan after World War II can serve as a valuable reference concerning the proper size of such a program. The plan for Europe consisted of a total of $13-14 billion in currency of that period. That represented yearly additional investment of about 0.5% of European GDP, over about 5 years, about 2.5% of GDP. We argue that a similar order of magnitude would be relevant today and that the Juncker Plan is not of sufficient size to provide a significant and sustainable stimulus to the European Economy. Indeed, if we assume that all resources allocated under Juncker's Plan feed into higher investment across the EU, the size of additional investment will be less than 1% of EU GDP, with only marginal positive results on GDP growth.

In order to significantly stimulate the European economy we propose a more significant boost in investment in the EU, in the region of additional 530 billion Euros by 2020. Section III.2 we present some of the promising paths to finance such a greater investment plan. Here, we highlight the fundamental role that development banks can play in supporting, through funding, a dynamic vison and strategy of growth, structural transformation and increased lending. In section III.3 we then compare and contrast the impact of such alternative investment proposal on growth and employment vis-à-vis a scenario of lower investment, as proposed by the Juncker plan. It is interesting to stress that Marshall Plan resources were used, amongst other purposes, in Germany to fund the initial capital of the KfW, the very successful German development bank; in this sense, again, the Marshall Plan gives a nice precedent for today.

III.2 The proposal

There are two promising paths to use limited public resources to achieve important multiplier effects. The first is to increase paid-in capital of the EIB. The second is to achieve leverage with the EU budget.

In early 2012, we proposed a doubling of the paid-in capital of the EIB (Griffith-Jones et al., 2012). In their summit of June 2012, in a visionary step, EU leaders adopted precisely such a measure, which implied increasing the paid-in capital of the EIB by € 10 billion. Only a very small proportion of total capital, (5% of over € 230 billion of EIB subscribed capital) had to be paid-in. Therefore when this paid-in capital was doubled, it required only a total of €10 billion from all EU member states. This was only 1% of the EU budget for the period 2014-2020, and 0.01% of total annual EU GDP, that is a very small amount; it is also very small if compared to the vast amounts spent by European member states to rescue private banks!

Rating agencies accept a leverage of eight, between additional paid-in capital and additional lending for the EIB to maintain its AAA status. Therefore, the increase of paid-in equity of around €10 billion will allow the EIB to expand its lending by up to €80 billion, which is an impressive multiplier. Because typically the EIB co-finances 50% of projects, with private sector or others (including national development banks) contributing the other 50%, this will result in additional investment of €160 billion, which implies a massive multiplier, as based on € 10 billion of increased EIB capital. Even if a more conservative leverage of six is used for EIB lending, total additional lending (both EIB and others) can increase by € 120 billion in total in the coming years. The additional finance should not only provide resources for generating greater employment today, but –above all-investment in innovation and increased productivity, including in new sectors, strategic for future growth, which will generate jobs in the future.

The measure of doubling EIB paid-in capital has been successful, and has led to the EIB increasing, since 2013 significantly its level of lending. Therefore, because the measure was successful and because credit from private banks is still severely constrained, especially but not only, in the most crisis affected countries, **we would like to suggest a further**

increase of another € 10 billion of the paid-in capital of the EIB. This would allow another increase of up to € 80 billion of EIB lending, and a total increase of € 160 billion of total lending for the next five years (2015-2020). Such additional lending could be focussed especially on investment linked to innovation and structural transformation, particularly in new sectors or applied to new countries; an example would be economic land- mark projects, such as a cable connection from the most suitable European locations for solar energy production in Crete to the mainland, an investment which is economically viable but finds no financiers. Employment creation, especially for the young, would also be an important priority implying direct and indirect labour intensity of investment could be a criterion for choosing projects.

The second route to achieve leverage is with the EU budget. Large projects can be co-financed by the EIB alongside with private capital from pension funds and insurance companies that currently do not fund large investment projects, due to too high risks. Before the financial crisis, these risks were absorbed by large mono-line insurers (such as AIG), with the help of which the financing of such projects were transformed into triple-A bonds. After the crisis, this insurance is no longer available. A very small amount (as proportion of the EU budget), equal to €5 billion a year can be allocated as a risk buffer, for example in the next four years. Such resources would come from the existing EU budget, and could imply some small restructuring of expnditure areas such as the EU Structural Funds, and in particular the European Regional Development Fund (ERDF) which already focuses on investment in areas such as innovation and research, support for SMEs, digital agenda, and low-carbon economy. This €5 billion a year would allow the EIB to lend an additional €10 billion annually both for financing infrastructure projects (project bonds) as well as projects to promote innovation. The project bonds would imply that 25% of the project would be advanced by a private investor, the EIB would finance the next 25%; with a

mezzanine tranche; the remainder would be invested by pension funds and insurance companies; regarding the mezzanine tranche, the EU contribution would finance half the risk assumed by the EIB. Thus, €5 billion from the EU budget- leading to financing by the EIB of €10 billion- would lead to project finance of €40 billion annually. Baby steps have been taken along such lines, but there is an urgent need to scale them up to reach the levels outlined above (see also Griffith-Jones, Kollatz, Andersen and Hansen, op cit)

If both these avenues are fully pursued at sufficient scale, a target of increasing lending and investment across the EU by approximately an additional €360 billion in the period 2015-2020, with an attempt to front load this in the next few years, which it could be assumed would come from the further additional paid-in capital of increased € 10 billion, that could generate € 160 billion of new lending, and € 5 billion during five years for risk capital from the EU budget, that would generate financing of € 40 billion for five years. This means in the coming years additional lending and investment could increase by up to €72 billion a year, implying an increase of over 0.5% of GDP annually in the next few years.

There are a number of additional current proposals with respect to the financing of investment which could complement and support our proposal and further increase investment. For instance, another viable solution is the institution of a European Fund for Investment (EFI), as proposed by Polish Finance Minister Szczurek (2014). Szczurek proposed a 700 billion Euros EFI financed by injections of paid-in capital and guaranteed by all EU member states, for a total of 105 billion Euros, which would then be leveraged by borrowing in the financial markets. We believe that this, perhaps on a smaller scale, could be a viable parallel and complementary initiative to our proposal.

In Section III.3 we assess the impact of our more significant investment boost on EU growth, employment and investment, as well as on debt to GDP ratios, and fiscal deficits to

GDP. We present results both at aggregate level for the European Union but also for the North Eurozone (which includes e.g. Germany, the Netherlands, Finland, Austria, and Belgium) and for the South Eurozone (which includes Spain, Portugal, Italy and Greece).

III.3 Impact of the proposals on GDP, investment and employment

Using the Cambridge Alphametrics Model (CAM), we examine two alternative scenarios for Europe for the period to 2020 (more information on the CAM model can be found in appendix A). In the first scenario – *business as usual* – we give particular attention to the 315 billion euros Investment Plan for Europe (Juncker's Plan). Thus, in our programming we assume that private investment in the European Union increases from 15% of GDP in 2015 to 17% of GDP by 2020. As such, we assume that within the next five years, 85% of the resources allocated under the Investment Plan for Europe will feed into higher investment rates across the European Union. In addition, the business as usual scenario assumes that austerity policies in Europe are maintained in an attempt to reduce debt-to-GDP ratios to 60 percent. In other words, governments will continue cut their expenditures to reduce government debt.

We contrast this scenario with an investment-led recovery scenario for Europe. In this scenario investment (both government and private) is considered as the key strategy to increase employment and economic growth. We assume that private investment in the European Union significantly increases from 15% of GDP in 2014 to 19% of GDP in 2020. In nominal terms, this would imply additional resources for investment, compared to the business as usual scenario, of approximately 530 billion Euros by 2020 for the EU. We based our assumption on a combination of the proposals presented in section III.2 (increase in EIB capital, project bonds, and institution of the European Fund for Investment). Table 1 summarises the estimates for private investment for the business as usual scenario and the

investment led scenario for the European Union as a whole and for the North and South Eurozone. With regards to the distribution of the investment funds between the North and South Eurozone we also assume that more funds will be redirected in the South Eurozone vis-à-vis the North Eurozone.

Table 1. Private investment as % of GDP

	Scenario	Actual		Projected		
		2007	2014	2015	2018	2020
European Union	**Business as usual**	19.0	15.3	15.8	17.2	17.6
	Investment-led			16.0	18.0	19.1
North Eurozone	**Business as usual**	17.5	15.9	16.2	17.5	18.1
	Investment-led			16.5	18.2	19.4
South Eurozone	**Business as usual**	22.1	14.2	14.7	16.4	17.0
	Investment-led			14.8	17.6	18.8

The second important aspect of our investment-led scenario is the implementation of a more expansionary (or in some cases less contractionary) fiscal policy stance at the EU level. In this respect, we assume that EU governments either maintain or increase expenditures as a share of GDP in an attempt to create the economic momentum required to substantially increase investment, employment and economic growth. The more significant increase in government expenditure will occur in the South Eurozone, where it increases from 22.8% of

GDP in 2014 to 23.8% by 2020. The North Eurozone would experience a more marginal increase in government expenditure, from 23% of GDP in 2014 to 23.5% of GDP in 2020.

These increases in government expenditure will mainly be covered by higher tax revenues, resulting from additional economic output generated under the investment-led strategy. In addition, in order to offset budget deficit pressure we also assume that government revuen increases as a result of increase in direct taxation and as a result of stronger action to curb tax evasion. In the South Eurozone government income increases from 16.3% of GDP in 2014 to 19% in 2020 and in the North Eurozone from 12% of GDP in 2014 to 22% in 2020.

We now move our attention to the impact of our alternative investment-led scenario on economic growth, employment, debt and fiscal deficits. This is particularly important because alternatives to current investment policy proposals are often discounted on the basis of lack of economic viability, as they would lead to higher government debt and grater fiscal deficits. However, our simulations demonstrate that a much stronger pan-European investment strategy coupled with expansionary fiscal policies can have positive effects on the European economies.

Table 2 summarises the projected average GDP growth for the business as usual scenario and the investment-led scenario. Under the assumption that 85% of resources from the Juncker plan will be allocated towards investment projected average GDP growth for the European Union as a whole for the business as usual scenario would only reach 1.7%. This is much lower than the growth levels recorded in the period 2000-2008, where average GDP growth stood at 2.3%. On the other hand, our investment-led scenario, which combines a more sizeable investment plan complemented by more expansionary fiscal policies would lead to an average growth rate in the European Union for the period 2015-2020 of 3%.

Table 2. Projected average GDP growth (%)

	Scenario	Actual		Projected
		2000-2008	2009-2014	2015-2020
European Union	**Business as usual**	2.3	0.1	1.7
	Investment-led			3.0
North Eurozone	**Business as usual**	1.8	0.6	1.8
	Investment-led			2.9
South Eurozone	**Business as usual**	2.3	-1.3	1.6
	Investment-led			3.3

Under our investment-led scenario, similar positive trends are also evident in the Eurozone. In the North Eurozone projected average output growth for 2015-2020 will reach 2.9% compared to 1.8% of the business as usual scenario. At the same time, in the South Eurozone, average GDP growth increases from 2.3% in 2000-2008 to 3.3% in 2015-2020 under the investment-led scenario, whereas, under the business as usual scenario it only reaches 1.6% during the period 2015-2020.

Our simulations also reveal some improvement, albeit still limited, on the level of unemployment. Table 3 shows the amount of unemployed workers (in million) for the European Union, the North and the South Eurozone. Under both scenarios, unemployment in the EU decreases, and the highest reduction occurs under the investment-led scenario, where the number of people unemployed decreases by 5.2 million units from 2014 to 2020. In the North Eurozone unemployment does not experience any significant variation over the period, whilst in the South Eurozone, under the more positive investment-led scenario, unemployment decreases by 3.5 million units from 2014 to 2020.

Table 3. Unemployed workers (million of people)

	Scenario	Actual			Projected	
		2000	2008	2014	2015	2020
European Union	**Business as usual**	21.7	17.9	27.3	26.7	23.8
	investment-led				26.3	22.1
North Eurozone	**Business as usual**	3.9	4.0	3.4	3.5	3.4
	investment-led				3.4	3.4
South Eurozone	**Business as usual**	5.9	5.3	12.0	11.6	9.3
	investment-led				11.4	8.5

Despite these important reductions, the level of unemployment in the European Union and in the Eurozone does not reach the lower pre-crisis levels. We argue that in order to further reduce the level of unemployment in Europe an investment-led strategy has to be complemented with policies aimed at improving labour force participation. In particular, it is essential to invest in better educational programmes, training and research and to have more targeted lending for the development of labour-intensive technologies and to SMEs, as they are one of the main catalysts for job creation.

The investment-led scenario also lead to more favourable results in terms of debt-to-GDP ratios compared to the business as usual scenario. Whilst debt levels for both scenarios are projected to remain above the 60 percent debt-to-GDP ratio prescribed by the Growth and Stability pact, the important gains achieved in terms of GDP growth in the investment-led scenario lead to lower debt levels. Table 4 presents the debt-to-GDP ratio for the South Eurozone, the bloc with the highest level of government debt. In the business as usual scenario, despite continued reduction in government spending and increases in investment as a result of the Juncker plan, government debt will continue to rise significantly as economic growth remains subdued. Government debt levels will increase from 133% of GDP in 2014 to 168% of GDP by 2020. On the other hand, the increase in government debt under the investment-led scenario will be more modest, and will reach 144% of GDP by 2020.

Table 4. Debt-to-GDP ratio, South Eurozone

	Scenario	Actual			Projected	
		2000	2008	2014	2015	2020
South Eurozone	Business as usual	86.6	78.5	133.4	137.3	168.3
	investment-led				133.3	144.1

More positive results in terms of fiscal deficit reduction are also achieved under the investment-led scenario vis-à-vis the business as usual scenario. Table 5 shows the net government lending for the North and the South Eurozone. In the North Eurozone, under the investment-led scenario, net government lending reaches -1.1% of GDP. The fiscal deficit in the South Eurozone also significantly improves. Under the investment-led scenario fiscal deficit decreases from -6.5% in 2014 to -4% in 2020, at the same time under the business as usual scenario, fiscal deficit still remains at 5% of GDP in 2020.

Table 5. Net Government lending as % of GDP

	Scenario	Actual			Projected	
		2000	2008	2014	2015	2020
North Eurozone	Business as usual	0.9	-1.6	-1.8	-1.5	-1.5
	investment-led				-1.2	-1.1
South Eurozone	Business as usual	-1.0	-4.0	-6.5	-5.8	-5.1
	investment-led				-4.9	-4.0

The analysis of the impact of an investment-led strategy, where investment in the European Union is significantly expanded as a result of an increased role of development banks, and it is accompanied by a more expansionary fiscal stance, allow us to conclude that such a scenario for Europe will bring important gains in terms growth and jobs creation, and will not

have a negative impact on the level of government debt and fiscal deficits. Thus, such a strategy is indeed economically viable and should be quickly implemented.

IV Conclusion

The purpose of this chapter is to highlight the crucial role that development banks need to play for promoting economic development. We have highlighted four valuable functions that national, regional and multilateral development banks can play: a) providing counter-cyclical finance; b) supporting a dynamic vision and strategy of growth and structural transformation c) mobilizing broader resources, and d) financing public goods.

Here, we have mainly focused on the role that development banks should have in supporting a dynamic vision and strategy of growth and structural transformation. Development banks play a crucial role in funding investment in large and innovative programmes, like green technology, especially where private investors are reluctant to invest. They can provide the vision and part of the resource. Furthermore, we argue, that such investment should form the strategic basis for generating much needed employment and growth in Europe. This should be a particularly high priority for European policymakers in the aftermath of the North Atlantic crisis and global recession, given low levels of investment and-above all-very high unemployment.

We develop a specific proposal for how an expansion of lending by the EIB – via a further increase in paid up capital -accompanied by other complementary measures can lead to a major boost in investment, employment and GDP growth in the EU.

We model the impact of such investment-led strategy on employment and growth and contrast its outcomes to those produced by the current austerity – business as usual – scenario. The results generated by our investment-led scenario are impressive compared to

the bleak prospects of business as usual scenario. In particular, an investment-led strategy leads to an average growth rate in the European union of 3% during the period 2015-2020, and a reduction in unemployment of 5.2 million units, as well as lower debt-to-GDP ratios and lower fiscal deficits compared to the business as usual scenario.

Thus, we argue that an investment-led strategy with an enhanced role for the EIB, as well as national development banks is economically viable and leads to much higher levels of growth and employment in Europe. The time to do it is now!

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Appendix A

The Cambridge Alphametrics Model (CAM)

The Cambridge-Alphametrics Model (CAM) of the world economy is a non-conventional macroeconomic model that is primarily used to make medium to long-term projections of historical trends of the global economy, blocs of countries, and major individual countries. This macro-model does not have any single, well-defined equilibrium path to which the economy tends to return in the medium or long-term. Being an open disequilibrium system, a wide variety of outcomes may be simulated with different growth rates and end points (Cripps 2014).

CAM projections draw on continuous historical data from 1970 to the most current year available for model variables (2014 for this exercise). The databank holds series in US dollar values and other units disseminated by UN organisations.

In CAM the world economy is regarded as an integrated system in which the behaviour of different countries and blocs differs and changes progressively through time because of their specific situation in terms of geography, level of development, financial position, and so forth. The macro-model has a common set of identities and behavioural equations for all blocs to reflect the notion that they are part of the same world economy. This common schema allows for panel estimation methods (Cripps 2014).

In the model aggregate demand and technical progress are the principal drivers unless other important behavioural constrains are introduced into the model, thus long-term growth rate is best understood as reflecting growth of aggregate investment and government spending in the world as a whole. These variables in turn reflect confidence, expectations and policy (Cripps 2014).