

The roles of development banks; how they can promote investment, in Europe and globally

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I Introduction

The financial sector should help support the real economy. To achieve this key positive role the financial sector needs to encourage and mobilize 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. In the context of industrial policy, it should help fund new sectors and deepen existing ones, to support national and regional development strategies. Ideally, the financial sector could help societies acquire and accumulate learning, valuable for increasing productivity, especially in a dynamic sense (Stiglitz and Greenwald, 2014).

Because the financial sector has such important effects throughout the economy it also needs to adhere to a principle of avoiding harming 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, especially, 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 context of industrial policy, it typically does not want to take too many risks, and - especially in recent times - tends to be unwilling to provide the long-term funding required to develop new sectors and technologies on a sufficient scale.

The problems with the private financial sector 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, as well as 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 and development State”, that encourages and leads, providing the vision and the dynamic push for private innovation and structural transformation (Chang 2002, Wade 2003, Mazzucato 2013). Stiglitz and Greenwald (2014) add the very important dimension that successful and sustained growth requires the

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creation of a learning society and a knowledge economy to increase productivity - public development banks are an important institutional vehicle for supporting this. Indeed, development banks can help overcome market failures in both financial and knowledge markets simultaneously.

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. 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 Euro-zone debt crisis, as private lending fell. Since its creation in 1956, the EIB and the EU Structural Funds, have 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.

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. One of the few positive policy responses to the Euro-zone debt crises has been the creation of development banks and/or development finance mechanisms, especially for SMEs, in countries like Ireland, Greece and Portugal, often with strong support from KfW and the EIB.

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, the 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.

Section III gives a strong illustration of the positive role that development banks can and do play, both in helping economies recover after crises as well as grow more generally, by funding investment which will lead to long term transformation and innovation. Using the global non-equilibrium Cambridge Alphametrics Model (CAM), we present projections of economic developments that might take place in the period up to 2020 under alternative assumptions about global and European economic governance systems. Three main scenarios are presented: ‘Business as Usual’, ‘European investment-led recovery’, and ‘Global investment stimulus’.

'Business as usual' scenario envisages a world where government initiatives to stimulate growth and employment are constrained as the global investment rate stagnates. The projected macroeconomic outcome for Europe is a long period of low growth due to the harmful effects of austerity policies in the South Eurozone (Italy, Spain, Greece and Portugal) and lack of significant and effective investment strategies.

Under the 'European investment-led recovery' scenario the global economy is still struggling to recover due to the absence of a coordinated global investment stimulus. On the other hand, the macroeconomic outcome for Europe is more positive as we assume that Europe adopts an expansionary fiscal policy stance coupled with a significant boost in private investment to support growth and job creation. An important role in the latter would be played by the use of the European Investment Bank and national development bank, on an ambitious scale, to encourage private investment.

Our third scenario 'Global investment stimulus' demonstrates that a global economic action could lead to significant economic gains. In the spirit of an investment-led 'global New Deal', we assume that both developed and developing countries significantly boost private investment. This ultimately leads to faster global growth rates and significant employment gains. It is assumed that development banks would play an important role in funding such investment, both in Europe and globally. At the European level, growth and employment objectives are also supported by government spending and investment as well as by private investment. Overall, this scenario assumes that a European investment-led recovery combines with a global investment-led recovery.

In our investment scenarios we assume that investment rises substantially, on the basis that an expanded role for regional and national development banks will provide the required financing. We will provide simulations for this role, both in the European context, but also globally, and especially for developing countries. 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 facilitates 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

A. 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 synthesized 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. One of the largest paradoxes was that, during this phase of dominance of the more “neo-liberal approach” the World Bank, itself a very important public development bank, played an important role via its’ conditionality in encouraging developing countries to wind down their national development banks!

An alternative theoretical 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.

Another approach is associated with the theory of market failures in financial markets (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 markets 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, as Stiglitz, op cit. insightfully argues. In such cases government interventions are more desirable than in other sectors if their benefits outweigh their costs. This provides a first robust case for a “visible hand of government,” both through effective public development banks and through robust regulation of private financial markets.

Stiglitz and Greenwald (2014) further argues clearly that knowledge and information markets also have huge market imperfections, and that knowledge and information are basically public goods. As a consequence, governments have a clear role in promoting a learning society, to help achieve increases in productivity. One of the institutional vehicles for helping achieve such a learning society, perhaps more in developing and emerging economies, are good development banks.

Besides providing long-term finance, they can provide specific incentives, through their lending, for innovation. Furthermore, because of their long-term perspective, they can help fund, accumulate and coordinate expertise in specific areas of innovation and in “learning how to learn”. Naturally in this task they need to, and do, collaborate with other actors, both public and private. This role in accumulating and promoting knowledge and learning, which has not been sufficiently explored in the literature, cannot be well accomplished by most private financial institutions, as they focus mainly or exclusively on short-term profits, and tend not to be interested either in past experience or in future externalities. Development banks therefore need to help fill the gap.

From a complementary theoretical perspective several commentators (e.g. Ferraz et al, forthcoming, Kregel 1988, Wray, 2009) argue there is a preference for liquidity amongst investors, as well as banks, which is 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 builds on 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 credit) even if the financial system is fully developed.

Therefore, the existence of development banks is justified by the existence of sectors and investment projects that require funding for the future development of the economy, but have 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 or 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 of positive impacts across the economy (positive externalities, for example in terms of helping mitigate climate change via lower carbon emissions, as renewable energy does) 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 a 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 important empirical evidence for the counter-cyclical role national development banks play.

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

As regards b), 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, 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 technologies.

The fact that development banks can provide long-term loans, have a long-term development perspective, as well as require lower returns further facilitates this. Development banks can also accumulate their own expertise, which they can transmit to investors and borrowers, as well as promote its development. Thus development banks can combine helping to fill gaps in knowledge and in resources. This is the most challenging, but also probably the most valuable role for development banks. For example, 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, unnecessarily prolonging stagnation or low growth. 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 focused 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 strengths², 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.

² 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.

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, the initial catalytic role of development banks may be crucial. Public development banks co-finance, and increasingly lend, via private banks, especially in the case of small and medium enterprises. 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, for example by the use of excessively “sophisticated” and opaque instruments, that can generate future risks. 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. Equity or equity-like instruments have the advantage that they can allow development banks to compensate the higher risks they assume, e.g. in helping develop and fund new sectors and/or technologies by receiving a part of the “upside” if profits are high; such capturing of part of the “upside” of profitable projects can generate profits, that the development bank can plough into new future activities, via for example increasing its capital.

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 has been 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. From business as usual to an investment-led global New Deal

This section examines three possible alternatives for the global economy and Europe, for the period to 2020. We first examine a business as usual scenario in which it is assumed that austerity policies in Europe are maintained in an attempt to reduce fiscal deficits to 3% of GDP and debt-to-GDP ratios to 60%. In other words, European governments will continue to cut their expenditures to reduce government debt and contain increases in government revenue. This is particularly the case for the South Eurozone where government spending is assumed to reduce from 23% of GDP in 2014 to 21% by 2020 and in the United Kingdom where government spending decreases from 23% in 2014 to 22% in 2020.

Within this scenario we also give particular attention to the new 315 billion euros Investment Plan for Europe, widely known as the Juncker Plan (European Commission, 2014). In our programming we assume that investment as percentage of GDP in 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. If anything, this may be a somewhat optimistic assumption, given that there are concerns that the resources devoted to this plan may not be sufficient to catalyse such large investment.

At the global level, our business as usual scenario envisages a world in which private investment remains subdued in the face of depressed expectations of profitability, continued austerity in some highly-indebted countries, and the relatively low growth environment. As such, we assume that the global investment rate as percentage of world GDP would only marginally increase from 21.4% of world GDP in 2014 to 22% of world GDP in 2020.

We contrast our business as usual scenario with two alternative sets of projections in which it is assumed that significant increases in public and private investment form the basis of sustainable economic recovery. In the first alternative scenario, 'European Investment-led recovery', we assume that private investment in the European Union significantly increases from 15% of GDP in 2014 to 20% 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 European Union. We base our assumption on the recent proposal of the Polish Finance Minister, Mateusz Szczurek, who calls for a EU-wide investment programme of 700 billion Euros (equivalent to 5.5% of EU GDP) (Szczurek 2014a).

With respect to the financing of this investment we argue that both EU member states and European institutions have a role to play in providing capital to lending institutions so that credit expansion can support the growth of private investment. There are a number of current proposals in this direction. For instance, in a recent study, we highlight two promising paths to use limited public resources to achieve important multiplier effects. The first is to increase paid-in capital of the European Investment bank (EIB). We suggest a further increase of 10 billion Euros of the paid-

in capital of the EIB, building on the successful experience of 10 billion Euros increase of paid-in capital undertaken in 2012. Indeed, European leaders, in a visionary move doubled paid-in capital of the EIB by Euro 10 billion in 2012, which facilitated at least an additional EIB lending of Euro 80 billion, and a total additional lending of Euro 160 billion, as the EIB requires 50% of co-financing with its loans.

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 high risk. Before the crisis, these risks were absorbed by mono-line insurers such as ING. However, after the crisis, it has become more difficult for mono-line insurers to take on this task. To this end, we propose that a very small amount (as proportion of the EU budget), equal to 5 billion euros a year, could be allocated as a risk buffer. Such resources would come from the existing EU budget, and could imply some small restructuring of the EU budget. These 5 billion euros a year would allow the EIB to lend an additional 10 billion annually, leading to investment up to 20 billion annually (Cozzi and Griffith-Jones 2014).

Other viable proposals for financing investment include the institution of a European Fund for Investment (EFI) for 700 billion Euros. This fund would be financed by injections of paid-in capital and guarantees by all EU member states, for a total of 105 billion Euros, which would then be leveraged by borrowing in the financial markets (Szcurek 2014b). We believe that this could be a viable parallel initiative but it is crucial that EU member states' contributions would not be taken into account when defining the fiscal adjustment targets under the Stability and Growth Pact. National development banks could play an important role in co-funding private investment in those countries where they exist. An interesting model is the new public investment vehicle recently created for financing SMEs in Ireland, which has credit lines from the EIB and German KfW, whilst being capitalized by the Irish public pension fund.

The second important aspect of our 'European 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 European 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 we assume that government expenditure as percentage of GDP 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, whereas in the United Kingdom government expenditure will be maintained at 2014 levels (23% of GDP) through the period.

Increases in government expenditure in our scenario will be mainly covered by the higher tax revenues, resulting from additional economic output generated under the European investment-led strategy. In addition, in order to offset budget deficit pressure that an increase in expenditure could generate we also assume that government revenue increases as a result of increases in direct taxation, particularly for the high earners and as a result of stronger actions to curb tax fraud and tax evasion. In the South Eurozone government income increases from 16.3% of GDP in 2014 to 19% in 2020, in the North Eurozone from 12% of GDP in 2014 to 22% and in the United Kingdom from 17% of GDP to 19% of GDP over the same period.

The final, and most promising scenario for global recovery, is a 'Global investment stimulus'

scenario. Here, our objective is to evolve the ‘European investment-led’ scenario in a global context where promoting investment and sustainable economic growth is done at a global scale. In particular we assume that both developed and developing countries will put forward initiatives to stimulate private investment. In this context, we argue that public national and regional development banks can play a fundamental role in developing countries in closing market gaps, supporting through funding infrastructure projects and technological development, as well as providing counter-cyclical financing (Griffith-Jones and Tyson 2013). As discussed above, countries like Brazil, India, China and others have had successful development banks, which play a major role in funding and catalysing private and public investment; it may be desirable to create or expand existing development banks in other emerging and developing economies, as well as in developed economies. This national development bank activity could be complemented by increased loans and equity by existing regional and multilateral development banks; furthermore, the creation of a New Development Bank, under the leadership of the BRICS (see Griffith-Jones, 2014, for example) as well as the new Asian Infrastructure Fund can give further important support to increased investment in developing and emerging economies.

In our Global Investment Stimulus scenario we assume that global private investment as percentage of world GDP increases from 21.4% of world GDP to 23.8% of world GDP in 2020. This represents a significant, but realistic, increase compared to the ‘business as usual’ scenario, where global private investment increases less, and reaches 22% of world GDP by 2020.

Given the current structure of the CAM model (see appendix 1 for more information about the model), which divides the world into regions (e.g. low income Africa, South America, European Union, South and North Eurozone) and large countries (e.g. United States, Brazil, China, India), we programme increases in private investment either at country or regional level. For instance, for the region of low income Africa we assume that private investment in the Global Investment Stimulus scenario increases from 16.4% in 2014 to 17.8% in 2020. This projection is in sharp contrast with the business as usual scenario, where no specific assumption on private investment is made and historical trends are projected to 2020. Under the business as usual scenario this region would see private investment rate sharply declining to 14.4% by 2020. For Brazil we assume that private investment increases from 16.3% of GDP in 2014 to 17.8% in 2020 in the Global Investment Stimulus scenario, whereas in the business as usual scenario private investment would decline to 15.4% of GDP by 2020.

In developed countries, we also assume significant increases in investment. For the European Union, we adopt the same assumptions on investment, government spending and income as in the ‘European investment-led recovery’ scenario. Whereas, for the United States in the Global Investment Stimulus scenario we assume that private investment increases from 15.8% of GDP in 2014 to 19.5% in 2020. Greater public investment and/or possible creation of public institutions or mechanisms to help fund private investment could be channels for such investment. This increase would bring investment in the US to early 2000s levels and represents a significant jump compared to the business as usual scenario, where investment would only reach 17.2% of GDP by 2020 (Table 1A in the appendix presents a more complete list of historical and projected results of investment as percentage of GDP under both the business as usual and global investment stimulus scenario).

IV Scenario outcomes

In this section we present the projections produced by the CAM under the assumptions described

for our three scenarios. Table 1 shows historical and projected average GDP growth rates for each scenario. World growth is faster under the Global Investment Stimulus scenario as benefits of higher investment rates are achieved in most parts of the world.

Under the ‘business as usual’ scenarios the lack of a coordinated investment stimulus coupled with a continuation of austerity policies in the European Union translates into further decline of average world GDP growth rate to 2.7% for the period 2015-2020.

Table 1. Historical and projected average GDP growth (%)

	Historical			Business as usual	European investment led recovery	Global investment Stimulus
	2000-2004	2005-2009	2010-2014	2015-2020	2015-2020	2015-2020
World	3.0	2.2	2.9	2.7	3.1	4.3
European Union	2.3	1.0	1.0	1.8	3.0	4.1
United States	2.7	0.9	2.4	1.3	1.4	2.5
Brazil	3.0	3.6	3.1	3.0	3.2	4.7
Other South America	2.3	5.5	4.5	2.8	3.0	4.3
India	5.9	8.1	6.0	6.0	6.2	7.5
China	9.2	11.4	8.6	8.9	9.1	11.4
South Africa	3.6	3.7	2.7	0.8	1.0	2.4
Africa Low income	6.0	6.4	6.0	3.1	3.3	4.8

Under “business as usual” in the European Union, average GDP growth for the period 2015-2020 only reaches 1.8%, which is still well below early 2000s levels. As hoped private investment in the European Union increases from 15% of GDP to almost 18% by 2020 (Table 1, Appendix 1) due to greater resources availability under the proposed Investment Plan for Europe. However, it is clear that this plan is not sufficiently big to stimulate the European economy and that its potential positive effects are further undermined by continued cuts in government spending, which ultimately depress aggregate demand and economic output.

Indeed, the European investment-led recovery scenario demonstrates how the combination of a greater investment plan for Europe (in the region of 750 billion euros for the next five years), where both the European Investment Bank and national development banks could play an important role, and a more expansionary fiscal stance leads to a much more positive growth performance, as average GDP growth for the period 2015-2020 reaches 3%. This is particularly beneficial for the South Eurozone, as average GDP growth for the period 2015-2020 would increase from 1.6% under the business as usual scenario to 3.3% under the European investment-led recovery scenario. Further, this alternative policy stance in Europe would also have a beneficial effect on world economic output, given the weight of the European economy vis-à-vis the rest of the world.

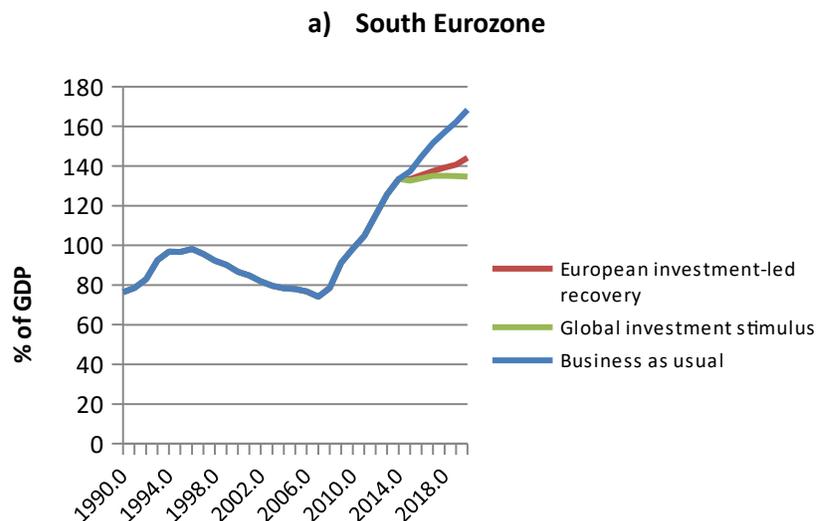
Our Global Investment Stimulus scenario presents a much more optimistic global context where different regions across the globe put in place action to increase investment rates, both through higher public investment and through a greater role of national and regional development banks.

In this scenario, for the period 2015-2020, average growth rate of global private investment is 7%, which is significantly higher than the average growth rate under the business as usual scenario. Higher investment rates translate into higher GDP growth across the world. In South Africa, for instance, average GDP growth for the period 2015-2020 reaches 2.4% whereas under the business as usual scenario it only reaches 0.8% over the same period. In the region of low income Africa average GDP growth is 4.8% under the global investment stimulus scenario whilst, under the business as usual scenario, average GDP growth for this region stands at 3.1%. Overall, global economic output significantly benefits from a higher global investment at a global level, as average world GDP growth for the period 2015-2020 reaches 4.3%.

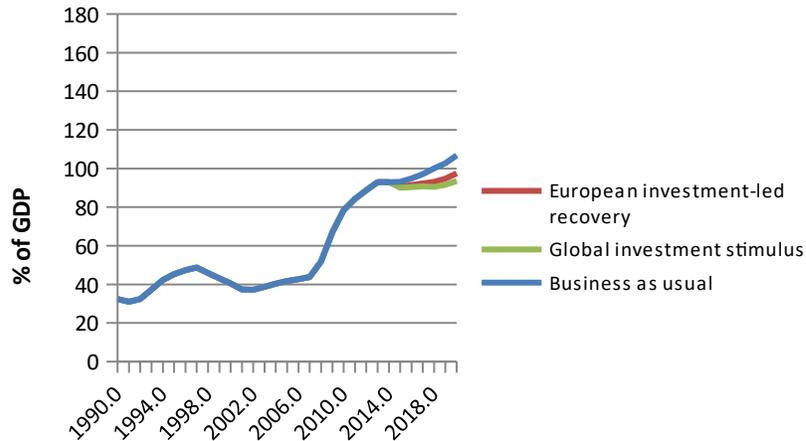
We now move our attention to the impact of our alternative policy strategies on the European Union. We are particularly interested in assessing the implication of such strategies on employment, government debt and fiscal deficits. This is particularly important given that alternatives to austerity are often discounted by mainstream commentators as not economically viable, as they would lead to higher government debt and greater fiscal deficits.

Figure 1 presents the outcomes in terms of government-debt-to GDP for the South Eurozone and for the United Kingdom. Our alternative, investment-led scenarios, lead to more favourable results in terms of debt-to-GDP ratios compared to the business as usual scenario. Whilst debt levels for all the three scenarios are projected to remain above 60% debt-to-GDP ratios prescribed by the Stability and Growth pact, the important gains to GDP achieved in the investment-led scenarios lead to lower levels. In the South Eurozone, under the global investment stimulus scenario, debt-to-GDP ratio levels off at 135% of GDP by 2020, whilst it moderately increases to 144% of GDP under the European investment-led recovery scenario. Particularly worrying is the trajectory of debt-to-GDP ratio under the business as usual scenario where, as a result of poor economic growth, it continues to increase sharply, and reaches 168% of GDP by 2020. In the United Kingdom, by 2020, debt-to-GDP ratio reaches 93% under the global investment stimulus scenario and 98% under the European investment-led recovery scenario, whilst under the business as usual scenario the debt-to-GDP ratio continues its historically increasing trajectory and reaches 107% of GDP by 2020.

Figure 1. Debt-to-GDP ratios, South Eurozone and United Kingdom



b) United Kingdom



Our alternative investment scenarios also lead to significant improvement in fiscal deficits in the European Union, in particular vis-à-vis the business as usual scenario. Again here the role played by development banks is particularly valuable, as with limited public resources-used to fund paid-in capital, they can leverage significant private investment, as they co-finance and co-invest with private banks and investors.

Table 2 presents the projected results of net government lending as percentage of GDP for the South Eurozone and the United Kingdom. These two areas of the European Union present the highest fiscal deficits since the onset of the North Atlantic financial crisis.

Table 2. Net Government lending as % of GDP, South Eurozone and United Kingdom

		Historical			Projection	
		2000	2008	2012	2015	2020
South Eurozone	Business as usual				-5.9	-5.1
	European Investment led recovery	-1.0	-4.0	-6.1	-4.9	-4.0
	Global investment stimulus				-4.9	-3.6
United Kingdom	Business as usual				-4.7	-4.3
	European Investment led recovery	3.5	-4.9	-7.9	-4.6	-3.9
	Global investment stimulus				-4.5	-3.9

In the south Eurozone the more positive results in terms of fiscal deficit reduction are achieved under the global investment stimulus scenario. By 2020, under this scenario, net government lending as percentage of GDP decreases from -6.1% in 2012 to -3.6% in 2020. The results of the

European investment-led recovery scenario are also more favourable than the business as usual scenario, as by 2020 net government lending reduces to -4% of GDP whilst in the business as usual scenario net government lending as percentage of GDP still remains at -5% in 2020. In the United Kingdom the two alternative investment scenarios produce similar results in terms of deficit reduction. Under both scenarios, net government lending as a percentage of GDP reaches -3.9% of GDP by 2020. This represents an improvement compared to the business as usual scenario where fiscal deficit in the United Kingdom reduces to -4.3% of GDP by 2030.

The analysis of debt-to-GDP ratios and fiscal deficits under our three scenarios allows us to argue that an investment-led strategy at European and global level will bring important gains in Europe not only in terms of higher economic output but also in terms of government-debt reduction and improvements in fiscal deficits. Furthermore, the alternative investment scenarios achieve important gains in terms of reduction in unemployment in the European Union. Table 3 contrasts unemployment as percentage of labour force for the North and South Eurozone under the three alternative scenarios.

Table 3. Unemployment as % of labour force, North and South Eurozone

		Historical			Projection	
		2000	2008	2012	2015	2020
South Eurozone	Business as usual	11.1	8.8	17.8	19.0	15.5
	European Investment led recovery				18.8	14.2
	Global investment stimulus				18.7	13.3
North Eurozone	Business as usual	6.9	6.8	5.7	6.0	6.7
	European Investment led recovery				5.9	6.1
	Global investment stimulus				5.7	5.3

In the South Eurozone, under all three scenario, the unemployment rate will reduce significantly, as this benefits from additional resources allocated to investment, via the Juncker Plan. However, for the South Eurozone, the global investment stimulus scenario is the one that leads to the lowest unemployment, as unemployment as percentage of labour force decreases from 17.8% in 2012 to 13.3% in 2020. The North Eurozone did not experience a surge in unemployment during the period of economic crisis. The unemployment rate for this bloc will also experience a greater improvement under the alternative investment-led scenarios.

V Conclusions

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 dried up, 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 and development State”, that encourages and leads, providing the vision and the dynamic push for private innovation and structural transformation. Stiglitz and Greenwald (2014) add the very important dimension that successful and sustained growth requires the creation of a learning society and a knowledge economy to increase productivity; public development banks are

an important institutional vehicle for supporting this. Indeed, development banks can help overcome market failures in both financial and knowledge markets simultaneously.

After analysing the roles that development banks can play, as well as exploring the theoretical underpinnings for this, we have simulated the impact of three scenarios, which illustrate the very positive impact that a greater role of development banks - together with a slowing down of the excessive fiscal consolidation that has occurred in recent years - can have on investment, growth and employment, as well as on reducing debt to GDP ratios. These simulations, which have looked both at the European level as well as at a global level via what we have called a global investment stimulus, show even higher impacts on investment, growth and jobs. This illustrates the positive role that alternative policies, including a far greater role for development banks can play.

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Appendix

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 constraints 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).

Assumptions on private investment: Business As Usual scenario and Global Investment Stimulus scenario

Table 1A shows the assumptions made on private investment for the Business as Usual and the Global Investment Stimulus scenario.

Table 1A. Investment as percentage of GDP, selected world blocs and countries, historical data (1990-2014) and projections (2015-2020)

		Historical	Projections
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		1990	1995	2000	2005	2010	2014	2015	2016	2017	2018	2019	2020
European Union³	Business as usual	18,7	16,6	18,6	17,9	16,0	15,3	15,8	16,3	16,8	17,2	17,6	17,7
	Global Investment stimulus							16,0	16,8	17,7	18,5	19,2	19,7
United States	Business as usual	18,8	18,4	20,5	20,3	15,5	15,8	16,2	16,5	16,8	17,0	17,1	17,2
	Global investment stimulus							17,1	18,0	18,6	19,0	19,3	19,5
Brazil	Business as usual	18,0	15,9	15,0	14,2	16,5	16,3	16,2	16,1	15,9	15,7	15,5	15,4
	Global investment stimulus							16,8	17,2	17,4	17,6	17,7	17,8
South America (excluding Brazil)	Business as usual	11,6	18,5	15,7	17,2	18,6	20,7	20,4	20,1	19,8	19,5	19,3	19,1
	Global investment stimulus							20,8	20,8	20,9	20,9	20,9	21,0
India	Business as usual	21,6	22,8	21,0	27,1	28,9	25,4	24,5	24,5	24,3	24,2	24,1	23,9
	Global investment stimulus							25,6	26,2	26,0	26,0	26,0	26,0
China	Business as usual	22,0	29,5	31,1	34,6	40,3	37,9	35,8	35,7	35,4	35,1	34,9	34,7
	Global investment stimulus							35,5	35,8	36,2	36,4	36,6	36,8
South Africa	Business as usual	16,3	13,2	12,7	14,4	16,4	16,7	16,8	16,7	16,4	16,1	15,7	15,4
	Global investment stimulus							17,1	17,4	17,6	17,7	17,8	17,8
Africa low income	Business as usual	11,7	12,0	11,4	11,7	15,2	16,4	17,2	16,6	16,0	15,3	14,8	14,4
	Global investment stimulus							16,9	17,2	17,5	17,6	17,7	17,8
World total	Business as usual	20,3	19,5	19,8	20,5	21,1	21,4	21,4	21,6	21,8	21,9	22,0	22,0
	Global investment stimulus							21,7	22,3	22,8	23,2	23,5	23,8

³ Assumptions made on investment for the European Union under the Global Investment Scenario are the same assumptions made under the European Investment-led Recovery scenario.