



Rebalancing What?

Reforming finance for creative destruction not destructive creation

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policy network paper



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Abstract

Much of the current discussion about 'rebalancing' revolves around the need to reduce the size of the financial sector in favour of industrial policies that would help revive manufacturing. However, rebalancing also requires changing the dysfunctional influence that finance has had on indicators of economic performance in all sectors, including manufacturing. The problem is not only one of short-termism, it is also about the way in which financial activities focused on value extraction have been rewarded above activities focused on value creation - often leading to value destruction. A new relationship between risks and rewards is required, which also rewards risk that the state undertakes when investing directly in innovation and new technologies. This paper analyses these problems, including implications for the Eurozone economy, and provides a set of key policy messages.

About the author

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Summary of key policy messages

- **Rebalancing the economy is not just about reducing the size of the financial sector**, but also changing its effect on indicators of economic performance, how these direct investments, and how the risks and rewards of these investments are assigned.
- **Financial reform should aim to help credit markets create valuation tools which reward the most efficient firms, rather than penalise many of them**, as FINNOV (2010) results suggest has often been the case. In particular, the tradition of linking the economic and financial soundness of a business activity to a single “rating” measure should be abandoned in favour of more structured assessment devices.
- **Complementary to this, arrangements are needed where banks and other investors make ‘pooled’ investments** e.g. technology or sector level (e.g. in all solar energy firms, or all renewable energy firms) rather than much riskier individualised investments (in a single firm in each sector, trying to pick the individual winner).
- **The ‘credit crunch’ created by financial crises tends to penalise the most innovative firms with a higher risk-profile.** In order to make sure that post-crisis growth is achieved, financial reform should aim to help steer public subsidies and different types of support to the firms that actually want to grow, so as not to dilute the impact of such funding.
- **Especially in the US, stock buybacks have been at the expense of investments in innovation.** Prime beneficiaries have been top executives with their “unindexed” stock options that enable them to gain from stock-market speculation and manipulation. This highly financialised business model is detrimental to innovation and should be restrained in Europe by, for example, limiting the scale of stock buybacks, as well as limiting government support to companies that spend their returns on such activities, rather than on investment in human capital formation and innovation.
- **Rather than a ‘patchy’ approach to innovation, a systemic approach is needed building on the important work on ‘systems of innovation’.** This requires not only horizontal links between actors (firms, finance, education, research) but also less hype about any individual actor (VC, SME) and more understanding about the exact role that each actor plays, including the public sector, along the *bumpy risk*-landscape. It also requires each policy to make sure it is making things happen that otherwise would not have (as such both R&D tax credits and the ‘patent box’ are problematic).
- **When high-risk investments around new technology and innovation are financed by the state, the state should be able to reap a direct return.** The return can be used to both finance the losses (picking winners can cover picking losers), as well as make new investments in the future. Such instruments could come in the form of income contingent loans, equity, and returns earned by state investment banks.
- **Public investment in independently managed venture capital (VC) funds is a way to compensate for VC’s fund-raising difficulties as the private financial sector de-leverages**, and also desirable from the perspective of generating economic growth and competitive returns on

public capital. Public input to hybrid VC is, in effect, a way to recapture for the taxpayer a return on state-funded early stage research that could otherwise be captured entirely by private VC funds.

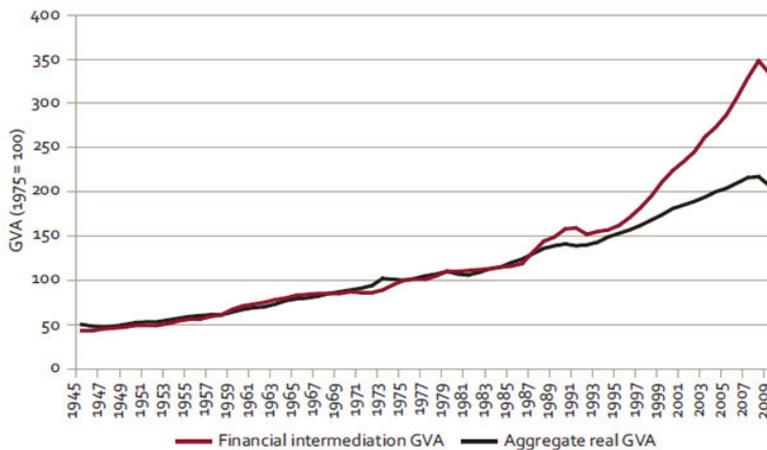
- **The Eurozone crisis is at root also a competitiveness crisis.** When the financial crisis hit, European countries were affected very differently depending on their 'competitiveness'. And debt/GDP ratios will continue to grow as long as growth is not achieved. As such, the solution requires finding concrete mechanisms for productive investments to occur in the weakest countries, with strong criteria about project viability. Financial tools in the European Investment Bank (EIB) are central to these mechanisms, but must be co-financed by the European Central Bank (ECB) in order for the scale to be large enough (Varoufakis and Holland, 2011). This would be no riskier (and more rewarding) for the ECB than its current strategy of acquiring troubled assets from overextended member-state banking sectors.

Introduction: It's not all about the size of the financial sector

Since the financial crisis first struck, there has been increasing attention paid towards the need to rebalance the UK economy. The UK financial sector grew so disproportionately over the last 10-15 years with respect to the 'real economy' that it has exposed national economies to huge risks. When the banking sector inevitably collapsed, there was a realisation that it must now be clawed back. Many are now arguing for an industrial policy that can revive competitive 'real' sectors, and stimulate economic recovery.

Indeed, as can be seen in Fig. 1, the size of the financial sector grew exponentially in the decade before the crisis, as a % of value added (aggregate 'real' value added is approximately the entire economy minus agriculture and finance). This is mainly because the profits of financial companies, i.e. their ability to reap a gain from value created elsewhere (such as innovation in new sectors), have grown much more than those of non-financial ones.

Fig. 1 Financial intermediation and aggregate gross value added compared
(source: Haldane et al. 2010, Bank of England)



The origins of the financial crisis and the massive and disproportionate growth of the financial sector began in the early-2000s when banks began increasingly lending to other financial institutions, via wholesale markets, to make loans not matched by deposits. They lent mainly to hedge funds, private equity and subprime mortgages, as well as derivatives built on these, because the returns were higher than lending to industry or government. They magnified their return on equity by shrinking the equity, and multiplied their capital gains by speculatively investing borrowed funds, endangering their solvency as soon as asset prices fell.

We now know this is because the risks were far higher, but severely under-priced. The result was that banks' assets ballooned, but were increasingly fictitious. When asset prices fell, and bank equity was wiped out - they were so highly leveraged that it required only a 3 percent fall for the major bust to occur. But before that happened, bank assets and profits expanded relative to rest of economy, increasing their value added contribution (Fig. 1), as this is measured 'indirectly' by their interest margin.

This is the part of the story that most people understand, as it has been explained to us in the media, in all sorts of ways (even some great films such as the *Inside Job* and *Margin Call*).

However, the general consensus that the main requirement is to rebalance in terms of the size of financial sector is simply not enough. While rebalancing the economy is one part of the solution, it is also fundamental to ‘rebalance’ the effect that finance has had on how performance is measured, and achieved, in all sectors, including manufacturing. The problem has not been one of only short-termism (an important but old debate), but also about the way in which activities focused on value extraction have been rewarded above activities focused on value creation, often leading also to value destruction (FINNOV DP 2.10).

In a recent EC funded FP7 research project that I directed, called Finance Innovation and Growth (FINNOV www.finnov-fp7.eu), we found various examples—from bank lending, stock market valuations, and venture capital performance— of how finance has negatively affected the performance of the real economy, as well as the valuation of that performance, and misdirected investments in the process.

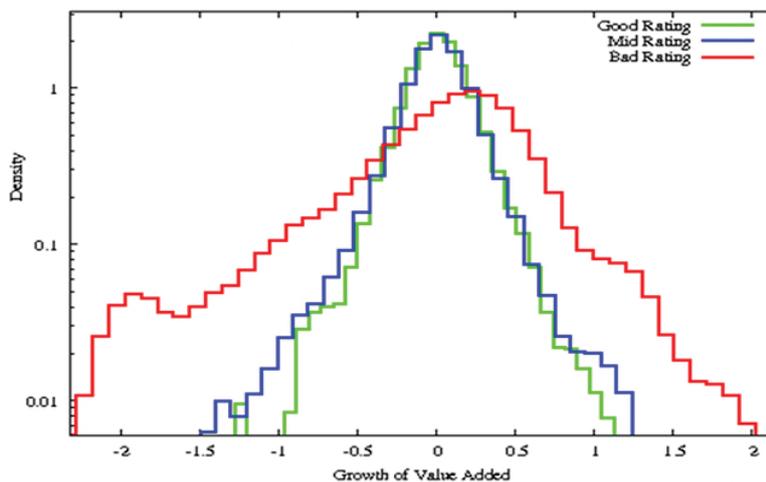
We found, for example, that the credit scores that banks give to companies underemphasise the real health of the companies, as proxied by their productivity (FINNOV DP 4.3, 2010). Indeed we found that the probability of receiving a bad credit score is just as high for a highly productive company as it is for an unproductive company (Figure 2 below, which uses value added as a proxy for productivity, refers to Italian manufacturing firms, though we found it to represent a general pattern).

The problem is that the risk profile of companies does not distinguish where that risk is coming from. Companies spending more on R&D, for example, will inevitably have higher risk, since innovation is so deeply uncertain (Knight 1921) - most attempts at innovation fail. Yet this is an example of ‘good’ risk—a result of engaging with the process of innovation— to be differentiated from ‘bad’ risk that arises simply from weak economic performance, or speculative activities and higher debt (Mazzucato and Tancioni, 2012). Or put another way, it is about speculation and risk-taking aimed at Schumpeterian *creative destruction* not Magdoffian *destructive creation*.

Indeed we also found that after the 2007-2008 financial crisis, it was the most innovative companies in the UK that were hit the hardest by increases in interest rates, again most likely due to their higher risk profile (FINNOV DP 3.5, 2012; Cosh et al. 2009). One implication is that rather than forcing banks to lend to SMEs, as some current ‘banking reforms’ are suggesting (Vickers, ICB 2011), it would be more useful to help banks develop new credit scores that can better reflect the innovative potential of companies, of whatever size, so that innovation related investments are rewarded (and funded) rather than penalised.

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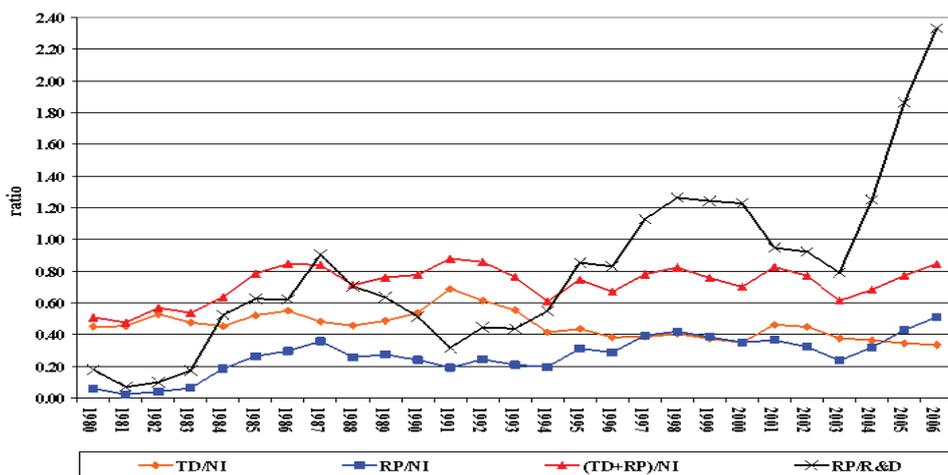
Fig. 2 Credit Scores and Productivity for Italian Manufacturing Firms 1998-2004
(source: FINNOV DP 4.3, 2010)



Second, we found that the increasing trend towards stock repurchases (buy-backs), a result of companies focusing mainly on boosting their stock prices, has been detrimental to those companies' willingness and ability to invest in R&D (FINNOV DP 5.5, 2009, Fig. 3). In the last decade, Fortune 500 companies have spent 3 trillion dollars in buybacks. The reason provided by these companies is that when there are no opportunities for profitable investment, disbursing the returns to shareholders, via buybacks, is the right thing to do (Jensen, 1986). However, some of the biggest repurchasers are in the pharmaceutical (pharma) and oil industries, both areas in which there are major new opportunities for investment (e.g. innovative medicines, renewables).

The main reason for buybacks is to boost the company's stock price and to shrink the balance-sheet so that return on invested capital is increased (a motive that has been reinforced until now by the accounting treatment of R&D as cost rather than investment expense, a convention that still applies to internally generated R&D). In fact, while repurchasing their stock, many of the companies increasingly rely on R&D investments made by public funds. Indeed the reason that an 'innovative' company, Pfizer, recently moved one of its R&D labs from the UK to Boston, was not because Boston has less regulation or lower taxes, but because it has much higher public sector investment in the research base that pharma feeds off, via the publicly funded National Institutes of Health (NIH) (Mazzucato, 2011).

Fig. 3 Repurchases (RP), dividends (TD), net income (NI), R&D 1980-2006
(293 corporations in the S&P500 in October 2007 in operation in 1980, source: FINNOV DP 5.2a, 2009)



Third, we found that venture capital (VC) has, due to its emphasis on returns that are high but quick and low risk, had a detrimental effect on the ability of VC backed companies to produce real value for the economy, i.e. new products and jobs. The gains made by VC, reaped during their 'exit', which occurs principally via an IPO (Initial Public Offering), have been large even when the firms they have invested in go on to do...nothing: e.g. 80% of VC backed biotech companies remain PLIPOs, product-less IPOs (FINNOV DP 5.2a). This is especially problematic in science based sectors like biotech, nanotech and clean-tech which have long lead times and thus require more 'patient' finance (Pisano, 2006). Furthermore, the VC industry has been very aggressive and successful in lobbying for capital gains tax reductions, using the argument that they are so essential for innovation and 'entrepreneurship'- with little evidence to support this. And as in many sectors, capital gains tax reductions have not led to more investment, only to more inequality.

Each of these examples shows how finance has steered investments into unproductive areas, and reaped a large return, with little relation to the actual value created for the economy. As such, industrial policy—now finally back on the agenda—should focus not only on supporting broadly defined technologies and sectors, and the necessary horizontal linkages between different important institutions (e.g. science-industry links), but also on 'shaping' markets so that productive investments

are rewarded rather than penalised, and pure rent-seeking is discouraged—in all sectors (Mazzucato and Shipman, 2012). This will make it more profitable to invest in the real economy than in financial trading around it (Perez, 2012). As argued in Mazzucato (2011), this requires understanding the role of the state in the economy not only as market ‘fixer’ but also, and especially, as market ‘shaper’.

Who are the risk takers?

Rebalancing is also about re-aligning risks and rewards (Lazonick and Mazzucato, 2012). Indeed in the innovation game, the risk taking has become increasingly collective, while the rewards process has become increasingly private. And because innovation is cumulative—innovation today builds on innovation tomorrow—the ability of financial agents to ‘position’ themselves strategically along the cumulative innovation curve, helps to explain their ability to gain a disproportionate share of the returns (Fig. 1). They have been capturing a large part of the integral under the cumulative innovation curve rather than their marginal contribution. The venture capital story above is just one example.

Large shareholders have also reaped a disproportionate reward since ‘shareholder value’ has dominated the way companies are run (Jensen, 1986). Shareholder value theory assumes that it is only shareholders who have no ‘guaranteed return’ (once everyone has been paid), and hence are the biggest risk takers and as such ‘deserve’ large rewards when there is any left over (they are the so-called ‘residual claimants’).

To understand the fundamental role of the state in risk-taking it is important to understand also the ‘collective’ character of innovation in modern capitalism

Yet, as argued in Lazonick and Mazzucato (2012), the state has no guaranteed rate of return for its risky investments in innovation, nor do workers have a guaranteed job even though many continue to accept lower wages in the beginning of their careers with this expectation (Lazonick, 2009). Because the biggest shareholders are increasingly pension funds, insurance funds and others acting for households and other ‘small’ savers, the state is forced to intervene to protect their downside, by purchasing troubled assets and/or bailing-out the companies concerned to avert the trouble. In contrast, employees who take jobs with an untried new technology or business plan run a high risk of losing them if the plan fails, but have lost any downside protection as social insurances are scaled down and labour markets made more ‘flexible.’

To understand the fundamental role of the state in risk-taking it is important to understand also the ‘collective’ character of innovation in modern capitalism. For years we have known that innovation is not just a result of R&D spending, but about the set of institutions that allow new knowledge to diffuse throughout the economy, such as dynamic science-industry links. The systems of innovation literature, pioneered by Freeman (1995), Lundvall (1992), and Nelson (1993) is especially relevant here. There is increasing reliance on such horizontal systems of diffusion as we move to open innovation systems where barriers between public and private are reduced.

But rather than introducing new words, like eco-systems of innovation to describe essentially the same thing, it is now more important than ever to understand the division of ‘innovative’ labour between the different actors in these systems, and in particular, the role of each actor (large and small firms, different types of finance, different types of public funds and institutions) in the context of the very *bumpy risk* landscape in which they are operating.

While the state needs to take risks, it should not be simply absorbing (or even ‘mitigating’) the risk of the private sector but taking the kind of risks that the private sector is not willing to take, and also reaping returns from that risk taking (more on this latter point below). Policy questions should focus on the exact role the public sector play, within and between sectors and institutions, in order to allow things to happen that otherwise would not have. This is not only about the important counter-

cyclical role that public sector spending should have (and unfortunately is not having today due to the austerity ideology), but also about the types of questions that must be posed to each individual policy instrument: e.g. do R&D tax credits make R&D happen that would otherwise not have? Keynes phrased this very well:

“The important thing for Government is not to do things which individuals are doing already, and to do them a little better or a little worse; but to do those things which at present are not done at all.” (Keynes, JM, 1926)

What the ‘systems’ perspective thus needs is more concrete understanding of the role of each actor, the linkages between actors, within and along the risk landscape. It is, for example, unrealistic to think that the highly capital intensive and high risk areas in clean technology, for example, will be ‘led’ by venture capital, or ‘nudged’ by a green investment bank. The history of new sectors teaches us that private sector investments tend to wait for the early high risk investments to be made first by the public sector. Indeed, as I argue in *The Entrepreneurial State* (Mazzucato, 2011), it has often been state spending that has absorbed most of the real risk and uncertainty in the emergence of new sectors, as well as in particular areas of old sectors (e.g. radical new medicines today).

It is also unrealistic to expect large increases in employment from SMEs. Many economists and politicians continually claim that there is a financing gap that hurts SMEs, and UK recovery schemes such as Project Merlin, Credit Easing and Funding-for-Lending which have been focused on raising bank lending to SMEs. Yet SMEs in the UK benefit from close to £8 billion of indirect and direct support (Hughes, 2008; FINNOV, 2012). Cash is not the problem. Many SMEs have no interest in growing, or innovating—suggesting that the problem is also about the demand for finance (to grow) not just the supply (FINNOV DP3.5, 2011). Indeed only about 6-7% of SMEs have an effect on the growth of employment (NESTA, 2009).

What matters for policy is finding a way to target the high growth innovative companies, regardless of their size. And indeed it has been shown that the few that do produce growth and employment are often those that are able to benefit from different types of public investments, both direct or indirect (Hughes, 2008). Yet that funding is diluted when it is aimed at the entire SME category due to the myth (and powerful lobbies) surrounding it.

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It is also important to find direct sources of funding to such innovative firms, and firms that want to grow via other means (including diffusion, and general increases in productivity), rather than indirect routes such as those advocated by the Credit Easing schemes. Indeed, this is one of the key advantages of having a state investment bank, which can both lend ‘counter-cyclically’, and also target those innovative firms that require patient finance, and have the type of risk profile that scares off private banks.

The state’s leading role has not been limited to fixing market failures, or funding ‘upstream’ research. Indeed the internet was not only envisioned and funded by the public sector but also commercialised by it. And many innovative companies have received their early stage financing not from private venture capital but from public early stage financing, e.g. in the USA through the Small Business Innovation Research (SBIR) funds, and in Europe through public funds like SITRA in Finland that funded early Nokia. And 75% of the most radical new drugs (new molecular entities with priority rating) owe their funding, research and also sometimes clinical trials to public sector labs in the National Institutes of Health, with private pharma focusing more on the low risk later stage development (Angell, 2005). And while Steve Jobs and his team of several thousand engineers at Apple were important innovators,

all the key technologies behind the iPhone trace their funding to the state: GPS, touch-screen display, communication technologies, and the internet. None of these 'revolutionary' investments had a 'guaranteed return' at the time the investments were made—which is the very reason that many radical innovations find it difficult to be funded by the risk-averse private sector. Something that the Economist has yet to understand, as evidenced by its constant depiction of the State as a monstrous Leviathan which should: "...should stick to the basics: better schools for a skilled workforce, clear rules and a level playing field for enterprises of all kinds. Leave the rest to the revolutionaries." (The Economist, April 21, 2012).

Yet the returns from these 'revolutionary' state investments have been almost totally private. While this is especially obvious in the pharmaceutical industry, where medicines that are funded from taxpayer money, are often too expensive for the taxpayers to buy (Vallas, et al. 2011), it is also true in other high tech areas, with companies like Apple, which have received major benefits from public funds, both direct and indirect, managing to avoid paying their taxes (NYT, 28/4/2012)

Risks and rewards

Two implications that arise from this analysis regard on the one hand the required organisational change in the public sector for it to play the 'entrepreneurial' role discussed above, and on the other hand the rewards it is able to reap from engaging with the Knightian risk in innovation.

First, an important challenge for government is how to organise those departments that are dedicated to targeting innovation and growth, so that they are more 'entrepreneurial' and hence willing to fail, as failure is an inevitable part of playing the innovation game. Thus, getting the UK Technology Strategy Board (TSB) and the Business Innovation and Skills department (BIS) to be internally structured more like the US government Defense Advanced Research Projects Agency (DARPA), with high level experts working for a 4-5 year period, and being asked to 'explore' new high risk areas with great potential (but also high probability of failure), requires a major cultural change.

As anyone who has worked in the private sector knows, there are plenty of bureaucratic and inertial private sector firms. There is nothing in the DNA of the public sector that makes it less innovative than the private sector. But equally, encouraging innovation and creativity in public sector institutions requires just as much thinking about organisational dynamics as the private sector. Instead, by writing the public sector off as having less potential for innovation, most strategic management theories of innovation have been focused on the private sector, leaving the public sector to simply focus on 'creating the conditions' for innovation to happen in the 'revolutionary' private sector.

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Second, if the state is being asked to engage in the world of uncertainty, with the inevitable wins and losses, then it is only right that when the wins arrive, there is also a return to cover the losses. That is, while state spending on basic education and health should not necessarily expect a direct return beyond taxes, the state's high-risk investments should be entitled to one, precisely because the failure rate is so high for such investments. When they 'win' they should be able to cash in so as to cover state losses when they arise, but also to fund future investments. Indeed, the privatisation of gains and socialisation of losses in the financial sector has been recognised as economically inefficient and

socially unjust (Alessandri and Haldane, 2009) – but the same asymmetry occurs in the real economy, both for new-technology firms and for more mature firms that need external investment in turnaround.

The many successes would include the funding of the Google algorithm via the National Science Foundation (NSF); funding of the internet via DARPA, and funding of most radical new drugs via the National Institutes of Health (NIH)—as well as the funding of nearly all the ‘general purpose technologies’ of the last century (Ruttan, 2006). Thus instead of worrying too much about the ‘picking winners’ problem (an obsession in the UK), a key problem is how to gain when those winners succeed so that the occurrence of picking some losers (again, innovation is uncertain so there will always be some failures) can be covered by the successes, while also allowing reinvestment. Such returns could be reaped via income contingent loans, equity, as well as returns made by national investment banks.

As an operating example: SITRA, a Finnish public funding body invested equity in Nokia early, when its mobile phone venture was still widely viewed as an eccentric aberration by a paper, rubber, and cable company. When Nokia made millions, SITRA received a direct return, which could fund new companies. In Brazil, the national development bank, BNDES, has followed a strongly anti-cyclical lending policy, with major investments in both infrastructure and innovation, and its return on equity is as high as 20%. The Brazilian treasury redistributes most of these gains throughout the economy (e.g. in education and health), with the part that goes back to BNDES used for reinvestment in new technologies and infrastructure, producing a virtuous trajectory of investment, innovation and ‘inclusive’ growth (an uphill battle, but at least one that is being fought).

Thus instead of worrying too much about the ‘picking winners’ problem (an obsession in the UK), a key problem is how to gain when those winners succeed

Innovation, inequality and the Risk-Reward Nexus

While it is now commonplace to argue that growth must be not only ‘smart’ but also ‘inclusive’ (EC 2020), it is important to understand why innovation and inequality sometimes go hand-in-hand. Indeed, while the classical economists (Ricardo, Marx) always studied innovation and the wage/profit ratio together, for years studies of innovation and distribution have been separated. Today, they have been brought back together mainly in terms of the de-skilling question: the way that innovation allows those with high skills to prosper, and those with low skills to be left behind. While there are many valid points in this debate, one problem with it is how it assumes skills are exogenously created.

Instead, it could be argued, that one effect that the financialisation of the economy has had is to penalise those firms that are (endogenously) investing in human capital and skills (Lazonick, 2009). In FINNOV DP 2.12, Lazonick and I present a different framework to study the innovation and inequality relationship which builds on the dynamics behind risks and rewards discussed above. We build a *Risk-Reward Nexus* framework to study the relationship between innovation and inequality. We ask: what types of economic actors (workers, taxpayers, shareholders) make contributions of effort and money to the innovation process for the sake of future, inherently uncertain, returns? Are these the same types of economic actors who are able to appropriate returns from the innovation process if and when they appear? That is, who takes the risks and who gets the rewards?

We argue that it is the collective, cumulative, and uncertain characteristics of the innovation process that make this disconnect between risks and rewards possible. When, across these different types of actors (in the ‘eco-system’), the distribution of financial rewards from the innovation process reflects the distribution of contributions to the innovation process, innovation tends to reduce inequality. When, however, some actors are able to reap shares of financial rewards from the innovation process that

are disproportionate to their contributions to the process, innovation increases inequality. The latter outcome occurs when certain actors are able to position themselves at the point where the innovative enterprise generates financial returns; that is, close to the final product market or, in some cases, close to a financial market such as the stock market.

These favoured actors then propound ideological arguments, typically with intellectual roots in the efficiency propositions of neoclassical economics (and the related theory of 'shareholder value' discussed above), that justify the disproportionate shares of the gains from innovation that they have been able to appropriate. These ideological arguments invariably favour financial contributions to the innovation process over both worker contributions and taxpayer contributions. Ultimately, precisely because innovation is a collective and cumulative process, the imbalance in the *Risk-Reward Nexus* not only results in greater inequality but also undermines the innovation process itself. Finding a way to realign risk taking with rewards is thus crucial not only for decreasing inequality but also for fostering more innovation (we discuss concrete measures in Lazonick and Mazzucato, 2012).

Finding a way to realign risk taking with rewards is thus crucial not only for decreasing inequality but also for fostering more innovation

Implications for rebalancing in Europe

The effect that financial markets have had on misguiding investments away from productive 'real' areas, is also evident in the Eurozone sovereign debt crisis. Greece's performance in the early 1990s, during the beginning of the Euro, was hardly worse than it is today. Yet since what determined the ratings of its banks and sovereign bonds was not the real health of the country (e.g. its low productivity, or low investments in long run growth measures), but short-term financial measures, Greece's problems were not detected before it had absorbed unsustainable amounts of credit. The indicators of performance did not help to steer the country in the right direction.

And the fact that it is today the short-sighted bond (financial) markets that are determining the recipe for the solution to the Eurozone crisis, means that the proposed solutions for the weaker EZ countries (austerity and different types of structural reforms) are not allowing the much needed productive investments to happen: investment in skills, technology and other determinants of productivity—areas which the 'surplus' countries like Germany have invested more in (Mazzucato, Guardian, 17/5/12).

When the financial crisis hit in 2007-2008, European countries were impacted in very different ways depending on whether they were in the Eurozone, and thus without a proper central bank willing to act as a lender of last resort (the European Central Bank has refused, mainly due to pressure from Germany), and depending on their 'competitiveness'. The UK was spared speculation not because it is more 'competitive' but because the probability of default is almost nil in a country with its own currency backed by a central bank. And 'surplus' countries like Germany were hit less hard due to their stronger 'competitiveness'.

But what determines competitiveness? It is often argued that Europe is not 'balanced' because the 'surplus' countries like Germany are so much more 'competitive' than the 'deficit' countries like Greece, Portugal, Spain and Italy. The belief is that Germany is more competitive because of its ability to contain wages during a period in which productivity was rising—the Schröder reforms. The medicine that is thus prescribed is either wage increases in Germany (difficult to impose top down) or wage restraint in the deficit countries which are also seen as having a bloated public sector. To that end, wages are falling in the deficit countries, but by reducing demand, these wage reductions are only hurting the ability of

the economies to take off—and encouraging a ‘race to the bottom’ which will not serve Europe in the long-run.

However, besides the fact that unit labour costs in Germany are not so low when welfare contributions are included, this wage-based analysis ignores other key sources of German success: Germany’s higher than average R&D spending, investment in human capital formation, dynamic links between research and industry through the *Fraunhofer* institutes, and its dynamic system of ‘patient’ finance through its national investment bank (KfW) and regional state *Landesbanks*. It is coordinated and systemic investment in these areas that have nurtured German economic prosperity, and allowed it to be today one of the ‘greenest governments ever’.

Indeed, the much lower levels of productivity in countries like Italy and Greece are due precisely to the lack of such investments, despite levels of national saving and capital inflow that could have mobilized funds for them. Of course it is not all simple, and details matter, as seen by the contrast between the German *Landesbanks*, which invested patiently in regional industries (with the exception of WestLB, which tried to become a US-style investment bank) and Spain’s *Cajas*, which had similar ownership arrangements but invested impatiently in speculative real estate, leading to the *Bankia* disaster.

The medicine for recovery must thus focus on how to reform both the national and the EU financial system in a way that will allow such investments to occur. The European Investment Bank, and its European Investment Fund must focus on co-financing both infrastructure and innovation. National policies must focus on education and human capital formation— which instead are actually being cut due to the current ‘fiscal compact’ criteria. EIB investments should be organised around viable projects that can reap a return (in contrast to the European Structural Funds which have not always focused on viability criteria for projects).

Co-financing from national budgets should be counted as investment, providing security for any public debt incurred. Public and private R&D expenditure, still counted in most countries as a current cost, should be treated as investment, a move the US plans to make in its national accounts from 2013.

Mechanisms must also be found to allow returns on these investments to find their way into state treasuries—for redistribution and reinvestment— rather than simply running away into private hands.

In this way, ‘smart’ and ‘inclusive’ growth - at the heart of the EU’s 2020 strategy, but often placed in conflict with each other under present strategies - have the potential to go hand-in-hand (e.g. the Innovation Union agenda of EC2020 is not easily mixed with the austerity agenda of the finance ministers in ECFIN). Without such reforms, finance will continue to reap rewards while contributing little to real value creation and we will remain simply wed to trendy talk about growth, with no real mechanisms to make it happen for the long-term.

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