

Policy Brief

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This Policy Brief has been elaborated under the EU-funded project **PLATON+** (www.platonplus.net) which aims to:

a) communicate socio-economic research results to policy makers, Civil Society Organisations and business communities across Europe, and

b) show ways of collaboration and bring into contact socio-economic researchers and researchers from other disciplines.

PLATON+ Policy Briefs communicate socio-economic relevant research results and key policy recommendations in a concise and non-technical format to policy-decision makers, Civil Society Organisations (CSOs) at European, national and regional level.

This Policy Brief discusses key findings and policy implications provided by the EU project “**Financial Systems, Efficiency and Stimulation of Sustainable Growth**” (**FINESS**) and “**Finance, Innovation & Growth**” (**FINNOV**) both funded under Theme 8 “Socio-economic Sciences and Humanities” of the 7th Framework Programme (FP7-SSH).

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Financial Integration and Growth

Research context

Financial integration has been an ongoing process in Europe. This process is important as the financial system allocates resources from agents which have a surplus to those which have a shortage of funds. It can be defined as the set of markets, intermediaries and infrastructures through which households, corporations and governments obtain funding for their activities and invest their savings. Therefore a well functioning financial system contributes to allowing the economy reach its growth potential as it ensures that the best real investment opportunities receive the necessary funding. An efficient financial system fosters the accumulation of capital, enhances risk sharing and improves the diversification of risk. Integration of the financial system generates competitive pressures on financial intermediaries, creates economies of scale, increases overall market liquidity and improves the scope for diversification and risk sharing. This integration has impacts on the broader economy in terms of growth, employment and competitiveness.

Research context

Financial market integration and macroeconomic performance

Banking systems, innovation and firm performance

Financial market integration and policy efficiency

Further reading

The importance of the financial system has meant that the system and its degree of integration have received special attention in European public policy in recent years. The functioning and integration of this system also has implications for the European Central Bank (ECB) as it affects the functioning of the euro area financial system due to the crucial role it plays in the implementation and transmission of single monetary policy and so the ECB's safe guarding of financial stability.

The degree of integration varies considerably across different market segments and has been affected by the introduction of the single currency. In the euro area money market, the market for interbank short term debt and deposits, the standard deviation of lending rates across the euro area countries fell close to zero after the introduction of the euro and have remained there. The large-value payments system (LVPS) underwent sustained integration with the number of LVPS

falling from 17 to 3 between 1998 and 2007 with 12 being eliminated with the introduction of the euro. The number is expected to fall to 1 with the introduction of the TARGET2 system, the joint gross clearing system of the European System of Central Banks (ESCB) that unifies the technical infrastructure of the 26 central (note-issuing) banks of the European Union. The introduction of the single currency and so removal of exchange rates meant that yields of government bond markets are increasingly driven by common factors. It also facilitated the development of the corporate bond market. The euro area equity and corporate banking market has also seen a significant degree of integration. The retail banking market does however continue to be fragmented.

This degree of integration, the ECB and EU combined policy of further integration and the effects of integration on future growth raises a number of important issues such as the effect of financial integration on macro economic performance. *The role of finance in innovation, the effective operation of the credit and financial markets that supply finance, monitor and redistribute the returns to innovation will be essential in meeting the objectives of the Lisbon agenda and enhancing the long term economic performance of Europe. Policy efficiency in relation to financial market integration is an increasingly important issue.*

This Policy Brief summarises the key research findings and policy messages generated from two research projects funded by the European Commission: “Financial Systems, Efficiency and Stimulation of Sustainable Growth”(FINNESS) and “Finance, Innovation & Growth” (FINNOV) both funded under Theme 8 “Socio-economic Sciences and Humanities” of the 7th Framework Programme (FP7-SSH). Both projects analyse the relationship between financial markets and economic performance, namely the role of the financial structure in improving efficiency and sustainable expansion of start up firms, but FINNESS deals with all firms while FINNOV deals only with the effectiveness of the financial system in supporting innovative and knowledge generating firms:

- the FINNESS project is concerned with the effect of integration of financial markets on growth and the degree of this integration in European markets, while
- the FINNOV project is focused more broadly on changes in financial systems, not just on integration.

Financial market integration and macroeconomic performance

The literature on the effect of finance on growth has shown that *sectors and firms that depend more on external financing for technology related reasons grow faster in countries in which banks extend more credit to the private sector, stock markets are larger and accounting standards are of a higher quality.* Empirical analyses suggest that industries in countries with more developed financial markets and more open to trade are able to adopt new production technologies more quickly. This may be part of the explanation for the relative acceleration of productivity growth in the US as compared to European Union after the mid-1990’s. This growth was concentrated in sectors which were big users of information technology and research and development and would not have been possible without the efficiency with which US financial markets channelled scarce capital to start up firms in these growth industries.

This role of the financial markets is also related to the Schumpeterian hypothesis that finance fosters growth by stimulating creative destruction. In this hypothesis financial markets help to channel scarce capital from declining industries to firms, entrepreneurs and sectors with good growth prospects. Since this capital is allocated to sectors that earn higher returns, financially developed economies converge faster to the efficient production frontier and experience higher overall productivity growth. There is also evidence that more firms enter industries with large growth opportunities in countries with more developed financial markets. In relation to financial integration, evidence shows that increased competition in the banking sector may improve the efficiency of financial markets and contribute to higher economic efficiency and growth.

In terms of developing countries a major potential source of gain would be through the alleviation of capital scarcity that financial market liberalization would allow. This would allow flows from capital-abundant to capital-scarce countries and would accelerate economic growth as it would allow low-income countries to expand investment beyond their level of national savings. Evidence on this is mixed which indicates that certain threshold conditions have to be met before a country can benefit from financial integration. These threshold conditions are related to institutions and governance; specifically they are related to domestic financial sector development, regulation, general institutional quality, a stable macro-economy and the degree of openness to trade. If these conditions are not favourable before integration it can hamper countries' subsequent development as it is the interaction between financial integration and threshold conditions that determines the growth outcome.

However, this is not a static condition where lack of favourable conditions should prevent liberalisation. There is evidence that cross-boarder financial integration itself positively contributes to domestic financial sector development, the quality of institutions and macroeconomic stability. There is potential for a substantial long term economic payoff via the collateral benefits by these indirect effects for these economies. These collateral benefits of integration will ultimately express themselves in Total Factor Productivity (TFP) as it results in more efficient allocation. These results on TFP have been shown to be statistically significant and positive. Financial integration is also shown to have a disciplining effect on a country monetary policy as, if international capital flows become more important for national economic development and if they respond negatively to bad monetary and financial policies, governments may be induced to conduct better macroeconomic policies. Equity market liberalisation also appears to have had a robust positive effect on economic growth. These effects may not be universal as the European experience may be much more positive in terms of the relationship between financial openness and economic growth.

In an analysis of the relationship between real Gross Domestic Product (GDP) per worker and financial integration/development in 26 European countries over 35 years, which contained significant cross country heterogeneity and cross section

dependency, a positive and significant effect of real GDP per worker on European financial integration and financial sector development was found.

Research on equity market liberalisation shows that it caused a robust and statistically significant increase in economic growth even when controlling for standard variables from economic growth research. The magnitude of the increase, one percent in annual real GDP per capita growth, was such that it lent support to the view that financial liberalisation is intertwined with both macroeconomic performance and financial development. This does not account for the growth effect of liberalisation as this is still positive and statistically significant even after controlling for development and other reforms.

Another important point is that financial liberalisation allows and enhances capital flows in the form of Foreign Direct Investment (FDI). This can yield productivity gains in recipient countries through the transfer of technology and managerial experience into the host economy as well as increasing competition for domestic firms. There are also beneficial effects for the interaction between foreign firms and local suppliers and customers.

Banking systems, innovation and firm performance

Financial markets are driven by the real economy but they also have a profound impact on it. These markets impact on the process of innovation and the way in which different firms in sectors exploit innovations. The stock markets valuation of innovative versus non-innovative firms affects resource allocation between these firms so as to represent a key transmission mechanism from the financial to the real economy. If market selection works and if innovation leads to greater efficiency, there should be a positive relationship between innovation and market value.

An analysis of the pharmaceutical industry showed that not all firms that invested in research and development and patenting benefit. Innovative efforts only lead to higher sales growth for firms that are small persistent innovators and engage in alliances with other firms. This suggests that market selection operates on a broad mix of firm characteristics rather than innovation only.

Stock market prices are driven by expectations about future firm growth. A key question is does innovation positively affect these expectations so that firms are rewarded by the stock market for their investments in innovation? Or are they penalised due to the risky and uncertain investment nature of the R&D process? In the present recession venture capital and research and development expenditure is declining. In the long run this may lead to more efficient resource allocation and stronger economic structures. In the short run however market selection mechanisms must be effective and able to distinguish between unsustainable businesses and those that are experiencing difficulties but are viable in the long term. Evidence from research on small and medium sized enterprises in the United Kingdom showed a large decline in expected growth and noted constraints on the availability of finance. It appeared that innovators had experienced more difficulty than non-innovating firms from the rising cost of credit; this is a likely consequence of the increased risk aversion of lenders.

Further research on Italian firms has shown that it is not the most productive/most profitable or fastest growing firms that receive the most credit. Differences in credit systems and of financial markets shape credit flow channels and this influences the survival and growth of firms. Evidence indicates that risk assessment devices have devoted too little attention to important economic rather than financial factors. The result of this is a failure of the market to select the best performers and this allocate capital efficiently.

Competition within banking systems has been an important policy objective for Europe in recent years as it is believed to have the potential to improve overall economic performance. Industrial organisation theory suggests that lower market power in banking leads to a higher credit supply at lower cost. It has also been shown that capital accumulation is slower in uncompetitive banks compared to competitive ones with credit more likely to be rationed, more stringent rationing and excessive monitoring. If bank competition increases then access to funds for riskier firms (including start ups) increases and prices decrease. There is also evidence that foreign banks raise competition and also bring spillover effects such as new financial services, management innovations as well as better bank regulation and supervision. Research on 110 European manufacturing sectors across 26 EU members confirms the beneficial effects of bank competition on firm growth which is a major driver of product market competition, innovation and productivity growth.

In relation to the effect of foreign bank entry has on the financial system and the supply of credit, the consensus view has been that it is beneficial for firm creation. This is believed to be a result of foreign banks greater efficiency, access to international credit markets, efficiency of allocation and reduced sensitivity to idiosyncratic shocks. However research on foreign bank entry in Eastern Europe, which has the world's highest level of foreign bank presence, on the rate of firm creation has shown that not all borrowing firms benefitted equally. Foreign banks were at a competitive advantage in lending to transparent firms with a long credit history while domestic banks were better suited to "relationship lending" to opaque borrowers in industries with higher informational asymmetries. Evidence shows that the size of start up firms decreased with foreign bank presence. This is evidence of a credit constraint in that firms can't enter at their optimal size. The effect on opaque borrowers is significant as small start up firms and entrepreneurial activity is by its nature opaque. The consequences of credit constraints could be bad as early stage finance is vital for these firms. This could hamper the process of creative destruction and associated productivity growth in Eastern European economies as it creates a barrier to the entry of new firms.

In terms of competitive bank concentration research has shown that more concentrated markets lead to lower growth except for industries that mainly depend on external finance. European banking has been characterised by a wave of mergers and acquisitions which have been predominantly in the form of domestic consolidation. This has led to a substantial increase in the measured level of bank concentration in most European countries. Theories on the negative effect of this concentration suggest that a non-financial company which is confronted

with a concentrated banking market may face less attractive loan conditions when banks effectively use their market power. As a result firms will decrease their use of bank debt and exhibit lower leverage in the absence of external debt finance. Analysis on the relationship between bank market concentration and firm leverage has found a negative and significant relationship between the degree of competition in the European bank market and the market leverage of firms, implying that increased concentration of bank markets imposes an external debt finance constraint on non-financial firms.

Financial market integration and policy efficiency

The integration of European financial markets has raised many issues and challenges for central banks and policy makers. One of the major topics is whether the increase in liquidity in recent years has contributed to the formation of price bubbles in asset markets. An important aspect of this issue is whether monetary policy should respond to such asset price fluctuations if they are driven by non-fundamental factors. Increases in asset prices can trigger inflationary pressures that may cause an inefficient allocation of resources. A positive shock to markets can generate over consumption patterns due to a perceived wealth effect and capital over accumulation due to lower capital costs. The bursting of these bubbles can cause financial crises that are transmitted to the real economy and undermine growth prospects for a long time.

A pre-emptive reaction of monetary policy might help to limit the build up of financial imbalances and reduce the potential for a crash in the future. Any successful policy of this kind would imply a robust link exists between monetary policy and asset markets. In particular liquidity shocks should have predictable consequences on asset prices. Research in the European Union and the USA has shown that monetary policy does not affect share prices but significantly has an impact on house prices, particularly in the USA.

The housing market is one of the key transmission channels of monetary policy shocks. Its importance as a source of transmission is the link between the development of key macroeconomic variables and fluctuations in house prices. House prices also have an impact on the consumption decision of households. That mortgage markets which have been continuously deregulated over the past years suggests that the significance of housing for the propagation of monetary policy has increased. Research encompassing thirteen countries over the period 1995-2006 found that macroeconomic variables in European countries co-move with real house prices after a monetary policy shock. There are however significant cross country differences. These differences can be explained by heterogeneity in the development of mortgage markets across countries. The results suggest that house prices play an amplifying role in the propagation of monetary policy shocks.

Credit market imperfections may play a role in business cycle fluctuations in general and in labour market dynamics in particular where credit leverage is a propagation mechanism in the business cycle. The mechanism by which the effect occurs is first the wage channel. The real wage attains a level of rigidity due to the presence of credit fluctuations. In addition this lowers the incentives of the firm to open new vacancies under a negative demand shock. Another transmission

channel is the vacancy cost channel. Given that firms' net worth is pro-cyclical while profits and the external finance premium are counter-cyclical these two factors enhance the swings in borrowing, and thus, vacancy creation and production. This results in higher recruitment costs for the labour force in comparison to an economy free of credit imperfections. *So all other things being equal, employment growth at more highly leveraged firms is more sensitive to demand and credit market conditions over the business cycle such that more highly leveraged firms will be less willing to create new vacancies.* An increase in credit leverage or tightening of lending conditions increases the sensitivity of the macro-economy to demand shocks.

The primary goal of the European Central Bank is price stability. In trying to achieve this objective, targets for money growth are set. However, since the end of 2001 monetary conditions became abnormally loose with actual monetary growth continuously exceeding its target. *For monitoring inflation processes, a stable money demand function is extremely important. If this condition is not met then money demand cannot be linked to the real side of the economy.* This would render an important component of ECB monetary analysis irrelevant. Recent years had seen evidence emerge that cast serious doubts on the stability and robustness of monetary demand functions. Research has shown strong evidence in favour of a stable long run money demand relationship specified in terms of a standard set of explanatory variables. The existence of this long term relationship verifies the relevance of the ECB's strategy as it establishes a stable relationship between money and fundamental economic variables. It also allows the presence of excess liquidity to be quantified. This is important given that this is a threat to price stability.

Further reading

European Central Bank (2008), Financial Integration in Europe
<http://www.ecb.int/pub/pdf/other/financialintegrationineurope200804en.pdf>
European Central Bank (2007), Financial Integration in Europe.
<http://www.ecb.int/pub/pdf/other/financialintegrationineurope200703en.pdf>
Financial Systems and Innovation at Firm Level (FINNOV) (2009).
<http://www.finnov-fp7.eu/project-summary>
Financial Systems and Stimulation of Sustainable Growth (FINNESS) (2009).
<http://www.finess-web.eu/publications.htm>

FINESS at a glance

Title	Financial Systems, Efficiency and Stimulation of Sustainable Growth (FINESS)
Research Objectives	<ol style="list-style-type: none"> 1. The main purpose of FINESS is to get a clear understanding of the implications of ongoing financial market integration in Europe on economic growth, employment and competitiveness, to identify likely future paths of the development and to draw policy relevant conclusions. 2. On the macroeconomic level, the role of financial systems and their transmission channels on growth are explored by innovative and tailor made econometric techniques, taken dynamic interactions between financial, product and labour markets into account. A range of indicators to measure the degree of financial integration have been constructed, and their development in time is addressed. 3. Moreover, insights into the working of financial institutions have been provided for the microeconomic level from the perspective of heterogeneous agents. Empirical analysis was done using elaborated econometric methods.
Duration	15 February 2008 – 14 February 2010
Website	http://www.finess-web.eu/summary.htm
Scientific Co-ordinator	Dr. Christian Dreger (cdreger@diw.de) German Institute for Economic Research
Research Consortium	<ul style="list-style-type: none"> • German Institute for Economic Research, Germany (co-ordinator) http://www.diw.de • Centre d'Etudes Prospectives et d'Informations Internationales, France http://www.cepii.fr/anglaisgraph/news/accueilengl.htm • University of Cambridge, United Kingdom http://www.cam.ac.uk • Ifo Institute Munich, Germany http://www.cesifo-group.de/portal/page/portal/ifoHome?lang=e • Ghent University, Belgium http://www.ugent.be • University of Tuebingen, Germany http://www.uni-tuebingen.de/uni/qvr/e-30/m30-01.html • ICEG European Centre, Hungary http://icegec.hu/eng/index.htm • Institute for Market Economics, Bulgaria http://ime.bg
Funding Scheme	Collaborative project (small and medium scale focused research project) under Theme 8 "Socio-economic sciences and humanities" of the 7th Framework Programme (FP7-SSH).
EU Financial Contribution	998,170 €

FINNOV at a glance

Title	Finance, Innovation & Growth (FINNOV)
Research Objectives	FINNOV is a research collaboration between seven European Institutions aimed at understanding the relationship between changing financial markets, innovation dynamics, and economic performance. The project studies how these relationships influence economic growth as it is experienced by individuals, businesses and the wider economy. This will assist policy makers and European industry to understand the sources, implications and management of positive and negative changes in financial markets.
Duration	01 March 2009 – 29 February 2012
Website	http://www.finnov-fp7.eu/
Scientific Co-ordinator	Professor Mariana Mazzucato e-mail: m.mazzucato@open.ac.uk
Research Consortium	<ul style="list-style-type: none"> • The Open University, United Kingdom (co-ordinator) http://www.open.ac.uk/ikd • University of Cambridge, United Kingdom http://www.cbr.cam.ac.uk • Sant'Anna School of Advanced Studies, Italy http://www.lem.sssup.it • Polytechnic University of Marche, Italy http://www.univpm.it/English/Engine/RAServePG.php • Economics Institute, Czech Republic http://www.cerge-ei.cz • University of Bordeaux, France http://beagle.u-bordeaux4.fr/gretha-new/GREThA-Research-Unit-in • University of Sussex, United Kingdom http://www.sussex.ac.uk/spru
Funding Scheme	Collaborative project (small and medium scale focused research project) under Theme 8 "Socio-economic sciences and humanities" of the 7th Framework Programme (FP7-SSH).
EU Financial Contribution	1,494,870 €