SPILLOVERS

Research in Economics at Banco de Portugal • Biannual • Year VII • January 2019

11

Overview

After almost five years as head of the Economics and Research Department, and having recently stepped down, this is also my last overview of Spillovers.

Since we are at the beginning of a new year, I am going to give you my wish list for 2019 and the years to come for research at the Bank.

My wishes are of great times for research at Banco de Portugal!

I am firmly convinced that the independence of the central bank is clearly reflected in the way research is conducted. In an independent central bank, only scientific criteria are used in any dimension related to research, with the sole conditionality that the topics be of relevance to the mission of the Bank.

My wishes are that the research agenda at the Bank be implemented over time mainly through the choices of highly qualified researchers on the most important economic issues for the Bank.

The first step, and the most important, concerns the recruitment process of those that become researchers at the Bank. It also concerns the incentives designed to have them produce excellent work.

The second step concerns the interaction between the research staff and the research community, both in academia and at other central banks. Those are the researchers that visit the Bank to present their work, or participate in conferences, and to teach courses on various research topics. It also includes researchers that collaborate with staff in different projects. Each one of these is key in facilitating the flow of knowledge in and out of the Bank.

It is my wish that the ability of the Bank in attracting the best on scientific grounds for those different roles be maintained and improved.

It is also my wish that Banco de Portugal continues to give priority to the participation of specialized staff on Eurosystem networks that use knowledge to influence policy making. In this way research efforts will be effective, which is one important element of the economists' motivation. Being able to jointly design the right agenda for Europe these days in those fora where the bank is represented should not be minimized in the times ahead.

In summary, I believe that taking care of these different aspects, and not subordinating them to any short-term tactics, is crucial to keep this newsletter active and rich in substance when I will glance back at it, say ten years from now.

Even if this is my last overview, I am not saying goodbye. I strongly believe that I will be around, attending seminars, courses, and conferences, co-authoring with researchers at the Bank, because Banco de Portugal will continue to be the reference in Portugal for research in the matters that interest me.

These are my sincere wishes for 2019 and the years ahead.

Isabel H. Correia

Also in this issue

Links

Economists | Publications
Conferences | Seminars

BANCO DE PORTUGAL
EUROSYSTEM

Interview

John Van Reenen is the *Gordon Y Billard Professor in Management and Economics* and is jointly appointed as Professor of Applied Economics at the MIT Sloan School of Management and in the Department of Economics. From October 2003 to July 2016 John Van Reenen was Professor of Economics at the London School of Economics and the Director of the Centre for Economic Performance, Europe's leading applied economics research centre. In 2016 he was the appointed as Officer of the Order of the British Empire for services to Economics and Public Policy Making, and in 2009 was awarded the Yrjö Jahnsson Award, the European equivalent to the US Bates Clark Medal. Van Reenen has published widely on the economics of innovation, labor markets and productivity. He has been a senior policy advisor to the Secretary of State for Health, Downing Street, and for many international organizations. He has also been a Visiting Professor at the University of California at Berkeley, Stanford and at Harvard University, a Research Fellow at the Institute for Fiscal Studies, a Professor at University College London, a partner in Lexecon Ltd. (now CRAI), and Chief Technology Officer of a software start-up.
Van Reenen holds a BA in economics and social and political sciences from Queens College, University of Cambridge, an MSc in industrial relations from the London School of Economics, and a PhD from University College London in economics.

John Van Reenen was a keynote speaker in the Banco de Portugal 9th conference "Desenvolvimento Económico Português no Espaço Europeu" on November 19th, 2018. We asked John to answer three short questions related to his work on the economics of firm organization, management, and productivity.

Is there a strong role for public policy in improving management practices?

Yes, management is critical for improving productivity and thereby wages. There are two broad sets of policies. Structural policies are (i) strengthening product market competition through a strong anti-trust policy and openness to trade; (ii) encouraging transfer of management best practice through greater foreign investment; (iii) Improving skills through better education and training policies; (iv) removing tax breaks, etc. for family firms; (v) avoiding overly burdensome regulation. There is strong evidence on the efficacy of these policies. More Direct policies includes offering information and advice for small and medium sized firms (SMEs) on improving management practices. For example, helping benchmark SMEs is the first stage in realizing the problem. The evidence base here is less strong, so part of this is more rigorous evaluation of existing policies.

Since the crisis, are there sizeable changes in management practices, notably in the South of Europe?

Not that I know of.

Given the existing international risks, what is the main advice managers should get from economists?

There is huge uncertainty right now, so caution over hiring and investment is the order of the day. When making investments in new technologies for example, don't just think about off the shelf products, but how new technologies like AI and robotics require re-organizing your whole firm. Scan ahead for competitive threats. As Andy Grove said: "Only the paranoid survive".

by Luca David Opromolla

Interview

Professor Lawrence J. Christiano
Northwestern University **(see bio on page 17)**

In your current research you seem to be especially concerned with financial crises. Would you ascribe their recurrence to a fundamental flaw in financial systems of developed countries or could it be something else? Could it be fixed?

I would not ascribe the recurrence to a flaw but certainly to a vulnerability. I think that one of the things that's happening as the world changes ever more quickly is that companies that used to be very different from banks now all of a sudden look like banks. I have in mind companies, perhaps Amazon, which will give you a credit card and finance the resulting loans in part by issuing short-term commercial paper. In this way, you could have a lot of institutions that look like banks but are not subject to the protection of something like a central bank or a regulator. We have to be vigilant and notice when firms start engaging in activities previously associated primarily with conventional banks. The vulnerability of conventional banks to crisis is well understood and has been more or less solved with the provision of government deposit insurance, regulation and other things. But the growth of financial firms outside the protective umbrella of a central bank (we call this a shadow banking) makes us vulnerable to an increased risk of crisis.

I guess my second question is somehow related to the first. Shadow banks (that is, institutions performing maturity transformation with light regulation, no deposit insurance and perhaps without access to a discount window in the central bank) account for a large fraction of the overall financial system. Is that due to light regulation, to some sort of implicit guarantee to depositors from central banks, or to a more fundamental reason?

I think it's a mixture of all of these things. It makes a difference what part of the world you're talking about. I know a little bit about the United States. In the case of the United States it's a little bit all of the above. Americans are uniquely averse to regulations and the regulators often defeat themselves. Greenspan, for example, was notorious for his confidence in the financial system's ability to regulate itself. Because of that belief he allowed the shadow banking system to develop. I don't want to use a word like corruption, but there was an element of that involved. Greenspan allowed the banks to sponsor shadow banks and implicitly give protection to those banks, because sponsoring banks had access to the Federal Reserve's discount window. So, to some extent the shadow banks grew as a way of earning rents on the attachment that normal commercial banks had to the Federal Reserve. Support for the notion that sponsoring banks had given implicit guarantees to shadow banks can be found in the fact that in 2009 many sponsoring banks actually bought back all the assets of shadow banks when they started to go bankrupt. So to some extent the shadow banking system came into existence as a way to satisfy the perennial American appetite for less regulation. Also, the leadership at the FED may have allowed it to happen because (for example, in the case of Greenspan) they forgot that we need regulation to offset the moral hazard that arises when we offer protection to financial firms. To some extent the growth of the shadow banking system also reflects conventional banks earning rents from their close association with the FED.

There is a question of whether there's a kind of a fundamental need for shadow banks as opposed to regular banks and I guess I'm not sure I see that. I can see the market and other forces that produce shadow banks. If the FED allows commercial banks to profit from creating shadow banks and earn rents off the fact that they can give implicit guarantees to the shadow banks, that's a clear purpose but that's in effect taking money from the taxpayer. So my own feeling is that probably banking in general should be under the supervision of regulatory authorities and the minute somebody gets involved in something that looks like banking on a reasonably large scale then they probably should come under the regulatory umbrella of the Federal Reserve or some integrated single institution.

If you were to design from scratch an efficient and robust financial system – meaning that said system would collect savings and allocate capital in an efficient way with reasonable robustness – what would it look like, roughly?

Actually I think that the outlines of the system we have and that's been in place for a long time is about the right one. The system we have in place recognizes the vulnerability that banking has: banks borrow short and lend long and that creates a vulnerability because if the depositors want their money back then the banking system risks having to sell its assets at fire sale values, creating a situation of insolvency that can damage the whole economy. I think that the institutional framework of banks protected by a central bank is fine, but there is a danger that new types of banks could form that are outside the protection of a central bank. Now, as long as the shadow banking system is not too large, then the risk of a crisis is relatively small because in the worst case scenario if creditors want their money back the small size of the system ensures that fire sale losses will not be very big. If the shadow banking system were big, then large-scale selling of assets in the case of a general run would risk dragging down the whole financial system. The basic ideas we have about banking and vulnerabilities of banking and how to protect banking are sound ideas. The problem is that we have to pay much more attention and be careful to notice when firms that initially were not banks, become banks. With technological innovation we're going to have banks springing up all over the place in different and unexpected forms; we have to pay attention to that.

In the modelling front, do you think that the workhorse models addressing financial stability are satisfactory for policy analysis, insofar as they contain the relevant frictions affecting financial markets? Are there any channels missing (credit risk and default, international capital flows, coordination effects, etc.)?

There are two types of models when we think about financial stability: one type captures the vulnerabilities that originate inside the banks; and the other captures financial problems that originate inside non-financial firms. Models of financial problems in non-financial firms are probably okay. I think the problem with modeling banks is that, because we understand banking and we know how to make the banking system safe, what tends to happen is – and now I'm talking about the United States – we go through long periods of time when we regulate banks and they really are safe. Then periodically problems with banks show up when we forget to regulate them and they blow up. So a good model of the system is a model where banks blow up periodically. The problem is that for such models to match the data they necessarily have banks that blow up with the frequency that we observe, which is three or four times a century. It's very hard to understand what people think under those conditions. What do they think about a type of crisis that they've rarely seen and how do they form expectations about it? What are the risks from the perspective of economic agents? The models of banking crisis that we do have, have not made much progress on these questions. They tend to assume that people know exactly what will happen in case a crisis occurs. This is unfortunately very unrealistic, so that much more work is needed to fully understand crises that stem from problems inside banks.

Now on to monetary policy. How do you assess the fact that inflation in the euro area remains low despite the ample accommodation provided by the ECB?

Actually I'm not so familiar with the euro area, but we have a similar situation with this issue in the United States. Maybe I can actually translate your question into one about the US. In the US banks now have reserves that are vastly larger than they were. From something like early fall 2008 to December of 2008 the reserves of the banks exploded. I can't give you the number right now but we're talking about percentages that must be in the thousands. But of course we had low inflation so a question you can ask is, why was inflation so low in the United States when the reserves of the banks were so high and monetary policy was incredibly accommodating? I think the answer is – and maybe it's an old answer – that there's apparently a huge demand for liquidity. The banks want to sit on lots of money and not lend it out; if people were to go out and spend it then I think we would have inflation unless the Fed responded appropriately. Banks want to hold a lot of liquidity and the central bank is providing that to them, and that's exactly what the central bank should do. We don't always understand why people want to hold a lot of liquidity but we do know, or we do think, that if they want to hold a lot of liquidity and we don't have a central bank to provide it, then that can be very disruptive to the economy. That can drive interest rates way up and choke off lots of economic activity and stuff like that. Probably it may be the same thing in Europe: for various reasons people want to hold on to a lot of liquidity. The proximate cause of inflation is increases in costs and wages, which create incentives for firms to drive up prices, and evidently that's not what's going on in Europe: the economy is moving slowly and apparently a lot of financial institutions want to sit on a lot of liquidity and I don't know why that is.

What will monetary policy look like after normalization has taken its full course, say, in ten years?

I guess in the case of monetary policy I'm a little bit pessimistic because in the United States there is no appetite for changing the inflation target. People want inflation around two or two and a half percent. At the same time I assign some probability to the possibility that the so-called real interest rate has gone down and may be down for a longer period of time. What that means is that if you have an inflation target of two and a half percent, then the interest rate will be not very much higher than that, which makes it dangerously close to zero. One possibility is that, especially in the United States over the next couple decades, we will end up with low nominal interest rates on average and periodic crises, when the nominal interest rate wants to go below zero but it can't. One thing that compounds the problem is that in the United States we're going to have increasing fiscal difficulties. We see that the Congress is cutting taxes but at the same time we're very aware that we have a huge amount of spending on Social Security and other programs that are going to occur in the near future. So, from the point of view of stabilizing the economy government spending is probably out of the picture. If the interest rate hits the zero bound frequently then monetary policy will be out of the picture too. Therefore the US government will have no tools with which to stabilize the economy.

And the picture in Europe?

I suppose you have the same story. I mean, it's probably the case that the real interest rate will be low. Whatever those forces are that make it low in the United States will probably make it low in Europe as well.

Is there a case for macro-prudential policy to be coordinated with monetary policy? Do you think that there is a real danger that macro-prudential measures such as limits to leverage could have serious unintended consequences, as some models would suggest?

In terms of coordination, I think very often that monetary policy is probably the wrong tool to use in macro-prudential policy. If you want to restrict leverage and want people to borrow less one way to do it is to impose leverage restrictions, and other one may be to raise the interest rate. Probably raising the interest rate, while that may achieve your objective of getting them to borrow less, may also do a lot of other things that you don't want to do. So monetary policy is too crude an instrument to use for macro-prudential policy. The problem is that often monetary authorities are in effect forced into doing macro-prudential policy. The reason is that in many countries the authority that controls the macro-prudential and the monetary authorities are different. The macro-prudential authorities tend to be close to the political authorities and they don't like taking away the punch bowl from the financial markets. In particular, they don't like imposing leverage restrictions and stuff like that, which then puts the monetary authorities in the position of having to use monetary policy to achieve macro-prudential aims. I think that's a bad situation. The main story is, from the point of view of coordinating macro-prudential and monetary policies, that they really should be handled separately. At the same time, it has to be acknowledged that probably monetary policy does have a big macro-prudential effect. For example, it's known that monetary policy affects asset prices. A cut by the monetary authorities in the interest rate could very well have a positive impact on balance sheets by raising asset prices. I suppose – because monetary authorities can move much faster than regulatory authorities who often need legislative authorization – a monetary authority ought to be mindful of the macro-prudential consequences of what they do. Ideally, monetary and macro-prudential policy should be handled by the same institution to increase the chance that the right tool is used for the right job.

In the modelling front, do you think the so-called "forward guidance puzzle" – the idea that in most monetary macro-models an announcement of low interest rates for longer would imply a sudden increase in the actual inflation rate, contrary to empirical experience – is a serious problem for policy analysis? Are there alternatives to those models?

Well, I'm personally not convinced yet that there is a forward guidance puzzle. There's a certain experiment that you do in an economic model which is to change the interest rate far in the future which seems to have a big immediate effect in standard models. People feel that if that same experiment were done in the data you wouldn't have such a big immediate effect. Now, my feeling is that actually they're making a mistake when they think that they have information that in the data such an experiment doesn't have a big effect. When the experiment is done in the model it's assumed that everybody in the model knows for sure that you're going to move that interest rate, you know, 25 years from now by 5 basis points. But my guess is that in the real world, people ignore Central Bank announcements that 25 years from now they will raise the interest rate by 5 basis points. People expect the Central Bank 25 years from now to do whatever it wants to do at that time, and some intention declared long ago will have little impact then. But the forward guidance puzzle is defined by an experiment in a model in which it is assumed that the people in the model believe 100 percent that there will be a 5 basis point change in the interest rate 25 years later. I don't think we know what would happen in response to such an experiment. I don't think there is information about the consequences of such experiments.

In any case, even if we thought there was an important forward guidance puzzle, there are small modifications in the existing models that cause the forward guidance puzzle to go away (for example, "k-level" thinking) but they tend to be quite complicated. And there's also Xavier Gabaix, who argues that fairly modest modifications to existing models, based on behavioral considerations coming from behavioral economics, get rid of the guidance puzzle without substantially changing other properties of the model.

More generally, what is the role of central banks, in particular the Federal Reserve System and the Eurosystem, in the effort of improving economic theory and macro-models with a view to enhance policymaking?

They have an extremely important role. From the point of view of economics and certainly macroeconomics the explosion of interest by central banks in economic research has been completely transformative. What is this explosion about? It's about two things. Number one, if you go to central banks anywhere in the world you're going to find extremely well-trained economists working there, who publish in academic journals and have PhDs. This is revolutionary. If we wind back, say, 30 years ago, it's completely different. The second difference is, not only are all the staffs at these places right on the frontier of thinking about policy, monetary economics, and macroeconomics, but also they have lots of connections with academia. This is a major phenomenon and I think as a consequence two things have happened. One is that central bankers are better able to do their jobs in the sense that, for example in the financial crisis, we were very fortunate to have Ben Bernanke running the FED. Ben Bernanke was extremely knowledgeable about banking crises. He spent his whole professional life thinking about that and he was the actual chairman of the FED, he was actually running the US central bank. And of course he had a staff of 250 extremely good economists. And not only that: Ben Bernanke is intimately connected with all his academic colleagues. I actually think that in the Great Recession there was a chance that we could have fallen into something like the Great Depression. Of course we'll never know because we can't rerun that history. It looked a lot at the beginning like a Great Depression thing, like a huge liquidity crisis. The core argument about what started the Great Recession is that it was a liquidity crisis in financial markets; the last time around, during the Great Depression, we didn't have any academics in a decision-making role and this time we did and we came out a lot better. Central bank policy-making and central banks are better off because of this. The other thing that happened was that, when you go to the academic side, this connection has been transformative for macroeconomics and for monetary economics. It has made that area extremely data-oriented and policy-oriented. Pressing problems of central banks, and managing economies and stuff like that, are front-and-center issues in academia because of this connection.

Professor Christiano, it was a pleasure to listen to your thoughts. Thank you very much.

Thank you.

by António Antunes

In every issue, we ask experts to briefly present and discuss two papers written by staff members. In this issue, the guest is Prof. Rui Albuquerque.

Rui Albuquerque is the Haub Family Faculty Fellow Associate Professor of Finance at Boston College, Carroll School of Management. He is a Research Fellow at the Center for Economic and Policy Research and a Research Associate at the European Corporate Governance Institute. Professor Albuquerque has teaching and research interests in Capital Markets, International Finance and Governance. His research has been published in top economics and finance journals. His research received several awards including the 2008 Smith Breeden Distinguished Paper Prize by the Journal of Finance and the 2008 and 2013 Finance Prize by the ECGI. He received the European Central Bank's Lamfalussy Fellowship in 2003. He has been invited to be the keynote speaker at several academic conferences. He is currently an associate editor to the Journal of Corporate Finance, the Journal of Banking and Finance and the Portuguese Economic Journal. He has held teaching positions at Boston University, the University of Rochester, and the Portuguese Catholic University, and visited the University of Amsterdam. He has consulted for the Centre of Applied Studies of the Portuguese Catholic University and the World Bank and consults regularly with the Bank of Portugal.

Featured published paper

Barbosa, Luciana, Diana Bonfim, Sónia Costa and Mary Everett. 2018. "Cross-border spillovers of monetary policy: What changes during a financial crisis?". ***Journal of International Money and Finance***

This paper studies US and UK monetary policy spillovers to Portugal and Ireland. The mechanisms for such possible spillovers studied in the paper are funding policies and portfolio allocation of banks in Portugal and Ireland. There are many results in the paper, but those that I want to emphasize can be described using the shadow interest rate, an interest rate constructed in a separate study to reflect both aspects of conventional and unconventional monetary policy. The first main result of the paper is to show that in the full sample that includes pre-crisis and post-crisis observations there is no consistent evidence of spillover effects not even considering the banks that had most liabilities in USD or UKP or had most assets in those currencies—and thus were most likely to be affected by changes in the policy rates associated with these currencies.

This finding is puzzling in light of considerable evidence of a response of stock markets around the world to shocks to the US federal funds target rate (see for example Albuquerque and Vega (2009) in the *Review of Finance*). There are several reasons for the discrepancy in the results. One is possibility is that different banks in Ireland and Portugal responded heterogeneously even after considering their exposure to US and UK capital markets, causing the average effect that Barbosa et al. impose on all banks to be null or insignificant. This possibility is not studied in the paper, but may yield answers especially if the dependency in external financing in USD or UKP is associated at the bank level with exposure to sectors of activity that foreign investors are trying to avoid. This is the standard "push factor" that US interest rates play around the world (Calvo, Leiderman, and Reinhart (1993) in *IMF Staff Papers*). Another possibility is that the pre-crisis bank responses are quite heterogeneous—even at the bank level—from the post-crisis responses. This is what the paper considers next.

The pre-crisis period reveals several intuitive results. First, Portuguese and Irish banks with funding originating in US and UK at the time of a monetary tightening in one of these countries generally contracted domestic lending. If anything, the results suggest that the response of Portuguese banks was larger than that of Irish banks perhaps because Irish banks were in the pre-crisis period supported by a growing economy. Second, Portuguese banks with higher Tier 1 capital ratios, more commercial and industrial loans relative to assets, and lower values of liquid securities to assets, responded to monetary policy tightening in US and UK by contracting domestic credit. The effect on Irish banks of monetary policy tightening in US and UK is weaker and interestingly of opposite sign to that of Portuguese banks. Clearly, the bubble in the Irish economy presented its banks with valuable lending opportunities that the banks could not refuse even with the higher costs of funding due to higher interest rates in the US and UK.

In the post-crisis period the great many changes in monetary policy in the Euro area, with the ECB conducting long-term refinancing operations and the covered-bond and asset-backed securities programs, Irish and Portuguese banks were flush with liquidity but with limited opportunities to extend loans, both of which decreased any impact that US and UK monetary policies could have to their lending activities.

Featured article from *Banco de Portugal Economic Studies*

Pimentel, Joana and Sujiao Zhao. 2018. "The Maturity Rat Race and short-Termism"

The dependence of Portuguese firms on bank debt as their main source of external finance exposes them to significant financial fragility that may magnify the effects of an economic recession. The idea is intuitive. When a firm is underperforming, for example as a consequence of an economic recession, some of its bank creditors have an incentive to reduce the maturity of their loans to the firm: by doing so, they dilute the value of the claims by the firm's other longer-term creditors to their advantage. Much like the tragedy of the commons, this incentive gives rise to a negative externality where creditors reduce their debt maturity leaving the firm with an excessive share of short-term debt on total debt.

The paper by Pimentel and Zhao studies this phenomenon, known as a maturity rat race, in the context of financing decisions of Portuguese firms during the recent crisis in Portugal. Consistent with the intuition above, the paper finds a significant increase in the share of short-term debt on total debt when a firm is closer to default. The reason for the negative externality is that the creditors cannot commit not to reduce their debt maturity. Consistent with this feature of the theory, the paper shows that firms that have multiple bank relationships with no apparent dominant lender are more subject to the maturity rat race.

This research raises several questions. First, in light of the fact that the Portuguese banking market has a dominant player that is a state-owned bank, is there less of a maturity rat race in that case? It is not clear what to expect. On the one hand, if the state-owned bank acts as a vehicle of public policy to affect market failures such as the negative externality associated with the maturity rat race, then we should see the state-owned bank stepping in and extending longer maturity debt when everyone else is shortening debt maturity provided the firm is viable in the long term. On the other hand, if the state-owned bank is acting as a profit-maximizer player like any other bank, then there should be no effect. Second, as debt maturity shortens, the firm is forced to engage in activities that payoff in the short term if it wants to meet its obligations. This short-termism behavior is studied in the paper. Pimentel and Zhao show that firms not only cut investment and employment, but also shift to unpaid workers and part-time workers. Third, when firms are close to default, they have an incentive to "gamble for resurrection." Since equity holders have nothing to lose, gambling by increasing volatility increases the value to equity holders by destroying the value of the firm's debtors' claims. The likelihood that a maturity rat race occurs increases the incentives to gamble for resurrection, which in turn creates the volatility that makes the rat race occur. Firm volatility and maturity shortening should then come hand-in-hand. Fourth and last, firms that rely on trade credit—a short term form of financing outside of the banking sector that is generally more stable because of the assumed long-term customer-supplier relations—should perhaps be less subject to the maturity rat race.

From a public policy perspective, the evidence in the paper points to the need to diversity the Portuguese firms' sources of financing by creating the conditions for a more active private equity market to co-exist with bank debt, and also points to an assessment of the role played by the state-owned bank, that in the least should not actively contribute to the maturity rat race provided firms have adequate long-term prospects.

Recently published

Our economists publish in a wide range of economic and finance journals and scholarly books.

Mathematical and Quantitative Methods

Forthcoming

- Nicolau, João and Paulo M. M. Rodrigues. 2018. "A New Regression-Based Tail Index Estimator". *Review of Economics and Statistics* (JEL Classification C12, C22, C46, G15).
- Pereira, João Pedro, Vasco Pesquita, Paulo M. M. Rodrigues, António Rua. 2018. "Market Integration and the Persistence of Electricity Prices". *Empirical Economics* (JEL Cassification C50, E31, F36).

Macroeconomics and Monetary Economics

- Bokan, Nikola, Andrea Gerali, Sandra Gomes, Pascal Jacquinot and Massimiliano Pisani. 2018. "EAGLE-FLI: A Macroeconomic Model of Banking and Financial Interdependence in the Euro Area". *Economic Modelling*, Vol. 69, Pages 249 –280 (JEL Cassification C23; F32; F41).
- Ribeiro, Pedro and José Dias Curto. 2018. "How do zero-coupon inflation swaps predict inflation rates in the euro area? Evidence of efficiency and accuracy on 1-year contracts". *Empirical Economics*, 54 (4), Pages 1451–1475 (JEL Classification C13, G14, G17, E31).

Forthcoming

- Basto, Rita, Sandra Gomes and Diana Lima. 2018. "Exploring the Implications of Different Loan-To-Value Macroprudential Policy Designs". *Journal of Policy Modeling* (JEL Classification E58, E61, F42).
- Correia, Isabel, Fiorella De Fiore, Pedro Teles and Oreste Tristani. 2018. "Credit Subsidies". *Journal of Monetary Economics*. (JEL Classification E31, E40, E44, E52, E58, E62, E63).
- Gelain, Paolo, Nikolay Iskrev, Kevin J. Lansing and Caterina Mendicino. 2018. "Inflation Dynamics and Adaptive Expectations in an Estimated DSGE Model". *Journal of Macroeconomics*. (JEL Classification D84, E32, E70).
- Iskrev, Nikolay. 2018. "What to Expect when you're Calibrating: Measuring the Effect of Calibration on the Estimation of Macroeconomic Models". *Journal of Economic Dynamic and Control* (JEL Classification C32, C51, C52, E32).
- Kilponen, Juha, Massimiliano Pisani, Sebastian Schmidt, Vesna Corbo, Tibor Hledik, Josef Hollmayr, Samuel Hurtado, Paulo Júlio, Dmitry Kulikov, Matthieu Lemoine, Matija Lozej, Henrik Lundvall, José R. Maria, Brian Micallef, Dimitris Papageorgiou, Jakub Rysanek, Dimitrios Sideris, Carlos Thomas and Gregory De Walque. 2018. "Comparing fiscal consolidation multipliers across models in Europe". *International Journal of Central Banking* (JEL Classification E12, E13, E17, E62, E63).

Microeconomics

Forthcoming

- Dias, Daniel, Carlos Robalo Marques and Christine Richmond. 2018. "A Tale of Two Sectors: Why is Misallocation Higher in Services than in Manufacturing?". *Review of Income and Wealth* (JEL Classification D24, O11, O41, O47).
- Gouveia, Ana, Gustavo Monteiro and Sílvia Santos. 2018. "Product Markets Deregulation: a More Productive, More Efficient and More Resilient Economy?". *Hacienda Pública Española/Review of Public Economics*; (JEL Classificatiom: D04, D22, L43, L51).

Financial Economics

- Barbosa, Luciana, Diana Bonfim, Sónia Costa and Mary Everett. 2018. "Cross-Border Spillovers of Monetary Policy: what Changes During a Financial Crisis?." *Journal of International Money and Finance 89*, Pages 154-174 (JEL Classification JEL: F60, G15, G21).

Labor and Demographic Economics

- Silva, Marta, Luis Filipe Martins, and Helena Lopes. 2018. "Asymmetric Labor Market Reforms: Effects on Wage Growth and Conversion Probability of Fixed-Term Contracts". *ILR Review*, 71(3), Pages 760–788 (JEL Classification J31, J41, C24).
- Addison John T., Paulo Guimarães, Pedro Portugal and Sónia Torres. 2018. "The Sources of Wage Variation and the Direction of Assortative Matching: Evidence from a Three-Way High-Dimensional Fixed Effects Regression Model". *Labour Economics, Elsevier*, vol. 54(C), pages 47-60 (JEL Classification J2 J41).

Health, Education and Welfare

- Campos, Maria Manuel, and Hugo Reis. 2018. "Returns to schooling in the Portuguese economy: a reassessment", *Public Sector Economics, Institute of Public Finance*, vol. 42(2), pages 215-242 (JEL Classification I26, J31, C21).

Forthcoming

- Brotherhood, Luiz Mário, Pedro Cavalcanti and Cezar Santos. 2018. "Education Quality and Returns to Schooling: Evidence from Migrants in Brazil". *Economic Development and Cultural Change* (JEL Classification I21, I25, I26).

New titles in the *Working Papers* series

Technical working papers intended for publication in leading finance and economic journals. Find here the complete list of working papers.

Credit Subsidies • 2018 • Isabel Correia, Fiorella De Fiore, Pedro Teles, Oreste Tristani

Credit subsidies are an alternative to interest rate and credit policies when dealing with high and volatile credit spreads. In a model where credit spreads move in response to shocks to the net worth of financial intermediaries, credit subsidies are able to stabilize those spreads avoiding the transmission to the real economy. Interest rate policy can be a substitute for credit subsidies but is limited by the zero bound constraint. Credit subsidies overcome this constraint. They are superior to a policy of credit easing as long as the government is less efficient than financial intermediaries in providing credit.

Does domestic demand matter for firms' exports? • 2018 • Paulo Soares Esteves, Miguel Portela, António Rua

The existence of a link between exports and domestic demand challenges the standard theoretical assumption in international trade models and carries out important policy implications. Being a small open economy and one of the hardest hit economies during the latest economic and financial crisis, Portugal is a natural case study for assessing the role of this channel, in particular given the large export market share gains that mitigated the negative effects on economic activity. A key difference of our empirical approach vis-à-vis previous literature is that the estimated relationship between exports and domestic sales results directly from a monopolistic model of a firm selling to both domestic and external markets. Drawing on an appropriate estimation strategy, it is found a noteworthy negative relationship between domestic demand and firms' exports covering the manufacturing sector over the period 2009–2016. This result holds for almost all industries although with a heterogeneous magnitude. Additionally, there is also evidence that this effect is stronger for larger firms.

Bank credit allocation and productivity: stylized facts for Portugal • 2018 • Nuno Azevedo, Márcio Mateus, Álvaro Pina

With a dataset covering 95% of total outstanding credit to non-financial corporations recorded in the Portuguese credit register, we investigate whether outstanding loans by resident banks to 64 economic sectors have been granted to the most productive firms. We find evidence of misallocation, which reflects the joint effects of credit supply and credit demand decisions taken over the course of time, and the adverse cyclical developments following the accumulation of imbalances in the Portuguese economy for a protracted period. In 2008-2016, the share of outstanding credit granted to firms with very low productivity (measured or inferred) was always substantial, peaking at 44% in 2013, and declining afterwards with the rebound in economic activity and the growing allocation of new loans towards lower risk firms and away from higher risk firms. Furthermore, we find that misallocation is associated with slower reallocation. The responsiveness of credit growth to firm relative productivity is much lower in sectors with relatively more misallocated credit and when banks have a high share of such credit in their portfolios.

Exploring the implications of different loan-to-value macroprudential policy designs • 2018 • Rita Basto, Sandra Gomes, Diana Lima

This paper evaluates the macroeconomic effects of macroprudential policy measures consisting of changes in loan-to-value ratios in the euro area. The analysis is carried out within a fully structural, multi-country model that prominently includes financial frictions and a banking sector. Our main findings suggest that a permanent LTV tightening in a small euro area economy leads to a long-run decline in lending to the private sector. The short-run impact depends crucially on the policy design, being less pronounced when the measure is phased-in. This is consistent with policy goals of curbing credit growth but avoiding an abrupt immediate contraction in lending. A policy measure introduced at the euro area level implies larger long-run effects but the short-run recessionary impact is attenuated by the monetary policy response.

A general equilibrium theory of occupational choice under optimistic beliefs about entrepreneurial ability • **2018** • Michele Dell'Era, Luca David Opromolla, Luís Santos-Pinto

This paper studies the impact of optimism on occupational choice using a general equilibrium framework. The model shows that optimism has four main qualitative effects: it leads to a misallocation of talent, drives up input prices, raises the number of entrepreneurs, and makes entrepreneurs worse off. We calibrate the model to match U.S. manufacturing data. This allows us to make quantitative predictions regarding the impact of optimism on occupational choice, input prices, the returns to entrepreneurship, and output. The calibration shows that optimism can explain the empirical puzzle of the low mean returns to entrepreneurship compared to average wages.

CEO Performance in Severe Crises: The Role of Newcomers • **2018** • Sharmin Sazedj, João Amador, José Tavares

A firm's optimal choice of a CEO involves a trade-off between hiring newcomers – who take time to profit from learning by doing – and avoiding CEO turnover or opting for internal successions – risking that the old guard fall prey to an experience trap, repeating the same old business practices. When firms are hit by an aggregate economic shock, exogenous, unexpected, and unprecedented in nature, reach, magnitude and persistence, conducting 'business as usual' no longer applies and having in office a newcomer – a CEO hired recently from another firm – may turn out to be particularly valuable to efficiently abandon old management practices. We use a unique matched firm-employee dataset for Portuguese firms in the wake of the last economic crisis, to estimate the value of a newcomer CEO, who is by nature prone to avoid the experience trap. During the crisis, firms run by newcomer CEOs outperform those run by high tenured and/or internally promoted CEOs in terms of both value added (GVA) and sales. We estimate a performance gap of approximately 18%, and confirm that no such gap exists prior to the crisis. Firms managed by newcomers are also less likely to fail during the crisis. Propensity Score matching confirms our difference-in-differences results. Our findings are robust to different measures of firm performance, across different samples and specifications, and to the inclusion of several CEO and firm controls, including fixed effects. Finally, we show that newcomer CEOs make different decisions in terms of personnel, expenditure, investment and international trade, attaining higher productivity levels.

Thirty Years of Economic Growth in Africa • **2018** • João Amador, António R. dos Santos

This paper examines the contribution of employment, capital accumulation and total factor productivity (TFP) to economic growth in African countries over the period 1986-2014. The methodology consists in the estimation of a translog dynamic stochastic production frontier for a set of 49 African economies, thus allowing for the breakdown of TFP along efficiency developments and technological progress. Although the heterogeneity amongst African countries poses a challenge to the estimation of a common production frontier, this is the best approach to perform cross-country comparisons. The results of our growth accounting exercise are more accurate for the contribution of input accumulation and TFP to GDP growth than for the separation between contributions of technological progress and efficiency. We conclude that economic growth patterns differ across African countries but they have been almost totally associated to input accumulation, notably in what concerns capital. The experience of Egypt, Nigeria and South Africa - the three largest African economies - confirms this pattern.

To Ask or Not To Ask? Collateral versus Screening in Lending Relationships • **2018** • Hans Degryse, Artashes Karapetyan, Sudipto Karmakar

We study the impact of higher capital requirements on banks' decisions to grant collateralized rather than uncollateralized loans. We exploit the 2011 EBA capital exercise, a quasi-natural experiment that required a number of banks to increase their regulatory capital but not others. This experiment makes secured lending more attractive vis-à-vis unsecured lending for the affected banks as secured loans require less regulatory capital. Using a loan-level dataset covering all corporate loans in Portugal, we identify a novel channel of tighter capital requirements: relative to the control group and after the shock, treated banks require loans more often to be collateralized but less so for relationship borrowers. We further find this impact is stronger for collateral that saves more on regulatory capital.

Every cloud has a silver lining: micro-level evidence on the cleansing effects of the portuguese financial crisis • **2018** • Carlos Robalo Marques, Daniel A. Dias

Using firm level data, we show that the Portuguese financial crisis had, overall, a cleansing effect on productivity. During the crisis, aggregate productivity gains, both in manufacturing and services, came from relatively higher contributions of entry and exit of firms and from reallocation of resources between surviving firms. At the microlevel, we find that the crisis reduced the probability of survival for high and low productivity firms, but hit low productivity firms disproportionately harder, in line with the cleansing hypothesis. The correlation between productivity and employment growth in manufacturing and services strengthened, but the correlation between productivity and capital growth in the service sector weakened. We attribute this result in part to structural sectoral differences, but mainly to the large negative demand and credit shocks that affected mainly the nontradable services sub-sector. We also find that the probability of exit increased disproportionately for firms operating in more financially dependent industries, but there is no evidence of a scarring effect on productivity stemming from changing credit conditions.

When Losses Turn Into Loans: The Cost of Undercapitalized Banks • **2018** • Laura Blattner, Luísa Farinha, Francisca Rebelo

We provide evidence that a weak banking sector has contributed to low productivity growth in the aftermath of the European sovereign debt crisis. An unexpected increase in capital requirements for a subset of Portuguese banks in 2011provides a natural experiment to study the effects of reduced bank capital adequacy on productivity. Affected banks respond not only by cutting back on lending but also by reallocating credit to firms in financial distress with prior underreported loan losses. We develop a method to detect when banks delay loss reporting using detailed loan-level data. We then show that the credit reallocation leads to a reallocation of production factors across firms. A partial equilibrium exercise suggests that the resulting increase in factor misallocation accounts for 20% of the decline in productivity in Portugal in 2012.

Testing the fractionally integrated hypothesis using M estimation: With an application to stock market volatility • **2018** • Paulo M.M. Rodrigues, Antonio Rubia, Matei Demetrescu

A new class of tests for fractional integration in the time domain based on M estimation is developed. This approach offers more robust properties against non-Gaussian errors than least squares or other estimation principles. The asymptotic properties of the tests are discussed under fairly general assumptions, and for different estimation approaches based on direct optimization of the M loss-function and on iterated k-step and reweighted LS numeric algorithms. Monte Carlo simulations illustrate the good finite sample performance of the new tests and an application to daily volatility of several stock market indices shows the empirical relevance of the new tests.

Cross-border spillovers of monetary policy: what changes during a financial crisis? • **2018** • Diana Bonfim, Luciana Barbosa, Sónia Costa, Mary Everett

This paper analyses cross-border spillovers of monetary policy by examining two countries that were in the eye of the storm during the euro area sovereign debt crisis, namely Ireland and Portugal. The research provides insight as to how banking and sovereign stress affect the inward transmission of foreign monetary policy to two economies that share many characteristics, but that also have many distinct features. In particular, our research addresses the question of whether a banking system in distress reacts more or less to monetary policy changes in other major economies. The empirical analysis indicates that international spillovers are present for US and UK monetary policy for both Ireland and Portugal, but there is heterogeneity in the transmission mechanisms by which they affect credit growth in the two economies.

Structural Changes in the Duration of Bull Markets and Business Cycle Dynamics • **2018** • Paulo M.M. Rodrigues, João Nicolau João Cruz

This paper tests for structural changes in the duration of bull regimes of adjusted market capitalization stock indexes comprehending 18 developed and emerging economies, using a novel approach introduced by Nicolau (2016); and investigates whether the structural changes detected in the bull markets' duration are connected to the business cycle. Interestingly, the results show that structural changes in the duration of bull market regimes seem to anticipate periods of economic recession. The results provide statistically significant evidence that decreases in bull markets duration do not occur independently from economic crises, as 13 out of the 18 markets considered in our sample verify such decreases at least 12 months prior to the occurrence of an economic crisis. Additionally, these structural changes seem to affect smaller companies first, and then the larger ones. The association between decreases in the bull market regimes' duration and economic crises is possibly a consequence of the financial markets' leading behavior over the economy, with these structural changes serving as proxies for decreasing confidence in the financial markets, which naturally affects economic stability.

Collateral Damage? Labour Market Effects of Competing with China - at Home and Abroad • 2018 • Sónia Cabral, Pedro S. Martins, João Pereira dos Santos, Mariana Tavares

The increased range and quality of China's exports is a major ongoing development in the international economy with potentially far-reaching effects. In this paper, we examine the impact of the China's integration in international trade in the Portuguese labour market. On top of the direct effects of increased imports from China studied in previous research, we focus on the indirect labour market effects stemming from increased export competition in third markets. Our findings, based on matched employer-employee data in the 1991-2008 period, indicate that workers' earnings and employment are significantly negatively affected by China's competition, but only through the indirect 'market-stealing' channel. In contrast to evidence for other countries, the direct effects of Chinese import competition are mostly non-significant. The results are robust to a number of checks, and the negative impacts of indirect competition are found to be stronger for women, older and less educated workers, and workers in domestic firms.

An integrated financial amplifier: the role of defaulted loans and occasionally binding constraints in output fluctuations • 2018 • José R. Maria, Paulo Júlio

We present a DSGE model for a small euro area economy comprising a banking sector empowered with regulatory capital requirements, defaulted loans and occasionally binding endogenous credit restrictions. Under non-financial shocks no important amplifications arise due to balancing forces: while banks' equity acts as a shock absorber, the observance of regulatory capital requirements acts as a shock amplifier. Under moderately-sized "bad" financial-based shocks defaulted loans increase and banks' value drop. As a result, credit becomes supply constraint for some time, severely amplifying and protracting output downfalls. Endogenous inertia implies a slow recovery in banks' capital and thus an enduring fragility of the banking system. Defaulted loans and credit restrictions are strongly intertwined, since the former severely impact banks' value, hence leveraging the amplification size.

Fear the walking dead: zombie firms, spillovers and exit barriers • 2018 • Ana Fontoura Gouveia, Christian Osterhold

Productivity growth is slowing down among OECD countries, coupled with increased misallocation of resources. A recent strand of literature focuses on the role of non-viable firms ("zombie firms") to explain these developments. Using a rich firm-level dataset for one of the OECD countries with the largest drop in barriers to firm exit and restructure, we assess the role of zombies on firm dynamics, both in the extensive and intensive margins. We confirm the results on the high prevalence of zombie firms, significantly less productive than their healthy counterparts and thus dragging aggregate productivity down. Moreover, while we find evidence of positive selection within zombies, with the most productive restructuring and the least productive exiting, we also show that the zombies' productivity threshold for exit is much lower than that of non-zombies, allowing them to stay in the market, distorting competition and sinking resources. Zombie prevalence curbs the growth of viable firms, in particular the most productive, harming the intra-sectoral resource reallocation. We show that a reduction in exit and restructuring barriers promotes a more effective exit channel and fosters the restructuring of the most productive, highlight the role of public policy in addressing zombies' prevalence, fostering a more efficient resource allocation and enabling productivity growth.

International trade in services: Evidence for Portuguese firms • 2018 • João Amador, Sónia Cabral, Birgitte Ringstad

This paper describes the main features of Portuguese international trade of non-tourism services, using a new transaction-level database on services trade merged with detailed balance-sheet data. We find that a few two-way traders with diversified service and geographical portfolios account for a substantial share of exports and imports. Compared with one-way traders, two-way traders are larger, older, more productive and more profitable. We also unveil new evidence on the bi-modality of the distributions of export intensity, with density concentrating on both ends of the distribution. Moreover, considering all margins of firms' services trade and controlling for several firm characteristics, the intensive margins of exports and imports of services are positively related to both productivity and profitability. Regarding the extensive margins, the number of different types of services imported by a firm is also positively associated with its performance.

The effects of official and unofficial information on tax compliance • 2018 • Luca David Opromolla, Rafael Marques, Andrea Vezzulli, Filomena Garcia

The administration of tax policy has shifted its focus from enforcement to complementary instruments aimed at creating a social norm of tax compliance. In this paper we provide an analysis of the effects of the dissemination of information regarding the past degree of tax evasion at the social level on the current individual tax compliance behavior. We build an experiment where, for given levels of audit probabilities, fines and tax rates, subjects have to declare their income after receiving either a communication of the official average tax evasion rate or a private message from a group of randomly matched peers about their tax behavior. We use the experimental data to estimate a dynamic econometric model of tax evasion. The econometric model extends the Allingham–Sandmo–Yitzhaki tax evasion model to include self-consistency and endogenous social interactions among taxpayers. We find four main results. First, tax compliance is very persistent. Second, the higher the official past tax evasion rate the higher the degree of persistence: evaders are more likely to evade again, and compliant individuals are more likely to comply again. Third, when all peers communicate to have evaded (complied) in the past, both evaders and compliant individuals are more likely to evade (comply). Fourth, while both treatments, and especially the unofficial information treatment, are associated, in the context of our experiment, with a significantly larger growth in evasion intensity, the aggregate effect depends on the characteristics of the population. In countries with inherently low levels of tax evasion, official information can have beneficial effects by consolidating the behavior of compliant individuals. However, in countries with inherently high levels of tax evasion, official information can have detrimental effects by intensifying the behavior of evaders. In both cases, the impact of official information is magnified in the presence of strong peer effects.

Flexible wage components as a source of wage adaptability to shocks: evidence from European firms, 2010–2013 • **2018** • Jan Babecký, Clémence Berson, Ludmila Fadejeva, Ana Lamo, Petra Marotzke, Fernando Martins, Pawel Strzelecki

This paper provides evidence on the role of flexible wage components as a channel for firms to adjust costs in case of the adverse shocks. It uses data from a firm-level survey for 25 European countries that covers the period 20102013. We finnd that firms subject to nominal wage rigidities, which prevent them from adjusting base wages, are more likely to cut flexible wage components in order to adjust labour costs when needed. Thus firms use flexible wage components as a buffer to overcome base wage rigidity. More generally, when base wages are able to adjust to negative shocks, the flexible wage components also react and their reaction is stronger than that of base wages.

Did recent reforms facilitate EU labour market adjustment? Firm level evidence • **2018** • Mario Izquierdo,Theodora Kosma, Ana Lamo, Fernando Martins, Simon Savsek

The paper analyses the effectiveness of the labour market reforms implemented in a number of EU countries during the recent crisis using qualitative data from a firm-level survey conducted in 2014-2015 in 25 EU countries. This data set contains information on firms' perceptions on the easiness to adjust labour input and wages in 2013 compared to the prereform period together with firms' and workers' characteristics and information on the economic and institutional environment in which firms operate. We find that firms in countries that undertook wider labour markets reforms found it easier to adjust employment and wages, and they largely attribute this to the reforms in labour legislation. Consistent with the efficiency wage theory, we find that firms employing a higher share of skilled employees were less likely than those with relatively more unskilled workers to found it easier to adjust wages and lay off employees. Furthermore, firms applying firm-level agreements found it easier to adjust wages in 2013 than in 2010 suggesting that they benefited from the increased flexibility provided by these agreements.

From the *Banco de Portugal Economic Studies*

Banco de Portugal Economic Studies aims to publish theoretical and applied studies prepared by economists at Banco de Portugal, often co-authored with external researchers. All articles are signed and are of the sole responsibility of their respective authors. The articles aim to contribute to an informed and high-quality debate on the Portuguese economy. The journal intends to be a reference publication in that debate, and is directed to a relatively specialized public on economic issues.

Monitoring the equity risk premium in the S&P500 • **2018** • Nuno Silva.

Interest rate spreads hikes: What lies behind them? • **2018** • Paulo Júlio, José R. Maria.

From unconventional monetary to unconventional fiscal policies • **2018** • Isabel Horta Correia.

A portrait of Portuguese international traders of non-tourism services • **2018** • João Amador, Sónia Cabral, Birgitte Ringstad.

The maturity rat race and short-termism • **2018** • Joana F. Pimentel, Sujiao (Emma) Zhao.

Financial situation indicators of Portuguese firms: Do size, age and sector matter? • **2018** • Fábio Albuquerque, Paulo Soares Esteves, Cloé Magalhães.

Borrowing constraints and firm dynamics • **2018** • Sónia Félix.

Seminars

DEE regularly invites experts in various fields of economics to present their latest research. Banco de Portugal staff, as well as researchers from other central banks, Portuguese and foreign universities are invited to attend. The following is a list of the seminars that were organized during the last six months. See the seminars' webpage for a list of past and next seminars.

2018

Jun. 4 **Optimal Monetary Policy in Production Networks** • Jennifer La'O • Columbia University

6 **Interest Rates, Market Power, and Financial Stability** • David Martínez-Miera • Universidad Carlos III de Madrid

8 **Designing a Simple Loss Function for Central Banks: Does a Dual Mandate Make Sense?** • Ricardo Nunes • Federal Reserve Bank of Boston

29 **Financial Engineering and the Macroeconomy** • Pedro Amaral • California State University Fullerton

Jul. 23 **State Dependency of Monetary Policy: The Refinancing Channel** • Martin Eichenbaum • Northwestern University

Aug. 21 **Asset Prices and Unemployment Fluctuations** • Patrick Kehoe • Stanford University

Sep. 4 **Self-Fulfilling Debt Crises with Long Stagnations** • João Ayres • Inter-American Development Bank

7 **Optimal Monetary Policy with Heterogeneous Agents** • Galo Nuño Barrau • Banco de España

10 **Financial Cycles with Heterogeneous Intermediaries** • Nuno Coimbra • Paris School of Economics

12 **Productivity, (Mis)allocation and Trade** • Kalina Manova • University College London

19 **The Effects of Banking Competition on Growth and Financial Stability: Evidence from the National Banking Era** • Sergio A. Correia • Board of Governors of the Federal Reserve System

24 **Forward Guidance** • Kurt Mitman • Stockholm University

26 **May the force be with you: Exit barriers, Governance Shocks, and Profitability Sclerosis in Banking** • Michael Koetter • Halle Institute for Economic Research

Oct. 9 **Variation Margins, Fire Sales, and Information-Constrained Optimum** • Florian Heider • European Central Bank

15 **Optimal Fiscal Policy in a Model with Uninsurable Idiosyncratic Shocks** • Marcelo Pedroni • University of Amsterdam

22 **Private Equity Investment in U.S. Banks** • Robert Deyoung • University of Kansas School of Business

Nov. 6 **Credit market spillovers: Evidence from a syndicated loan market** • Sotirios Kokas • University of Essex

14 **Insurers as Asset Managers and Systemic Risk** • Andrew Ellul • Kelley School of Business, Indiana University

26 **Banking Supervision, Monetary Policy and Risk-Taking: Big Data Evidence from 15 Credit Registers** • Miguel Boucinha • European Central Bank

Courses

2018

Dec. 17-21 **Macroeconomics and Finance** • Lawrence J. Christiano • Northwestern University

Lessons from a course focused primarily on structural models with financial frictions.

Lawrence Christiano is the Alfred W. Chase Professor of Business Institutions. He joined the Northwestern University faculty in 1992 and is a consultant to the Federal Reserve Banks of Chicago, Cleveland and Minneapolis, and a Research Affiliate of the National Bureau of Economic Research. In 2001, he was elected a Fellow of the Econometric Society.

The lectures at Banco de Portugal reviewed four macroeconomic models of financial frictions. The first model is of a rollover crisis in banks. It is a model proposed by Gertler and Kiyotaki (2015), which is a descendant of the seminal bank run model of Diamond and Dybvig (1983). Whether a bank run equilibrium exists depends on bank balance sheets and an endogenous liquidation price for bank assets.

The second model draws its main results from the presence of heterogeneous nonfinancial firms that are constrained by how much collateral they have. The model, proposed by Buera and Moll (2015), implies that credit might be misallocated among firms if firm collateral is not perfectly correlated with firm productivity.

The third structural model was suggested by Christiano and Ikeda (2016), in which the financial friction is a moral hazard problem inside the bank. The agency problem arises because bankers must exert an unobserved and costly effort to increase the likelihood of good outcomes on the asset side of their balance sheet.

Finally, the estimated model proposed by Christiano, Motto and Rostagno (2014) was also presented. In this case financial frictions are in the borrowers, not the banks, and emerge in the relationships between these agents. Risk shocks, defined as the cross-sectional standard deviation of idiosyncratic productivity shocks hitting entrepreneurs, were claimed to account for a large share of the fluctuations in GDP and other macroeconomic variables.

by José R. Maria, Banco de Portugal, Economics and Research Department

References

Buera, F. and B. Moll (2015). Aggregate Implications of a Credit Crunch: The Importance of Heterogeneity. American Economic Journal: Macroeconomics 2015, 7(3): 1–42.

Christiano, L., R. Motto, and M. Rostagno (2014). Risk Shocks. American Economic Review, 104(1):27–65.

Christiano, L. and D. Ikeda (2016). Bank Leverage and Social Welfare. American Economic Review: Papers & Proceedings, 106(5): 560–564.

Diamond, D. and P. Dybvig (1983). Bank Runs, Deposit Insurance, and Liquidity. Journal of Political Economy, 1983, vol. 91, issue 3, 401-19.

Gertler, M. and N. Kiyotaki (2015). Banking, Liquidity, and Bank Runs in an Infinite American Economic Review, 105(7):2011–2043.

Conferences

2018

Jun. 22-23 **2nd Conference New Trends and Developments in Econometrics**

The Banco de Portugal hosted its 2nd Conference on New Trends and Developments in Econometrics, from June 22 to June 23, 2018 in Ílhavo, Portugal. This conference presents an important forum for the discussion and presentation of new developments and the assessment of econometric methods for use in banking, finance, macroeconomics and microeconomics. These developments are of considerable importance as they address issues related to the complex environment in which banks nowadays operate, the complexity of financial instruments, the functioning of markets and institutions, and the important challenges that central banks have to face.

This year's conference counted with 35 participants of various nationalities and with important contributions by:
Manuel Arellano, CEMFI
Federico Bandi, Johns Hopkins Carey Business School
Bruce Hansen, University of Wisconsin-Madison
Cristina Amado (Universidade do Minho)
Perter Boswijk, University of Amsterdam
Joerg Breitung, University of Cologne
Matei Demetrescu, Christian-Albrechts-University of Kiel
Gonçalo Faria, Católica Porto Business School
Uwe Hassler, Goethe University Frankfurt
Yannick Hoga, University of Duisburg-Essen
Christian Leschinski, Leibniz University Hannover
José Ferreira Machado, Nova SBE, Universidade Nova de Lisboa
Bent Nielsen, University of Oxford
Giovanni Pellegrino, University of Melbourne
Pedro Portugal, Banco de Portugal and NOVA SBE, Universidade Nova de Lisboa
Martin Wagner, Technical University Dortmund and Bank of Slovenia

The topics addressed covered recent issues in forecasting and prediction of economic and financial variables; the modelling of volatility interactions and contagion; monitoring value-at-risk and expected shortfall; systematic staleness; bootstrapping methods for financial and economic analysis; EMU government bond market integration; uncertainty-driven co-movements in booms and busts; recovering latent variables by matching; quantiles via moments; returns to schooling; as well as recent important contributions to econometric theory.

Nov. 19 **9th Conference Portuguese Economic Development in the European Context**

The 9th Banco de Portugal Conference on the Portuguese Economic Development in the European Context opened with Carlos da Silva Costa (Governor, Banco de Portugal), followed by a lecture by John Van Reenen titled "Management, Productivity and the Wealth of Nations". John Van Reenen (Massachusetts Institute of Technology) notably remarked that management accounts for one third of the productivity differences across countries. He was followed by José Pinto dos Santos (INSEAD and Católica Porto Business School)

with a lecture titled "*Como a gestão conta*" ("How management matters"). Also emphasizing the importance of improving management practices, José Pinto dos Santos explained how management is the disciplined art of achieving an enterprise performance superior to that which would naturally occur.

The first part of the conference ended with a policy panel under the topic "A Portuguese look on the connection between management and productivity in the firm", chaired by David Dinis, journalist, with José Pinto dos Santos, Isabel Furtado (COTEC Portugal and TMG Automative) and Luís Salvado (NOVABASE). In this panel, it was underlined the relevance of being in competition with firms following best practices, of engaging the whole organization in firms' goals and of workers' qualifications (including formal education, soft skills and digital training) to increase productivity.

The second part of the conference started with the presentation of four research articles focusing on the relation between management practices and productivity outcomes, using data for the Portuguese economy.

In the first one, Sharmin Sazedj (Banco de Portugal) presented "CEO performance in Severe Crises: The Role of Newcomers", a paper developed in co-authorship with João Amador (Banco de Portugal) and José Tavares (Nova SBE). The presentation focused on the firm's optimal choice of a CEO, using Portuguese data. The authors concluded that, during a crisis, firms managed by a newcomer CEO (a recent external hire) outperform those managed by a long-tenured or internally-promoted CEO in terms of both gross value added and sales. Furthermore, a newcomer CEO increases firm survivability and productivity, meaning that accumulated experience in the firm does not seem key in periods of economic distress.

Paper available in: https://www.bportugal.pt/sites/default/files/anexos/papers/wp201821.pdf

The second study, "Entrepreneurial Human Capital and Firm Dynamics", authored and presented by Francisco Queiró (Nova SBE), also used Portuguese data to study the role of entrepreneurial human capital as a driver of a firm's life cycle dynamics. The author finds that firms initiated by more educated entrepreneurs are larger at entry and display higher employment, output and growth throughout the life cycle. The differences are driven by productivity and the relationship between productivity and entrepreneur schooling is stronger in the upper tail of the productivity distribution. Moreover, Francisco Queiró concluded that the effect of entrepreneurial human capital on firm productivity increases the fraction of cross-country income differences explained by human and physical capital from 40% to 65%-76%.

Paper available in: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3280925

In the third work, Luca David Opromolla (Banco de Portugal) presented a paper, joint with Giordano Mion (University of Sussex) and Gianmarco Ottaviano (Bocconi University), titled "Dream Jobs", which focuses on the dynamic wage growth effects of young managers. Using data for Portugal, a notable result from this study was that one additional year of international experience more than compensates for one additional year of domestic experience. Furthermore, the international experience premium is entirely transportable to domestic active firms. Also, one additional year of domestic or international experience is especially advantageous for the ablest young managers.

Presentation available in: https://www.bportugal.pt/sites/default/files/luca_opromolla.pdf

In the fourth presentation, Carlos Robalo Marques (Banco de Portugal) presented "Every cloud has a silver lining: Micro-level evidence on the cleansing effects of the Portuguese financial crisis", a study developed in co-authorship with Daniel Dias (Board of Governors of the Federal Reserve System). The authors revealed that the Portuguese financial crisis had an overall "cleansing effect" on productivity, which means that during the crisis the largest contribution to productivity growth of the reallocation of factors arose mainly from the firms' net entry, both in manufacturing and services sectors. Moreover, during the crisis there was a strengthening of the correlation between productivity and employment growth (higher in manufacturing), but a reduction in the correlation between productivity and capital (due to services sector, particularly non-transactional services).

Paper available in: https://www.bportugal.pt/sites/default/files/wp201818.pdf

The last session of the conference consisted of the presentation of the best master theses on the Portuguese economy. This session results from a partnership between Banco de Portugal and *Fundação Francisco Manuel dos Santos* (FFMS). There are three main objectives guiding this partnership: to highlight the high-quality research produced by pre-experience Masters graduates of Portuguese universities; to promote research about the Portuguese economy; and to challenge students and motivate faculty to continue producing high-quality work.

An application process was organised to this effect. A Scientific Committee was created, comprising Esmeralda Ramalho (ISEG), Paulo Guimarães (Banco de Portugal and Faculdade de Economia da Universidade do Porto), Tiago Sequeira (Universidade da Beira Interior), Susana Peralta (Nova SBE) and Rui Albuquerque (Boston College), who presided the committee. Over 70 directors of Master Programmes were asked to select Master theses in the top 5% of their programmes and submit them to the scientific committee. 46 theses were submitted from ten institutions, with the following shares: Faculdade de Economia da Universidade do Porto (FEP), 24%; ISCTE – Instituto Universitário de Lisboa, 15%; Universidade de Aveiro, 11%; Nova School of Business and Economics, 11%; Universidade de Trás-os-Montes e Alto Douro (UTAD), 9%; Universidade de Lisboa, Instituto Superior de Economia e Gestão (ISEG), 9%; Universidade Católica Portuguesa – Porto, 7%; Católica Lisbon School of Business and Economics, 6%; Universidade de Évora, 4%; and Universidade da Beira Interior (UBI), 4%.

A selection process was then implemented to evaluate the merit of the theses and rank them. The theses were assigned in equal number to the members of the Scientific Committee and each member was asked to select three theses to constitute a final pool of 16, which were then read by all five members of the Committee. A thorough evaluation and discussion of this pool of theses resulted in the top five that were presented at the Conference. An additional 11 theses were presented in a poster session throughout the Conference. The top five theses were: "Overeducation Dynamics, Wounds and Scars" by Vítor Santos (Nova SBE); "Efficiency in School Education: A semi-parametric study of school efficiency in OECD countries" by Gonçalo Lima (ISCTE); "The Effects of the Increase in Parental Leave Benefits on Wages" by Bárbara Alexandrino (ISEG); "Estimating Gender Differences in the Probability of Unemployment: Evidence From Portugal" by Joana Passinhas (ISEG); and "Majority Governments and Investment: Evidence From Portuguese Municipalities" by Filipe Caires (Nova SBE). The FFMS will promote the dissemination of the theses through an e-book with a summary of the dissertations selected for the Conference.

The winner of the best master's thesis (José da Silva Lopes Award) was Joana Passinhas.

The 9th Banco de Portugal Conference on the Portuguese Economic Development in the European Context ended with an address by Elisa Ferreira (Vice-Governor, Banco de Portugal), which focused on the importance of bridging the high-quality analysis developed in universities and in central banks and of incentivising and disseminating the new ideas put forth by the young generation.

Dec. 18-19 **Workshop “Machine Learning and Big Data: basic concepts and applications”**

For the second year in a row BPLIM organized a workshop to discuss issues that are relevant for individuals that work regularly with microdata. This time the topic was “Machine Learning and Big Data” and the core idea was to provide an overview of important concepts/ideas in the area and showcase applications all from a non-technical perspective. This workshop, titled “Machine Learning and Big Data: basics concepts and applications”, was held in Porto on December 18 and 19 and had a total of 48 participants. The kick off session started on the afternoon of the 18th with Fabio Fumarola from the Italian Digital and Transformation Team, an expert on Data Mining and Machine Learning, who discussed how Big Data and Machine Learning were applied to manage Italian Data and to create innovative services for the Public Administration. The workshop proceeded with a 4 hour training session by Nelson Areal, from the University of Minho, who provided a general overview of all issues pertaining to “Big Data”. The workshop continued on the morning of the 19th with a training session by João Gama, from the University of Porto, who explained the main concepts in the field of “Machine Learning”. Following lunch there were two sessions where presenters showed practical applications illustrating the use of Big Data and Machine Learning techniques. The first session showed examples of applications implemented by private companies such as Sonae (Liliana Bernardino) and BCP (Maria do Carmo Sousa). The final session consisted of examples of applications implemented by academicians. The presenters were Eurico Lopes (IPCB), Paulo Cortez (U Minho) and Rita Ribeiro (U Porto).

Meet our researchers

In this issue we present two members of our research staff.

Cristina Manteu is an economist at the Economics and Research Department of Banco de Portugal since 1992. She has worked in the International Economy Unit in the Monetary Policy Division and currently heads the Portuguese Economy Division, which is in charge of monitoring and forecasting. She has a Bachelor's and a Master in Economics from Nova School of Business and Economics.

Please, tell us about the research you are carrying on at DEE

As head of the Portuguese Economy Division I'm currently mostly involved in policy-oriented work related to macroeconomic developments and projections for the Portuguese economy. My main research interests are on international trade and the Portuguese economy. My current research project seeks to test the granularity hypothesis for Portuguese aggregate exports using micro-level data, in the vein of the seminal work by Gabaix (2011). Can the idiosyncratic movements of the largest exporters explain a significant part of the growth rate of aggregate exports? Has this pattern changed over time? These research questions have a bearing on our understanding of the recent path of Portuguese exports.

My interests, however, are not solely focused on trade or on external factors' relevance. For instance, I have recently researched the impact of uncertainty on the economic developments of the Portuguese economy over the last decades. In the paper, we presented a set of uncertainty indicators for the Portuguese economy, based on different types of economic data, and assesses their impact on GDP, investment and private consumption using estimated vector autoregression models. The main result obtained was that the inclusion of uncertainty variables improves the accuracy of the models' forecasts, particularly in the post-sovereign debt crisis period. Results, especially for GDP, indicate a significant negative impact of uncertainty during the last two recessions and a positive impact from diminishing uncertainty after the end of the Portuguese economic and financial assistance program.

Nuno Monteiro joined the Economics and Research Department of Banco de Portugal in October 2012 and is currently working in the Monetary Policy division. He holds both an undergraduate and a master's degree in Economics from Faculdade de Economia da Universidade do Porto.

Please, tell us about the research you are carrying on at DEE

Some of my past research projects have covered topics in financial stability and early warning systems, namely forecasting banking crises with dynamic panel probit models. Currently, I am working on different topics. I have been looking at household consumption inequality and poverty in Portugal by analyzing the rich micro databases from the Household Budget Surveys. These surveys from INE allow for a combination of information on the distributions of consumption expenditure and income in Portugal. The main goal of this project is to characterize inequality and poverty and understand the changes over the past 15 years in Portugal.

Visiting Researchers

Banco de Portugal offers cash grants to support research projects in the field of Economics, with a view to promoting inter-change between the scientific and academic communities and the Bank, and to contributing towards the improvement of theoretical and applied research in Portugal.

Applicants wishing to develop research projects in the Economics and Research Department must hold a Doctorate degree or be about to finalise their Doctorate degree. Preferred topics include monetary and labour economics, financial intermediation, banking, and studies on the Portuguese economy.

Application instructions are available. Applications are invited from all interested parties.

Further information may be obtained via email: conferences@bportugal.pt.

Farzad Saidi • Stockholm School of Economics

Diogo Lima • University of Indiana

Cláudia Custódio • Imperial College Business School

Michael Weber • University of Chicago

Ana Rute Cardoso • Barcelona Graduate School of Economics

Ioan-Sebastian Buhai • Stockholm University

Visitors

Alexandro Ruiz • Centro de Estudios Monetarios y Financieros (CEMFI))

Robert DeYoung • University of Kansas

Valério Ercolani • Bank of Italy

Sotirios Kokas • University of Essex

Hans Degryse • University of Leuven

Arthur Kennickel • Former Advisor at Federal Reserve Board

Antonio Rubia • University of Alicante

Rita Ginja • University of Bergen

Pedro Carneiro • University College London

Consultants

Miguel Gouveia • Católica Lisbon School of Business and Economics

Miguel Portela • University of Minho

Steven Ongena • University of Zurich and the Swiss Finance Institute

Upcoming events and announcements

Seminars 2019

Jan. 11 **Trading Up and the Skill Premium** • Sérgio Rebelo • Northwestern University
Feb. 13 **Quantitative Easing** • Vincent Sterk • University College London
20 **To be annouced** • Tiago Cavalcanti • University of Cambridge
22 **To be annouced** • Ramon Marimon • European University Institute
27 **To be annouced** • Sang Yoon (Tim) Lee • Queen Mary University of London
Mar. 13 **To be annouced** • Matthias Doepke • Northwestern University
20 **To be annouced** • Heitor Almeida • University of Illinois at Urbana-Champaign
26 **To be annouced** • Chang-Tai Hsieh • The University of Chicago Booth School of Business
27 **To be annouced** • Manuel García-Santana • Universitat Pompeu Fabra
Apr. 3 **To be annouced** • Georg Duernecker • University of Munich
24 **To be annouced** • Timo Boppart • IIES - Stockholm University
May 6 **To be annouced** • Pete Klenow • Stanford University
15 **To be annouced** • Edouard Schaal • Universitat Pompeu Fabra
20 **To be annouced** • Rafael Dix Carneiro • Duke University
21 **To be annouced** • Holger Sieg • University of Pennsylvania

Courses 2019

Jun. 3-7 **Nonlinear Panels with an Emphasis on Dynamic Quantile Models** • Manuel Arellano • CEMFI

Conferences 2019

Mar. 25 **Joint Banco de Portugal and International Monetary Fund Conference on the Portuguese Economy**
Jul. 11-13 **10th Banco de Portugal Conference on Monetary Economics**
Aug. 21 **European System of Central Banks' Day-Ahead Conference**

Correspondence to the editor

Luca David Opromolla
Economics and Research Department, Banco de Portugal
spillovers@bportugal.pt

This newsletter, as well as other online information about Economic Research at Banco de Portugal is available here.

Spillovers 11 | Research in Economics at Banco de Portugal • **Banco de Portugal** Av. Almirante Reis, 71 | 1150-012 Lisboa • www.bportugal.pt • **Edition** Economics and Research Department • **Design** Communication and Museum Department | Design Unit • Lisbon, 2019 • **ISSN (online)** 2183-3761