INTRODUCTION

FINNOV is a 3 year EC funded research project that studies the relationship between financial markets and the real economy, with an emphasis on how finance can support innovation and long term, inclusive, sustainable economic growth.

The project has explored how the financial sector has created dysfunctional incentives and opportunities across a range of sectors that can undermine productive investment. This dysfunction goes beyond simple short-termism, to situations where unproductive value extraction is encouraged at the expense of value creation.

The banking, sovereign, and now EuroZone crises threaten global economic stability with potentially major social consequences. Part of the problem is that our collective understanding of financial markets remains stuck in the past. It emerged at a time when financial technologies for pricing and (re)trading assets and risk were immature, national markets were relatively unconnected, and banks and firms did not have electronic markets to assist them in the allocation of resources. Under such conditions, private and public risks and rewards were generally aligned, and conventional economic theory could reasonably assume that markets would self-correct, and that market-based trading, combined with private ownership of assets, would ensure the convergence of public and private benefits.

Today, however, changes in markets and financial technologies (Nightingale & Spears, FINNOV DP 8.1) have allowed risks and rewards to be separately managed, creating the potential for strategically positioned actors to profit by transferring risks to other stakeholders - notably employees, small savers and the state. Haldane (2010), for example, has suggested that the social wealth transfer generated by banks in the UK being ‘too big to fail’ amounted to approximately £50bn in 2009, on top of approximately £140bn of lost GDP generated by the crisis. These changes, combined with an ideological bias against regulation, have dramatically altered “the social distribution of risks and rewards” (Lazonick and Mazzucato, FINNOV DP 2.11; Nightingale and Poll,
... one effect of these changes has been to generate an increasing “financialization” of the economy, which has allowed parts of the financial services sector to extract and privatize value, while socializing the risks it generates.

For example, one effect of these changes has been to generate an increasing “financialization” of the economy, which has allowed parts of the financial services sector to extract and privatize value, while socializing the risks it generates. This sort of “risk-shifting” activity has always happened, but today it is happening at such an extent it is undermining the rest of the economy. The focus on value extraction, manifested by rising corporate profitability at the expense of stagnant or falling real wages, has contributed to increasing inequity in the distribution of income. In traditional economic thinking this change might not matter, but today it has become a major problem as low levels of personal savings no longer act as a ‘buffer’ when financial downturns occur, making catastrophic failures more pronounced, as was seen in the subprime mortgage crisis.

What might be called normal financial crises have occurred on average every 20 years, causing dramatic reductions in GDP (BCBS 2010). Today, systemic financialization magnifies, rather than corrects, the adverse shifts in income distribution in the booms that typically precede a crisis. The boom in trading that preceded and precipitated the subprime crisis, for example, disproportionately benefited the financial sector compared to the rest of society (see Figure 1).

Financialization can also destabilize the economy and undermine economic growth in other ways (Lazonick, FINNOV DP 5.6 and Lazonick, FINNOV DP 5.7). Growth relies to a large extent on productivity enhancing innovation, which typically requires investments of patient capital and a distribution of incentives that rewards everyone who contributes to the process – including workers and taxpayers. To be effective, these incentives and rewards need to be roughly commensurate with the money, time and energy that they contribute and put at risk.

The current financial system often promotes impatient capital, which eschews long connections with investment projects. Practices such as corporate stock buybacks to attain short-term boosts in share prices, premature initial public offerings or trade-sales of startups, the use of high leverage to amplify returns at the long term expense of firms, workers and pension funds, and excessive executive pay at the expense of workers, taxpayers, and long-term shareholders are all symptoms of this problem (Lazonick and Mazzucato, FINNOV DP 2.11; Lazonick and Tulum, FINNOV DP 5.5).
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The current financial crisis has dramatically exposed flaws in the conventional economic analysis of these processes and the policies and regulations that support and control them. These flaws include erroneous ideas such as the notions that (1) markets are automatically self-correcting, (2) unregulated markets encourage superior economic performance, (3) lightly-regulated labor and capital markets ensure an income distribution that promotes efficient allocation with social justice, and (4) modern financial technologies generate a socially optimal distribution of the risks associated with rewards. Previous economic crises, and the theoretical criticisms that they incited, had already challenged these assumptions, but the dominant model of economic thinking has not absorbed these lessons and all in all has maintained its established doctrinal principles and associated policy framework (Cooper, 2008; Shiller, 2008; Perez, 2002). As a result, certain myths about the role of the financial system in supporting innovation-led growth have been created. In this FINNOV policy brief, we debunk the most egregious of these myths. We then suggest some ways of reforming the financial system to help move the economy out of the current crisis and into a period of more creative, sustained and sustainable innovation-led, inclusive, equitable growth. (European Commission, 2010).

Myth 1: “Markets are the best way to co-ordinate economic activity; which is why, for example, the USA is more innovative and grows more than Europe.”

While markets are useful in allocating some resources some of the time, they don’t always self-correct and are dependent on other forms of economic co-ordination. Well-developed markets are typically the outcomes of decisions about the allocation of resources made by governments and businesses, both of which insulate their internal transactions from market forces. Long-term economic success involves the coordination of the investment strategies of businesses and governments so that jobs are plentiful, capital is readily available for projects that can generate long-run returns, and households have the disposable income to benefit from, and
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Government policy-makers should reject “the myth of the market economy” and recognize the important role played by the State in supporting and encouraging innovation.

Government investment often operates in technological and market landscapes that the business sector does not dare to enter generate demand for, well-developed product markets. From this perspective, the reason the USA is more successful and innovative than Europe is that it is less, not more, market-based. The US federal government, for example, spends considerably more supporting innovation than do governments in the EU, and this spending is often ‘mission orientated’ and targeted at specific problems (Mazzucato, FINNOV DP 2.8). The US Federal Government spends 2.6% of a much larger per capita GDP on research (GERD), compared to only 1.3% on average in the EU. Early stage funding for innovation is also more heavily supported by government investment and subsidies in the USA than the EU. Approximately eight times as much public as private business investment goes into early stage technology development in the USA. In the EU investment in research and technological development is more market-based – and demonstrably less effective.

The realization that alternative forms of co-ordination can be more effective complicates policy making. Some institutional configurations are ineffective, and can even have a negative impact on innovation and growth, particularly if the benefits of innovation are captured by a small minority of economic agents at the expense of the performance of the overall system (Mazzucato, FINNOV DP 2.8, for privatization in CEE see Estrin, Hanousek, Kocenda and Svejnar, FINNOV DP 6.6).

- Government policy-makers should reject “the myth of the market economy” and recognize the important role played by the State in supporting and encouraging innovation.

- There is now considerable evidence not just for the damaging presence of short termism in financial markets, but also that current financial indicators have a bias against innovative, high potential firms. Governments may therefore wish to adopt selective policies to support firm growth.

- However, the quality of the institutions that form an innovation eco-system is more important than their quantity. Governments should audit and regularly evaluate the channels that they use to support R&D, innovation and other business investment. Evaluations should be transparent and independent. They should take into account long-term and distributional effects, as well as identifiable social returns.

Myth 2: “Governments can't pick winners”

The reality is that many ‘market’ economies make strategic decisions about which industries to support and channel substantial investments to them. These investments are not always successful, particularly when they focus on supporting uncompetitive national champion firms. But on many occasions they are, and this type of industrial strategy is the principal means by which radical new growth-promoting technologies have been introduced. Government investment often operates in technological and market landscapes that the business sector does not dare to enter (Mazzucato, FINNOV DP 2.8). Government support may be used to restructure old
industries and launch completely new sectors in areas such as telecommunications, semiconductors, advanced computing and biotech. FINNOV research shows that in Germany and France, government support had a major positive impact on their biotech sectors (Cárdenas, Sakinç & Montalban (2011 - FINNOV DP 5.8). The US biopharmaceutical industry would not exist without massive support from the National Institutes of Health, whose budget is now $31 billion per year and which dates back to 1938 (Lazonick and Tulum, FINNOV DP 5.5). In these knowledge-based, capital-intensive industries, those nations with more market-based capital allocation institutions have been noticeably less successful (Gleadle, Parris, Simonetti & Shipman, FINNOV DP 8.3).

- The success of investments in innovation is always uncertain, its impact can be difficult to measure, and sometimes government support is ineffective or even counterproductive. However, major successful innovations are almost always associated with some degree of governments support. Without such support, a society will have to forego innovation. Governments have a key role in investing strategically over the long term in areas where businesses do not, or cannot, invest, such as pre-competitive stages of technology development.

Myth 3 “Private VC funds drive innovation”

The reality is that today over half of early stage VC investment in Europe is provided by “hybrid” funds that are supported with public money. They are needed because private VC funds have performed poorly and now have trouble raising enough money to reach the size needed to be commercially viable (Meads, 2012). There is substantial ‘tax expenditure’ on private VC via generous tax breaks, notably through its taking of profit (including profit from speculative trading) as capital gain. Moreover, research shows that the distribution and returns of VC investment are uneven across regions and sectors; that overall VC investments in early stages are declining, and that this is not an effect of the current crisis (Mina and Lahr, FINNOV DP 3.2). Even in areas such as clean-tech, only a minority of VC-backed firms has patents, and many do not perform any better than the non-VC-backed firms, rising concerns about how well VC supports innovation (Parris & Demirel, FINNOV DP 2.6).

Furthermore, while it is fashionable to claim that public VC funds perform poorly, this myth confuses the fact that while government-run VC funds perform poorly, hybrid funds (in the UK at least) can perform well and sometimes better than private funds (Cowling et al, 2011). Public-backed VC funds and R&D tax incentives can provide an effective policy to sustain innovation and growth of European firms (Revest and Sapio, FINNOV DP 4.1).

- The role of VC has to be considered within the overall architecture of innovation financing, which includes complementary and alternative instruments. Among them, corporate venture capital, technology development contracts and intermediate R&D organizations can be effectively used to remedy the limitations of the pure VC model (Mina,
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.

- Public investment in independently managed VC funds is not only necessary to compensate for their fund-raising difficulties as the private financial sector de-leverages, but 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.

### Myth 4 “More entrepreneurs and SMEs are needed to drive economic growth and innovation”

While some SME’s and entrepreneurs contribute to innovation and growth, most do not and the ones that do are atypical. The majority of start-ups end up as marginal, undersized, poor performance enterprises that can drive down profits, increase factor prices for high-potential firms, confuse investors and fail to generate benefits commensurate with the amount of public support they receive (Nightingale and Coad, FINNOV DP 8.5). Output and employment growth are overwhelmingly generated by a small fraction of SMEs which enter a high-growth phase several years after foundation (Storey, 1996). Similarly with R&D spending, the ONS finds that in the UK, the largest 10 business R&D spenders accounted for 34% of all UK R&D in 2009 and the largest 50 spenders accounted for 56%. The many thousands of independent small and medium sized businesses employing fewer than 250 people accounted for only around 3.5% of total R&D expenditures.

In a study of the US pharmaceutical industry, Mazzucato and Parris (FINNOV DP 2.9) support the findings in NESTA (2009), that only a small fraction of high growth firms have a significant effect on innovation and employment, and further that the relationship between R&D and growth, central to the EC 2020 strategy, holds strongest for a particular subset of high growth firms during periods of fierce competition.

These and other results suggest that it is not clear that the economy needs more new firms. It needs better firms. Market entry in the EU is already very high and possibly excessive at approximately 20% a year. The EU suffers from barriers to growth for its firms, not barriers to entry, and the policy objective should be to create better, not more, SMEs.

- Blanket public support for ‘SMEs’ via subsidies and tax breaks is misguided and is often based on unrealistic expectations of their role in the economy.

- Policy must identify those firm-specific characteristics, which differ between sectors (e.g. alliances), that need to be combined with ‘high growth’, in order for the ‘gazelle’ characteristic to become useful to policy makers.
Credit ratings and other practices to predict default pay disproportionate attention to short term financial factors, favoring a perverse mechanism whereby real and longer-term prospects of firms, including their productivity, do not play a significant role in investment decisions of banks and financial institutions.

In terms of facilitating credit for SMEs, it is important to note that while the financial crisis has dramatically worsened access to credit, at the beginning of the downturn, UK firms for example, expressed relatively more concerns about demand than financial constraints (Cosh et. al., 2009).

Nonetheless, to increase access to credit for the most innovative firms in the economy, of all sizes (but especially SMEs which face greater financial constraints than large firms), it is fundamental to ensure that banks positively value long-run productivity-increasing investments by firms. Instead FINNOV research finds that credit scores, for example, often have no relationship to measures of industrial performance, such as productivity (Bottazzi, Secchi and Tamagni, FINNOV DP 4.2)—most likely due to the higher risk profile of those firms that engage with innovation.

Credit ratings and other practices to predict default pay disproportionate attention to short term financial factors, favoring a perverse mechanism whereby real and longer-term prospects of firms, including their productivity, do not play a significant role in investment decisions of banks and financial institutions (Bottazzi, Grazzi, Secchi and Tamagni, FINNOV DP 4.3).

- Bank lending to innovative firms of all sizes will increase only when credit scores do not penalize the higher risk associated with long-term productivity enhancing investments.

Myth 5 “The Stock Market only moves funds from investors to firms”

While the stock market sometimes provides long-term investment capital to firms, its primary role has always been to permit owner-entrepreneurs and their financial manners to exit the firms that they have built up, leaving professional managers in control of resource allocation (Chandler, 1990). In fact, since the mid-1990s net equity issues by industrial corporations in the United States have been negative as the practice of share buybacks has become systemic. Although buybacks are less ubiquitous in Europe, the practice has become common among major corporations, with UK firms such as BP, Vodafone, GSK, and AstraZeneca in the forefront. Through share buybacks, stock markets move money from firms to investors. This mode of financialized business behavior often comes at the expense of investment in innovation and can even result in throwing large numbers of skilled and experienced people out of work. Even if one were to accept the highly contentious arguments that companies should do buybacks to “create value for shareholders”, it is not clear why these extra distributions should not take the form of dividends, which reward stable shareholding, rather than buybacks, which reward shareholders who buy and sell, i.e. volatile shareholding (Gleadle, Parris, Simonetti and Shipman, FINNOV DP 8.3). In the case of the United States it is clear that the primary motivation for buybacks is to manipulate a company’s share prices, with the top executives who make these allocation decisions being prime beneficiaries of these price boosts as they exercise their ample stock options (Lazonick, FINNOV DP 5.6 and Lazonick, FINNOV DP 5.7).
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It is also essential to take into account the heterogeneous composition of investors. It is often claimed that institutional investors are only motivated by the quest for profitability in the short-term and do not encourage managers to be involved in strategies of innovation. Others claim that these investors, because they hold large equity stakes, will monitor managers and reward innovation. Working on a sample of top innovative European companies over the period 2002-2009, FINNOV research shows that companies have higher R&D ratios when institutional investors or independent investors dominate their ownership. They have lower R&D ratios when impatient investors, i.e. investors seeking for short-term profits, dominate their ownership. These results are consistent with the power of independent and long-term investors to motivate managers to make adequate long-run investments such as R&D.

- Far from being myopic, institutional investors can influence firms to be more innovative.

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Myth 6 ‘Best Practice’ risk management makes the financial system safer"

‘Best practice’ risk management might seem like a good idea, but when too many economic agents adopt the same risk-management technologies, the system becomes correlated and increasingly fragile. Many financial technologies depend, in part, upon market participants’ beliefs and expectations, creating the possibility for feedback-loops during which correlations can converge (Soros, 2008). When this happens the assumptions underlying risk-management technologies fail to hold, creating the potential for catastrophic failures. As a result, the potential for a crisis can get worse if everyone uses the same technology (Nightingale and Spears, FINNOV DP 8.1).

- Policy makers should avoid ‘in-breeding’ and encourage diversity.

Ensuring diversity and heterogeneity in business structures helps to prevent a ‘risk culture’ from becoming a monoculture. Similarly, risk management models drawn up by individual firms can underestimate risks arising from interactions with other firms. In interbank lending...
relationships, for example, higher connectivity can increase financial fragility and systemic risks, generating larger bankruptcy cascades (Tedeschi, Lori and Gallegati, FINNOV DP 7.5 and Tedeschi, Mazloumian, Gallegati and Helbing, FINNOV DP 7.3). By contrast, higher bank reserve requirements stabilize the economic system by decreasing fragility and dampening avalanches.

Similarly, the strengthening of non-financial firms’ ‘internal controls’ following the Enron and Parmalat scandals and dot-com bubble, and the development of financial firms’ ‘value-at-risk’ models did not prevent a substantial underestimation of systemic risk and overestimation of the extent to which business and government had transferred this risk to financial markets. The shift to ‘real time’ mark-to-market asset valuation amplified rather than alleviated the tendency to crisis (Mazzucato and Shipman, FINNOV DP 2.10). As a consequence, sharing quantified risk information with regulators will be insufficient to address systemic risks and alternative approaches may be more useful. For example, ring-fencing, raising capital requirements, and legally separating executive and financial-investor responsibilities may be more effective.

- Regulation should return to simple, enforceable rules that rule out certain forms of risk-taking or risk-transfer, and be aware of the limits of quantification of risk.

CONCLUSION

The recent financial crisis has demonstrated in the most “painful” way how little we know about the effects of the nature and practices of the financial system on the productive economy and its future prospects for sustainable and equitable growth.

FINNOV research makes a timely contribution by helping to fill this knowledge gap. In so doing, this policy brief addresses several “myths” around the role of the financial system and based on empirical evidence it offers useful policy insights for future financial reform.

In short, FINNOV researchers have shown how financial innovation has contributed to the increasing “financialization” of the economy where economic agents tend to focus on practices of value-extraction (e.g., stock buybacks) aiming at quick, yet unsustainable, short-term gains, rather than on practices of value-creation (i.e. public VC) which could contribute to long-term, sustainable and equitable economic growth. Financial system reform should aim at aligning the financial system and its practices with the real, productive economy of value-creation.
FINNOV REFERENCES

WP 2 SELECTION

WP3 EXPLORATION

WP4 PERFORMANCE

WP5 GOVERNANCE
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WP6 ASSETS

WP7 AGENTS

WP8 TRAJECTORIES

OTHER REFERENCES
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