

BANCO DE ESPAÑA  
Eurosistema

SPRING 2016

# RESEARCH UPDATE

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## Welcome to the Banco de España RESEARCH UPDATE

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This issue of the Research Update comes at a time of ongoing restructuring in the research environment at the Banco de España, following the appointment of Pablo Hernández de Cos to lead the DG Economics, Statistics and Research. It features an interview with the new Director General, in which he discusses his views on the role of research in a central bank, as well as his specific plans to decentralize research and better integrate it into the policy work of the Banco de España. It also includes a brief summary of current research priorities in the DGESR.

As always, this issue includes short feature articles outlining recent Banco de España research contributions of particular interest for economic theory and policy making. Olympia Bover discusses survey methodologies for analyzing the distribution of individual expectations about economic trends. She shows that Spanish households that were pessimistic about house price trends were not only less willing to invest in housing, but also less willing to purchase other big-ticket items, such as cars. Óscar Arce, Samuel Hurtado, and Carlos Thomas discuss the interactions between monetary policy, fiscal policy, and structural reforms in a monetary union that is going through a period of deleveraging. Their model shows potential for strong synergies between structural reforms in peripheral countries where productivity is low, fiscal stimulus in core countries that are not overburdened by debt, and forward guidance by the central bank.

Sponsoring conferences is another way the Banco de España promotes economic research. This year, it is jointly organizing, together with the Barcelona Graduate School of Economics, a pair of workshops on the topic of “Fiscal Sustainability: XXI Century”. Speakers at the workshops will discuss recent theoretical models of monetary and fiscal interactions, and will analyze options for institutional reform in the Eurozone.

The Banco de España supports these and related research activities in hopes that they will contribute to an improved understanding of economic policy, both in Spain and internationally.

*Óscar Arce*  
*Ángel Estrada*  
*Juan Francisco Jimeno*  
*Jesús Saurina*

Research Committee,  
Banco de España

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# FEATURES

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## MEASURING EXPECTATIONS FROM HOUSEHOLD SURVEYS: NEW RESULTS ON SUBJECTIVE PROBABILITIES OF FUTURE HOUSE PRICES

OLYMPIA BOVER

WORKING PAPER N° 1535

Despite widespread agreement on the fundamental role of expectations in explaining behavior, direct measurement of individual expectations is a relatively recent activity. The standard practice in the economics of the last century was to infer the individuals' decision process from their observed choices, but this strategy requires strong assumptions. Alternatively, macroeconomic analysts often use surveys of professional forecasters, but the relevant expectations are those held by individuals and firms.

There is still uncertainty among economists about the value of addressing subjective probabilistic expectations in household surveys. Are household expectations collected through surveys trustworthy? Do subjective household survey expectations really improve the ability to predict behavior?

Recently, questions on probabilistic house price expectations have been introduced in the Spanish Survey of Household Finances (Encuesta Financiera de las Familias, EFF). This paper analyzes the data on subjective expectations about house prices collected in that Survey. Households are asked to distribute ten points among five different scenarios concerning the price change of their homes over the next 12 months. In this way respondents provide information not only about point expectations but also about the probabilities they assign to different future outcomes, and hence reveal some information about their degree of uncertainty.

This analysis shows that asking questions of this type to Spanish households is feasible, as shown by the high response rate and by the results of a coherency analysis.

### 1 Subjective house price expectations in the Spanish Survey of Household Finances

Individuals answering the 2011 EFF questionnaire were asked the following:

*We are interested in knowing how you think the price of your home will evolve in the next 12 months: Distribute 10 points among the following 5 possibilities, assigning more points to the scenarios you think are more likely (assign 0 if a scenario looks impossible).*

*Large drop (more than 6%)*

*Moderate drop (around 3%)*

*Approximately stable*

*Moderate increase (around 3%)*

*Large increase (more than 6%)*

*Don't know*

*No answer*

One motivation for introducing this question in the EFF is the importance of real estate assets in the wealth of Spanish households (80% of the value of household assets) all along the wealth distribution (88% for the bottom quartile and 67.5% for the top decile). Aside from a high proportion of owner occupier households (83%), 36% of Spanish households hold some other real estate property.

It is also a timely question due to the housing market collapse that shattered house price expectations after 2007 in Spain. The number of households buying housing dropped dramatically from an overall annual average rate of 2.3% between 2002 and 2005 to 1.1% in 2011. According to the data I analyze, in 2011 over 23% of households expected a large drop (of over 6%) in the future price of their homes. Moreover, among households expecting such large drops, the fraction who bought a car was half the fraction in the total population (4.5% instead of 9.4%).

**Item non-response.** Only 4.1% of households who participated in the EFF2011 did not answer the house price expectation question.<sup>1</sup> This percentage is higher for non-owner occupiers (10.7%) than for owners of their main residence (3.2%). Men are more prone to answering the question than women (2.8% vs. 6.2% non-response) and non-response rates decrease with education (7% for individuals with up to primary education, 2.3% for those with secondary education, and 1.4% in case of holding a university degree). By age, the non-response of people over 64 stands out.

**Bunching in the middle of the scale.** The percentage of respondents placing all ten points in the middle-of-the-scale option is 18.8%. While a fraction of individuals giving all ten points to the no house price change option may do so because they are unable to express beliefs about the future path of house prices, there may be others who strongly believe that the price of their house will experience no change over the next 12 months.

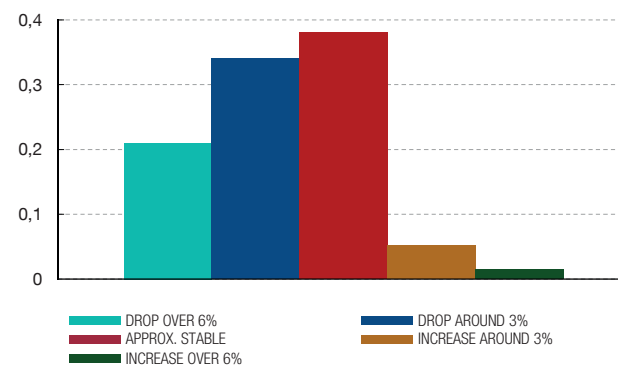
**Number of intervals used.** 61% of the respondents express uncertainty by putting some probability mass in more than one interval, while 28% of all respondents use more than two intervals (see Table 3 of the paper). Only 6.3% use all five intervals.

**Using non-adjacent intervals.** There is a negligible fraction of respondents (1.6%) that assign non-zero probabilities to non-adjacent intervals.

**Average histogram and most frequent answers.** Figure 1 shows an average histogram, showing the percentage of probability mass placed in each of the 5 predefined intervals of the density function. The figure shows that respondents overwhelmingly put most of the probability mass in the expected drop-in-price region. Therefore, Spanish households at the end of 2011 were in general not expecting increases in the price of their homes over the next 12 months.<sup>2</sup> But importantly, around this average of distributions there is substantial heterogeneity in individual subjective probability distributions. As an illustration, I order the individual distributions by their median and show some percentiles of this “distribution of distributions” (Figure 2).

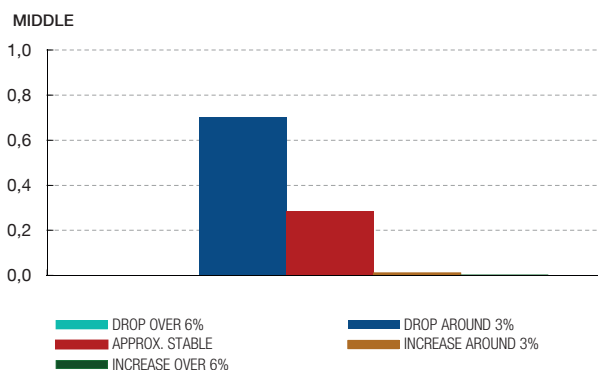
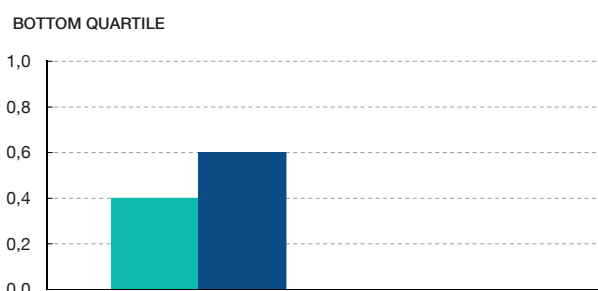
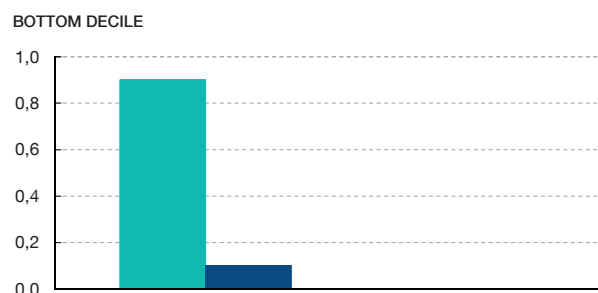
**No uncertainty.** 33% of respondents believe the price of their homes will drop for sure during 2012 (they distribute all points between intervals 1 and 2 –large or

**FIGURE 1**  
AVERAGE PROBABILITY DISTRIBUTION OF FUTURE HOUSE PRICES EFF 2011



SOURCE: Banco de España, Spanish Survey of Household Finances (EFF).

**FIGURE 2**  
ORDERING INDIVIDUAL DISTRIBUTIONS BY THEIR MEDIAN: PROBABILITY DISTRIBUTIONS FOR SPECIFIC QUANTILES OF THE MEDIAN

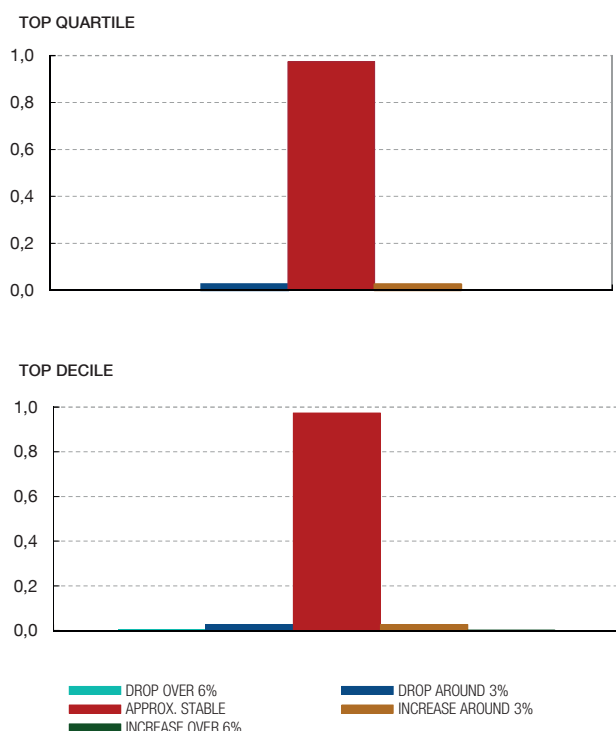


SOURCE: Banco de España, Spanish Survey of Household Finances (EFF).

<sup>1</sup> Taking into account population weights the estimated percentage in the population is 5%.

<sup>2</sup> Aggregate house prices had been falling in Spain since 2007.

ORDERING INDIVIDUAL DISTRIBUTIONS BY THEIR MEDIAN: PROBABILITY DISTRIBUTIONS FOR SPECIFIC QUANTILES OF THE MEDIAN (con't) **FIGURE 2**



SOURCE: Banco de España, Spanish Survey of Household Finances (EFF).

moderate drop). Over half of these respondents attribute all ten points to one of the two price drop alternatives, and hence answer without uncertainty.

## 2 Relating heterogeneity in expectations to housing and household characteristics

I use the subject responses to fit a probability distribution for each respondent and calculate all individual quantiles by linear extrapolation.<sup>3</sup> To look at the variability in these distributions, I estimate least squares regressions of individual quantiles on measured characteristics and postal code dummies.

**Individual density position measures and demographics.** I examine the association between quantiles at various points of the estimated individual densities and demographics, within postal codes. In particular I consider the individual median and the 10<sup>th</sup>, 25<sup>th</sup>, 75<sup>th</sup>, and 90<sup>th</sup> percentiles as distributional measures for each respondent.

<sup>3</sup> The distribution is assumed to be “saturated”. This is a technical assumption which helps avoid placing restrictions on the form of the distribution.

The regression equations are of the form:

$$q_{ti} = X_i \beta_\tau + Z_i \gamma_\tau + u_{ti}$$

where  $X_i$  is a vector of household characteristics such as age, education, gender, income and wealth. Moreover,  $Z_i$  is a vector of house characteristics, which includes postal code dummies, the logarithm of the household’s estimate of the current price per square meter of the house, and in some cases also an indicator of age of the house.

We observe smaller expected declines in the lower part of the distribution as age increases. In addition, the results on gender stand out. Being a woman produces a positive shift in house price expectations that is particularly noticeable at the median and at the top quartile. This is difficult to explain in terms of differences in information as one may do with occupation or age. This effect only appears after controlling for postal code fixed effects.

**Uncertainty and demographics.** As a first measure of individual forecast uncertainty I consider the inter-quartile range. A distinct effect on uncertainty is age. Older people express less uncertain expectations.

Are people with more certain expectations more accurate? As an indicator of the potential association between accuracy and certainty I calculated the correlation between the median and the inter-quartile range of the individual subjective distributions. It turns out to be -0.4. Therefore, more certain individuals tend to predict smaller decreases in house prices. Given the actual declines described above, such negative correlation would suggest that more certain expectations are less accurate. This result is consistent with recent evidence in psychology that superforecasters are more uncertain about their forecasts.

**Importance of detailed location of the house.** Location at the postal code level accounts for 97% of the observed variation in the estimated median expectation and for 95% of the variation in uncertainty across households (as measured by the inter-quartile range).

**Relating expectations to local housing and labour markets.** Estimated postal code fixed effects are regressed on housing and labour market variables, in particular rates of return on housing and unemployment rates at the province level. The results show that when forming expectations about the future price of their home respondents extrapolate the recent evolution of the labour and housing markets in their province. This

is true both for the location of the distribution and for the measure of uncertainty. For example, an increase in the unemployment rate in the previous year of 1 percentage point leads to a decrease of 0.18 percentage point in expected median house price, and to an increase of 0.1 point in uncertainty as measured by the inter-quartile range.

### 3 House price expectations and consumption decisions

**Expectations and decisions.** One of the main purposes of collecting subjective expectation data is to help understand behavior. I use information on expenditure outcomes on various items available in the EFF to see if house price expectations are predictive of purchase and expenditure decisions once a rich set of controls are taken into account.

**Empirical model.** In the empirical models I include two variables measuring household beliefs about future house prices. To reflect the location of those expectations, a dummy is defined taking the value 1 for people expecting a large drop with certainty (that is, people who assign all 10 points to the option “more than 6%” drop). To capture uncertainty about the expectation location, another dummy is defined taking the value 1 for respondents assigning points to more than one option.

The information in the EFF makes it possible to control for expectations about future household income and hence identify house price expectations net of income

expectations. Additionally, the occurrence of positive or negative income shocks is controlled for by exploiting the information provided by a question in the EFF on whether current household income is higher than usual, lower than usual, or as usual. Other variables included in the models are: log net household wealth and its interactions with the house price expectations dummies, respondent gender, age, number of persons in the household, couple dummy, children dummy, and labour status dummies for the respondent and partner (if any).

**Results.** The results in Table 1 show that the most pessimistic households have a significantly lower probability of buying a house than the rest. The reduction in probability is of 0.8 percentage points at the median wealth level, but higher (1.24 pp) at the 80<sup>th</sup> wealth percentile. Uncertainty about the evolution of future house prices is also associated with reductions in the probability of buying a house. The magnitude of this reduction is 0.6 pp at the median and 0.8 pp at the 80th percentile. Larger effects at the top of the wealth distribution appear sensible, as wealthier households are the ones most prone to buying second housing.

Expecting a large drop in house prices is also associated with a 4.5 pp decrease in the probability of buying a car at the median level of wealth, but not for wealthier households. However, uncertain expectations are positively correlated with the probability of buying a car and, mostly, with other big ticket items. These results could reflect some substitution effects.

EFFECTS OF HP EXPECTATIONS ON AVERAGE PROBABILITIES OF PURCHASE

TABLE 1

Memo: % of households buying	Other housing 0.57%		Car purchase 9.42%		Other big ticket items 41.99%	
	(1) Municip. dummies	(2) Within postal codes	(3) Municip. dummies	(4) Within postal codes	(5) Municip. dummies	(6) Within postal codes
Expectation variables (a)						
Large certain drop						
at median net wealth	-0.826**	-0.753***	-4.46**	-5.95***	2.80	-3.55
at 80th percentile of net wealth	-1.24***	-0.935***	-2.83	-2.87	2.07	-3.45
Uncertainty						
at median net wealth	-0.629*	-0.600***	2.67*	1.02	8.09***	0.360
at 80th percentile of net wealth	-0.803**	-0.709***	2.64	1.66	12.5***	3.34
Income higher than current	-0.145	0.0841	2.14	-0.477	0.724	1.15
Income lower than current	0.656	-0.231	1.77	1.21	-0.007	-3.40
Observations	5,019	5,0	5,019	5,0	5,019	5,0

NOTE: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

a Probabilities are shown in percentage terms. Columns 1, 3, 5 from probit and 2,4,6 from tobit.

## **POLICY SPILLOVERS AND SYNERGIES IN A MONETARY UNION**

ÓSCAR ARCE, SAMUEL HURTADO AND CARLOS THOMAS

WORKING PAPER #1540

*We provide a general equilibrium framework for analyzing the effects of supply and demand side policies, and the potential synergies between them, in an asymmetric monetary union that faces a liquidity trap and a slow deleveraging process in its ‘periphery’. We find that the joint implementation of pro-competition structural reforms in the periphery, a fiscal expansion in the ‘core’, and forward guidance about the future path of nominal interest rates, produces positive synergies between the three policies: forward guidance reinforces the expansionary effects of country-specific policies, and the latter in turn improve the effectiveness of forward guidance.*

### **1 Introduction**

The global financial crisis that began in 2008 triggered a deep and prolonged setback for aggregate demand in all major industrialized economies, paving the way for persistently low inflation rates. In the European Monetary Union (EMU), the crisis has also forcefully revealed the imbalances and efficiency gaps across member states. In most of the so-called ‘periphery’, the combination of high indebtedness, deleveraging, and widespread dysfunctions in labor and product markets is feeding fears of a long-lasting scenario of weak and fragile growth, with adverse consequences for the entire union.

In this context, many voices are calling for a simultaneous implementation of supply- and demand-side policies within the EMU. On the supply side, the removal of inefficiencies and the enhancement of market competition are invoked as the only lever available to the periphery so as to regain its competitiveness vis-à-vis the rest of the EMU. On the demand side, given that the periphery lacks sufficient fiscal space to stimulate domestic demand, and that the European Central Bank is already constrained by the zero lower bound (ZLB), attention has shifted towards the role of non-standard monetary policies and the possibility of expansionary fiscal measures in the ‘core’. Moreover, the policy debate has progressively moved towards two closely interlinked issues: first, the potential for policy-induced spillovers across countries within EMU and, second, the likely complementarities or synergies between non-standard monetary policy, structural reforms, and fiscal policy<sup>1</sup>.

The issue of fiscal spillovers in a monetary union has recently been the subject of formal quantitative analysis, e.g. by Erceg and Lindé (2013) and Blanchard, Erceg and Lindé (2014). However, relatively less is known about cross-country spillovers induced by the adoption of structural reforms in one part of the union. Critically, even less is known about the potential synergies between such structural reforms, fiscal expansion in the rest of the union, and non-conventional monetary policies at the union level. In this paper, we address these issues in the context of a multi-country monetary union model.

### **Methodology**

We construct a nonlinear general equilibrium model of an asymmetric two-country (‘core’ and ‘periphery’) monetary union. In both countries, households and firms borrow long-term subject to collateral constraints. We construct a baseline scenario aimed at capturing key features of the current macroeconomic landscape in the EMU. First, the periphery is assumed to be hit by an adverse financial shock that tightens the collateral requirements on the loans to households and firms. This shock, combined with collateral constraints and long-run debt, gives rise to a protracted and costly process of deleveraging in the periphery with implications for the monetary union as a whole. Second, a union-wide demand shock causes a reduction in inflation that is large enough to drive the monetary authority’s nominal interest rate towards its ZLB. Both shocks combine to produce a long-lasting recession and persistently low inflation in the currency union as a whole.

### **Results**

Against this background, we first analyze the effects of two types of country-specific macroeconomic policies: structural reforms in the periphery (consisting of reductions in price- and wage-setters’ monopolistic rents), and a temporary increase in government spending in the core. We show that these two policies have opposite spillover effects in the context of a liquidity trap. On one hand, a fiscal expansion in the core produces sizeable positive spillovers for the periphery, through the mechanism described by Blanchard et al. (2014): the increase in core inflation favors the periphery both by improving its

<sup>1</sup> See, for example, Draghi (2014, 2015), European Commission (2014) and IMF (2014).

competitiveness and, for as long as the economy remains at the ZLB, by reducing its real interest rates. By contrast, (deflationary) structural reforms in the periphery tend to produce a negative (though relatively small) effect on the core.

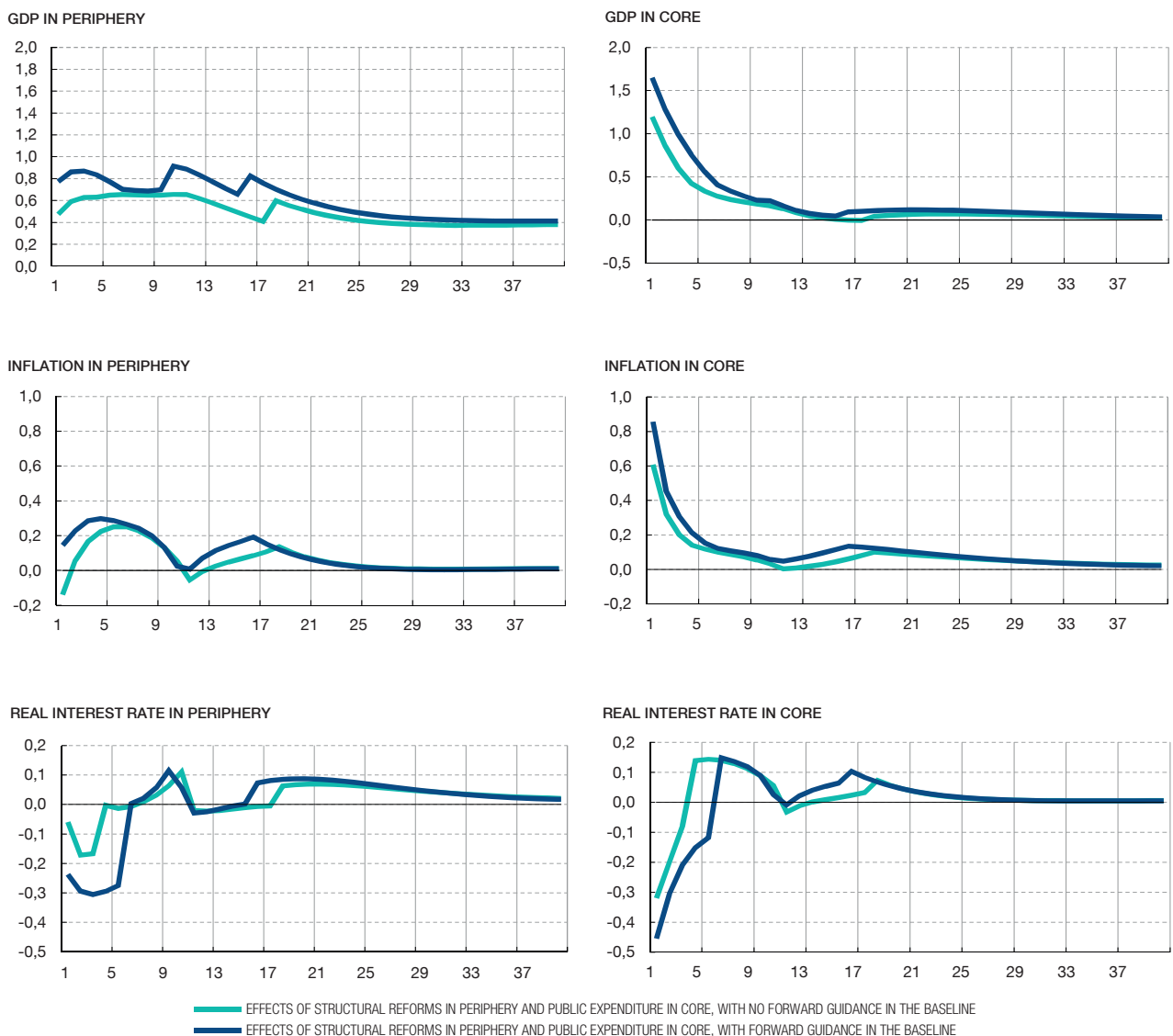
We next consider the possibility that the monetary authority follows a ‘forward guidance’ policy aimed at raising area-wide GDP and inflation while in the liquidity trap. In particular, we assume the central bank commits to keeping the interest rate at zero for two more quarters than what its standard rule would dictate. Such a policy is found to have positive effects, of a similar magnitude, in the output of both regions.<sup>2</sup>

We then quantify the synergies between the three policies. Figure 1 displays the effects of jointly implementing both types of country-specific policies (structural reforms in the periphery, fiscal expansion in

<sup>2</sup> This last result obtains despite the fact that, during the deleveraging phase (which lasts longer than the liquidity trap in our simulations), the credit flow in the periphery is frozen, implying that credit-constrained agents are not exposed to the usual intertemporal consumption substitution channel of forward guidance. Thus, in our setup the effectiveness of forward guidance on the periphery is related to other transmission channels, such as the core-periphery trade channel and net worth effects on the balance-sheets of deleveraging agents.

MARGINAL EFFECTS OF NATIONAL POLICIES, WITH AND WITHOUT FORWARD GUIDANCE IN THE BASELINE (a)

FIGURE 1



SOURCE: Authors' calculations.

a Deviations from the respective baseline scenario.



the core) relative to two different reference scenarios: our baseline no-policy scenario, and an alternative baseline in which the central bank implements forward guidance. The expansionary effects of national stimulus measures increase by a sizable amount when they are accompanied by forward guidance by the monetary authorities.<sup>3</sup> Importantly, these positive synergies take place both for the monetary union as a whole and for each individual country.

We identify two prominent channels for these synergies. On the one hand, country-specific policies produce expansionary effects that run beyond the short term, especially in the case of structural reforms that may yield permanent effects on output. Thus, the forward-guidance-driven reduction in long-run real interest rates raises the present-discounted value of such gains, via income and net worth effects, with the resulting positive effect on current consumption and investment (*discounting effect*).

On the other hand, different country-specific policies have different effects on the date at which the nominal rate exits the ZLB (the lift-off date) and the intensity of its rise once outside the ZLB; we refer to this channel as the *lift-off effect*. In particular, an inflationary demand-side measure such as a fiscal expansion in the Core brings forward the lift-off date, which moderates its expansionary effect on output. This is shown in Figure 2, which displays how each national policy affects the path of union-wide inflation and the nominal interest rate relative to the baseline scenario. By postponing lift-off, forward guidance enhances the expansionary effects of Core fiscal stimulus. The opposite is true for deflationary supply-side policies, such as product market reforms in the Periphery. Therefore, the positive synergies between the joint national policy package and forward guidance shown in Figure 1 stem both from the discounting effect, and from the positive lift-off effect of fiscal expansion in the core.

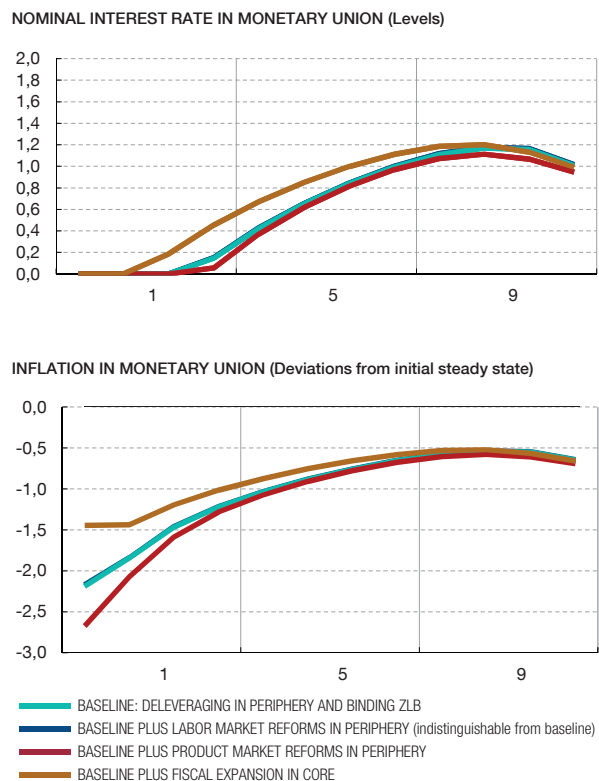
## Conclusions

We have provided a general equilibrium framework for analyzing the effects of supply and demand side

<sup>3</sup> Correspondingly, the expansionary impact of forward guidance is substantially enhanced if it is accompanied by implementation of the respective policy packages in the two countries.

EFFECTS OF COUNTRY-SPECIFIC POLICIES ON NOMINAL INTEREST RATES AND INFLATION

FIGURE 2



SOURCE: Authors' calculations.

policies, the associated cross-country spillovers, and the potential synergies between such policies, in an asymmetric monetary union that faces a liquidity trap and a slow deleveraging process in its 'periphery'. Inspired by the current situation in the EMU, we consider on the effects of: (i) forward guidance about the future path of nominal policy interest rates, as a means of alleviating the constraints imposed by a binding ZLB; (ii) a fiscal expansion in the 'core', where presumably such fiscal room exists; and (iii) pro-competition structural reforms in the periphery. We find potentially sizable economic gains from the joint implementation of these policies. Forward-guidance reinforces the expansionary effects of country-specific policies, and the latter in turn improve the effectiveness of forward guidance. Our analysis stresses the importance of jointly implementing forward guidance and both supply- and demand-side country-specific policies, as it is this package that maximizes the positive synergies.

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# PUBLICATIONS

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## RECENT WORKING PAPERS

[LINK TO WORKING PAPERS PAGE](#)

### [WORKER FLOWS IN THE EUROPEAN UNION DURING THE GREAT RECESSION](#)

JOSÉ MARÍA CASADO, CRISTINA FERNÁNDEZ AND JUAN F. JIMENO

WORKING PAPER N° 1529

We firstly measure the contribution of worker flows across employment, unemployment, and non-participation to the change in unemployment in eleven EU countries during the period 2006-2012, paying special attention to which socio-demographic groups in each of the countries were most affected by job creation and job destruction during the crisis. We find that age, to a greater extent than educational attainment, is the main determinant of flows from employment into unemployment, particularly in those countries where unemployment increased most. Secondly, we highlight some institutional features of the labour market (employment protection legislation, unemployment insurance and the incidence of active labour market policies) that help explain the cross-country differences in flows between employment and unemployment and in their socio-demographic composition. Finally, we examine whether the crisis has led to some employment reallocation across sectors, finding that, so far, there is no clear evidence in favour of cleansing effects.

### [THE IMPACT OF THE EURO ON EURO AREA GDP PER CAPITA](#)

CRISTINA FERNÁNDEZ AND PILAR GARCÍA PEREA

WORKING PAPER N° 1530

This paper poses the following question: what would euro area GDP per capita have been, had the monetary union not been launched? To this end we use the synthetic control methodology. We find that the euro did not bring the expected jump to a permanent higher growth path. During the early years of the monetary union, aggregate GDP per capita in the euro area rose slightly above the path predicted by its counterfactual; but since the mid-2000s, these gains have been completely eroded. Central European countries – Germany, the Netherlands and Austria – did not seem to obtain any gains or losses from the adoption of the euro. Ireland, Spain and Greece registered positive and

significant gains, but only during the expansionary years that followed the launch of the euro, while Italy and Portugal quickly lagged behind the GDP per capita predicted by their counterfactual. We test the robustness of the synthetic estimation not only to the exclusion of any particular country from the donor pool but also to the omission of each of the selected determinants of GDP per capita and to the reduction of the dimensions in the optimisation programme, namely the number of GDP determinants.

### [INSTITUTIONAL DRIVERS OF CAPITAL FLOWS](#)

IRMA ALONSO ÁLVAREZ

WORKING PAPER N° 1531

This paper empirically analyzes the role of institutional factors in shaping the dynamics of gross capital flows. We build an institutional quality index and test its relevance for both gross capital inflows and outflows using a panel of 56 countries, differentiating between high-income and low-income economies, over the period 1996-2012. We find that institutional quality is a significant factor affecting the behavior of both foreign and domestic investors. Countries with better governance and public sector credibility tend to attract more flows. Causality is confirmed through IV estimates for a sub-sample of 25 countries. In addition, we show that some governance features matter more than others. Specifically, the most relevant institutional indicators are Government Effectiveness and Regulatory Quality, which capture the government's ability to implement adequate, sound and credible policies. Finally, we assess the role of institutional quality during periods of financial stress. The analysis suggests that domestic investors in countries with a sound institutional framework tend to retrench more capital, mitigating the negative effects of declining gross capital inflows. Therefore, sound institutions incentivize the build-up of external assets in high-income countries by promoting

larger outflows in normal times. They also facilitate the repatriation of such assets during crises.

### DISAGREEMENT ABOUT INFLATION AND THE YIELD CURVE

PAUL EHLING, MICHAEL GALLMEYER,  
CHRISTIAN HEYERDAHL-LARSEN AND PHILIPP ILLEDITSCH  
WORKING PAPER N° 1532

We show theoretically that inflation disagreement drives a wedge between real and nominal yields and raises their levels and volatilities. We demonstrate empirically that an inflation disagreement increase of one standard deviation raises real and nominal yields and their volatilities, break-even inflation, and the inflation risk premium by at least 30% of their respective standard deviations. Inflation disagreement is positively related to consumers' cross-sectional consumption growth volatility and trading in bonds, interest rate futures, and inflation swaps. Calibrating the model to disagreement, inflation, and yield data reproduces the economically significant impact of inflation disagreement on real and nominal yield curves.

### CONTROLLING A DISTRIBUTION OF HETEROGENEOUS AGENTS

GALO NUÑO AND BENJAMIN MOLL  
WORKING PAPER N° 1533

This paper analyzes the problem of a benevolent planner wishing to control a population of heterogeneous agents subject to idiosyncratic shocks. This is equivalent to a deterministic control problem in which the state variable is the cross-sectional distribution. We show how, in continuous time, this problem can be broken down into a dynamic programming equation plus the law of motion of the distribution, and we introduce a new numerical algorithm to solve it. As an application, we analyze the constrained-efficient allocation of an Aiyagari economy with a fat-tailed wealth distribution. We find that the constrained-efficient allocation features more wealth inequality than the competitive equilibrium.

### THE UNBEARABLE DIVERGENCE OF UNEMPLOYMENT IN EUROPE

TITO BOERI AND JUAN F. JIMENO  
WORKING PAPER N° 1534

Unemployment in Europe is not only “too high”, it is also too different across countries that belong to a monetary union. In this paper we i) document this increasing heterogeneity, ii) try to explain it and iii) draw from our diagnosis indications as to the appropriate set

of policies to reduce unemployment and labour market disparities. Our analysis suggests that the divergence in labour market outcomes across Europe is the by-product of interactions between, on the one hand, shocks of varying size and nature, and, on the other hand, country-specific labour market institutions. We argue that EU policy coordination and conditionality during the Great Recession and the euro area debt crisis did not properly take into account these interactions. We also propose a change in the European policy approach for fighting unemployment.

### MEASURING EXPECTATIONS FROM HOUSEHOLD SURVEYS: NEW RESULTS ON SUBJECTIVE PROBABILITIES OF FUTURE HOUSE PRICES

OLYMPIA BOVER  
WORKING PAPER N° 1535

See Features section.

### HETEROGENEITY OF MARKUPS AT THE FIRM LEVEL AND CHANGES DURING THE GREAT RECESSION: THE CASE OF SPAIN

CRISTINA FERNÁNDEZ, AITOR LACUESTA, JOSÉ MANUEL MONTERO  
AND ALBERTO URTASUN  
WORKING PAPER N° 1536

We broaden the conceptual framework of estimating markups at the sectoral level developed by Roeger (1995), and extended by Crépon et al. (2005) with labour market imperfections, to account for firm-level heterogeneity derived from differences in productivity. We estimate this model with a comprehensive panel of Spanish non-financial corporations for the period 2001-2007 to find that perfect competition is widely rejected in the data. More interestingly, within each sector, firms with higher productivity present higher markups. Further, we use this empirical setting to estimate changes in firm-level markups over the course of the crisis (2008/2012). Our results indicate that for around 50% of sectors average markups increased, following a decrease in the number of firms, while for around 35% of industries the relevance of within-sector markup heterogeneity decreased at the same time that the variance of within-sector TFP increased. This last result suggests that the simple changes in the number and composition of competing firms cannot explain within-sector markups and we require additional factors to account for recent developments. For instance, we provide evidence that both an increase in consumer product substitutability and in fixed entry costs during the crisis might be a good explanation.

## **THE INFLUENCE OF RISK-TAKING ON BANK EFFICIENCY: EVIDENCE FROM COLOMBIA**

MIGUEL SARMIENTO AND JORGE E. GALÁN

WORKING PAPER N° 1537

This paper presents a stochastic frontier model with random inefficiency parameters which captures the influence of risk-taking on bank efficiency and distinguishes the effects among banks with different characteristics. The model is fitted to a 10-year sample of Colombian banks. Cost and profit efficiency are found to be over and underestimated, respectively, when risk measures are omitted or are not accurately modelled. Moreover, the magnitudes at which similar levels of risk affect bank efficiency vary with size and affiliation. In particular, domestic and small Colombian banks benefit more from being highly capitalised, while large and foreign banks benefit from higher exposure to credit and market risk. Holding more liquid assets is found to affect efficiency only at domestic banks. Lastly, we identify some channels that can explain these differences and provide insights for prudential regulation.

## **PRUDENTIAL FILTERS, PORTFOLIO COMPOSITION AND CAPITAL RATIOS IN EUROPEAN BANKS**

ISABEL ARGIMÓN, MICHEL DIETSCH AND ÁNGEL ESTRADA

WORKING PAPER N° 1538

European banks hold 10% of their total assets in portfolios that give rise to unrealised gains and losses which under Basel III will no longer be allowed to be removed from banks' regulatory capital. Using a sample of European banks, and taking advantage of the different treatment afforded, under Basel II, to such gains and losses among jurisdictions and instruments and over time, we find evidence that: a) the inclusion of unrealised gains and losses in capital ratios increases their volatility; b) the partial inclusion of unrealised gains and total inclusion of losses on fixed-income securities in regulatory capital, compared with the complete exclusion of both (neutralisation), reduces the volume of securities categorised as Available For Sale (AFS), thus potentially affecting liquidity management and demand for bonds (most of which are currently government bonds); and c) the higher the partial inclusion of gains from debt instruments, the lower the holdings of such instruments in the AFS category and the higher the regulatory Tier 1 capital ratio, thus affecting banks' capital buffer strategy. We do not find evidence that the removal of neutralisation would impact capital ratios.

## **UNDERSTANDING THE PUBLIC SECTOR PAY GAP**

MARIA M. CAMPOS, DOMENICO DEPALO, EVANGELIA PAPAPETROU,

JAVIER J. PÉREZ AND ROBERTO RAMOS

WORKING PAPER N° 1539

We uncover the short- and long-run structural determinants of the existing cross-country heterogeneity in public-private pay differentials for a broad set of OECD countries. We explore micro data (EU-SILC, 2004-2012) and macro data (1970-2014). Three results stand out. First, when looking at pay gaps based on individual data, more than half of the cross-sectional variation of the sample can be accounted for by the degree of exposure to international competition, and by the size of the public sector labour force and its composition (i.e. the intensity in the provision of pure public goods), while labour market institutions play a very limited role. Second, we find that pay gaps have narrowed significantly during the recent financial crisis; nevertheless, this decrease can be explained by the widespread process of fiscal consolidation rather than by structural factors. Third, we find that in the long-run openness to international trade and improvements in the institutional quality of governments are associated with decreases in the public-private wage gap. Our findings can be rationalised by a body of research stressing non-competitive wage settlements in the public sector.

## **POLICY SPILLOVERS AND SYNERGIES IN A MONETARY UNION**

ÓSCAR ARCE, SAMUEL HURTADO AND CARLOS THOMAS

WORKING PAPER N° 1540

See Features section.

## **THE COUNTERCYCLICAL CAPITAL BUFFER IN SPAIN: AN ANALYSIS OF KEY GUIDING INDICATORS**

CHRISTIAN CASTRO, ÁNGEL ESTRADA AND JORGE MARTÍNEZ

WORKING PAPER N° 1601

This paper analyses a group of quantitative indicators to guide the Basel III countercyclical capital buffer (CCB) in Spain. Using data covering three stress events in the Spanish banking system since the early 1960s, we describe a number of conceptual and practical issues that may arise with the Basel benchmark buffer guide (i.e. the credit-to-GDP gap) and study alternative specifications plus a number of complementary indicators. In this connection, we explore ways to deal with structural changes that may lead to some shortcomings in the indicators. Overall, we find that

indicators of credit ‘intensity’ (where we propose the ratio of changes in credit to GDP), private sector debt sustainability, real estate prices and external imbalances can usefully complement the credit-to-GDP gap when taking CCB decisions in Spain.

### **MULTIVARIATE MOMENTS EXPANSION DENSITY: APPLICATION OF THE DYNAMIC EQUICORRELATION MODEL**

TRINO-MANUEL NÍGUEZ AND JAVIER PEROTE

WORKING PAPER N° 1602

In this study, we propose a new semi-nonparametric (SNP) density model for describing the density of portfolio returns. This distribution, which we refer to as the multivariate moments expansion (MME), admits any non-Gaussian (multivariate) distribution as its basis because it is specified directly in terms of the basis density’s moments. To obtain the expansion of the Gaussian density, the MME is a reformulation of the multivariate Gram-Charlier (MGC), but the MME is much simpler and tractable than the MGC when positive transformations are used to produce well-defined densities. As an empirical application, we extend the dynamic conditional equicorrelation (DECO) model to an SNP framework using the MME. The resulting model is parameterized in a feasible manner to admit two-stage consistent estimation, and it represents the DECO as well as the salient non-Gaussian features of portfolio return distributions. The in- and out-of-sample performance of a MME-DECO model of a portfolio of 10 assets demonstrates that it can be a useful tool for risk management purposes.

### **HOW FIRMS BORROW IN INTERNATIONAL BOND MARKETS: SECURITIES REGULATION AND MARKET SEGMENTATION**

ALBERTO FUERTES AND JOSÉ MARÍA SERENA

WORKING PAPER N° 1603

We investigate how firms in emerging economies choose among the different international bond markets: global, US144A and Eurobond markets. By exploiting the connection between the market of issuance and regulatory disclosure of information, we show that firms with poorer credit quality, less ability to absorb flotation costs and more informational asymmetries issue debt in US144A and Eurobond markets, where regulation is lighter and information is less public. On the contrary, firms issuing global bonds – subject to full SEC requirements – are financially sounder and larger. This exercise also shows that, following the global crisis, firms are more likely to tap less regulated debt markets. The results are supported by descriptive evidence, univariate non-parametric analyses, and conditional and multinomial

logit analyses. To research the issue, we have constructed a novel dataset containing information on firms’ debt securities issuance and their financial accounts for the period 2000-2014. To account for firms’ complex structures, we look at the balance sheet of the guarantor of debt, which need not be the issuing company. The dataset comprises 3,944 debt securities, guaranteed by firms of 36 emerging economies, which amount to a total of 1.2 USD trillion in debt issued.

### **FISCAL POLICY AND THE CYCLE IN LATIN AMERICA: THE ROLE OF FINANCING CONDITIONS AND FISCAL RULES**

ENRIQUE ALBEROLA, IVÁN KATARYNIUK, ÁNGEL MELGUIZO

AND RENÉ OROZCO

WORKING PAPER N° 1604

Their strong macroeconomic position when the financial crisis erupted allowed Latin American economies to mitigate its impact through fiscal expansions, reversing the characteristic procyclical behaviour of fiscal policy. At the same time, in the last two decades fiscal rules have been extensively adopted in the region. This paper analyses the stabilising role of discretionary fiscal policy over time, and the role of fiscal financing conditions and fiscal rules in the behaviour of a sample of eight Latin American economies. The analysis shows three main results: i) fiscal policies became countercyclical during the crisis, but they have turned procyclical again in recent years; ii) financing conditions are confirmed to be a key driver of the fiscal stance, although their relevance has recently diminished; and iii) fiscal rules are associated with a more marked stabilising role for fiscal policy.

### **DOES SLACK INFLUENCE PUBLIC AND PRIVATE LABOUR MARKET INTERACTIONS?**

ANA LAMO, ENRIQUE MORAL-BENITO AND JAVIER J. PÉREZ

WORKING PAPER N° 1605

We empirically analyse the impact of public employment and public wages shocks on private labour market outcomes by examining whether policies operate differently in periods of economic slack than in normal times. We use local projection methods and focus on the Spanish and euro area aggregate cases. We find that the degree of unemployment slack is key for determining: (i) whether public employment crowds out private employment, and (ii) the degree and extent of the influence of public wages on the private sector. In addition, we find that when fiscal consolidation is implemented at times of economic distress, public wage adjustment is to be preferred to public employment cuts when considering employment and GDP costs for the

Spanish case, while public employment retrenchment would be a better policy tool for the euro area taken as a whole. We conjecture that differences in the degree of wage rigidities and the size of the unemployment pool may rationalise our findings.

## FINANCIAL STABILITY JOURNAL

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The Financial Stability Journal (Revista de Estabilidad Financiera) is published biannually by the Banco de España, with the aim of disseminating and participating in discussions on issues related to financial stability, with special emphasis on regulation and prudential supervision. Its board of editors comprises internal and external professionals. All articles appearing in the journal, which may be authored by Banco de España staff or researchers from other institutions, are refereed by at least one member of the board of editors.

### EL MECANISMO ÚNICO DE SUPERVISIÓN Y EL PAPEL DE LAS AUTORIDADES NACIONALES

XAVIER TORRES

ESTABILIDAD FINANCIERA 29, NOVEMBER 2015, 9-28

This paper analyses the main characteristics of the Single Supervisory Mechanism (SSM), paying particular attention to the role of the national competent authorities (NCAs) and to the challenges associated with the interaction between the ECB and these NCAs. The author highlights the importance of striking a balance between the advantages of a supranational approach and harnessing the experience of the NCAs, and of promoting an all-encompassing culture in which the staff of the NCAs play a role in keeping with their knowledge and experience. He also stresses the significance of moving towards the full harmonisation of supervisory practices.

### THE BIS INTERNATIONAL BANKING STATISTICS: STRUCTURE AND ANALYTICAL USE

EMILIO MUÑOZ DE LA PEÑA AND ADRIAN VAN RIXTEL

ESTABILIDAD FINANCIERA 29, NOVEMBER 2015, 29-46

This study contributes to a better understanding of the international banking statistics compiled and published by the Bank for International Settlements (BIS). The authors describe the two main sets of data available --

locational banking statistics (LBS) and consolidated banking statistics (CBS) -- and draw on examples to present the comparative advantages of each one in analysing developments in global banking. For instance, the former are particularly suited for assessing trends in international interbank markets. The latter allow for the analysis of global banks' consolidated positions, in line with consolidation practices adopted in accounting and by banking supervisors.

### RESOLUCIÓN DE ENTIDADES DE CONTRAPARTIDA CENTRAL: UNA APROXIMACIÓN EN UN ENTORNO POSTCRISIS

VÍCTOR RODRÍGUEZ QUEJIDO AND JOSÉ MANUEL PORTERO BUJALANCE

ESTABILIDAD FINANCIERA 29, NOVEMBER 2015, 47-61

This article presents an approach to the resolution framework for central counterparties (CCPs), which requires a specific focus responding to the special characteristics of their activity. The increasingly important role they play in financial transactions, following the new regulatory requirements and the now-compulsory clearing of OTC derivatives, warrants attention to the potential systemic effects to which their particular exposure to risks and the possible breaches by their members might give rise. The authors review the characteristics that a resolution regime for these CCPs should display and the initiatives under way internationally.

### CREDIT PORTFOLIOS AND RISK WEIGHTED ASSETS: ANALYSIS OF EUROPEAN BANKS

CARLOS TRUCHARTE ARTIGAS, CARLOS PÉREZ MONTES, MARÍA ELIZABETH CRISTÓFOLI, ALEJANDRO FERRER PÉREZ AND NADIA LAVÍN SAN SEGUNDO

ESTABILIDAD FINANCIERA 29, NOVEMBER 2015, 63-85

The authors analyse the data on credit exposures and risk weighted assets (RWAs) disclosed by the European Banking Authority as a result of the comprehensive assessment of European banks in 2014. They examine exposure volumes, RWAs and RWA densities of different sub-portfolios. They find that the internal ratings based (IRB) approach is extensively used in exposures to the private sector and that this usage is more intense in situations in which there is a greater reduction in RWA density with respect to the standardised approach (SA). There is significant variation across countries both in IRB use and in savings in terms of RWA density.

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JUNE 2015

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## NEWS AND EVENTS

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#### CONFERENCE IN HOMAGE OF JOSÉ LUIS MALO DE MOLINA

MADRID, 25 APRIL 2016

On April 25, the Banco de España organized a conference to honor José Luis Malo de Molina, who retired in September, 2015 from his post as Director General of Economics, Statistics, and Research. Over his twenty-three years as DG, Mr. Malo de Molina confronted several turning points in European monetary history, including the breakdown of the Exchange Rate Mechanism in 1992-93, the introduction of the euro in 1999-2002, and the recent financial crises.

Reflecting the issues he faced as DG, the conference addressed ongoing challenges in Spain and in the Eurozone. Former Governor Jaime Caruana (now General Manager of the Bank for International Settlements) headed a panel discussion on the Economic and Monetary Union. In the course of the discussion, Charles Wyplosz (Geneva) advocated strengthening the no-bailout commitment in the Eurozone, while Tano Santos (Columbia) discussed the minimal institutions necessary for stability of the monetary union. The new Director General, Pablo Hernández de Cos, headed a second panel discussion on the challenges facing the Spanish economy, with key areas of concern including the banking system, labor markets, public finances, and productivity growth. Peter Praet, of the Executive Council of the ECB, delivered the keynote address for the conference.

## PROFILES

### PABLO HERNÁNDEZ DE COS

Director General  
Economics, Statistics and Research



*Pablo Hernández de Cos was appointed in September 2015 as Director General of Economics, Statistics, and Research at the Banco de España. Pablo is a macroeconomist specializing in the areas of public economics and fiscal policy. He began his career in the Research and Policy Analysis Divisions at the Banco de España, while simultaneously pursuing his doctorate in economics from the Universidad Complutense de Madrid, which he completed in 2004. After several years as an Advisor to the Executive Board of the European Central Bank, Pablo returned to the Banco de España to lead the Policy Analysis Division from 2007 to 2015. Pablo's research centers primarily on public finance and demographics, addressing topics such as the macroeconomic effects of fiscal policy, the impact of structural reforms, fiscal governance in a monetary union, and population health and ageing.*

**RU:** Pablo, you were recently appointed to lead the DGESR (Directorate General of Economics, Statistics, and Research), which is responsible for providing economic, financial, and statistical analysis to support the Banco de España's policy work in the Eurosystem. What is your vision for the role of the DGESR? What is its job, and how can it best carry out that job?

Historically, the Banco de España has been recognized, both at home and internationally, for the quality of its research. I've been appointed to head the DGESR after more than two decades of leadership by the previous Director General, José Luis Malo de Molina, who maintained the Banco de España's reputation for analytical excellence even as its responsibilities grew and changed.

Summarizing, I would point to three pillars that underlie the success of our research work: high-quality human capital, analytical rigor, and institutional independence. Those three pillars need to remain in place as we move forward. But the structure of the DGESR dates back to the early days of euro adoption, and the last few years have brought huge new challenges for economic policy making in general, and central banking in particular. The challenges we face are new, many of the policy instruments under consideration are new, and much of the institutional environment is new too, especially in the context of the Eurozone. So we have to consider how we can adjust our own structure and procedures, and better assign our staff and resources, to best address our evolving responsibilities.

**RU:** Perhaps we should step back for a moment and talk about goals. What is the purpose of research at a central bank, and how should it be organized to achieve its goals?

These changes in our policy environment illustrate why economic research is such an essential part of the work of a central bank. The economic environment evolves over time, the policy challenges evolve, the tools of economic and financial analysis evolve over time, and central banks need to develop strategies to respond adequately to those changes. For example, ten years ago, prior to the outbreak of the international financial crisis, economists debated whether monetary policy should respond to consumer price inflation only, or whether it should also react to financial asset prices, or other indicators of financial euphoria. Addressing a question like that requires familiarity with current

trends in financial markets, but also familiarity with trends in macroeconomic theory and in statistical methods, without forgetting economic history. That is expertise you don't pick up from textbooks alone, and you certainly don't achieve it just by passing a civil service exam. One of the best ways to stay deeply informed about the latest debates in finance and economics is to be directly involved in research on the frontiers of those disciplines.

Research work at a central bank provides crucial backing for institutional positions on policy issues, and serves to identify risks and biases in forecasts. It is an essential way to keep up with state of the art in analytical and statistical tools. It helps ensure coherence of the central bank's communication strategies, both with the public and with markets, policy makers, and researchers. It is an essential input to the development of the bank's long-run strategies for policy-making, especially when new and unforeseen challenges arise. For example, central banks are now debating which macroprudential instruments are available to promote financial stability and avoid systemic risk in the future. That sort of question requires fresh thinking from first principles, which only research can provide.

Therefore, I believe the quality of our work as a whole is strengthened by hiring some staff whose major responsibility is to undertake independent economic research, to be published in peer-reviewed international journals. These staff should be given the chance to establish their own agendas by devoting almost all of their time to research during their first two or three years at the bank. But gradually they should also move partly into policy responsibilities that take advantage of their areas of expertise. So for more than a decade, we have been hiring many new staff members through the international academic job market, rather than the traditional civil service examination system. I feel that these staff are having a tremendous impact on the quality of our analysis, both through their own work and via the dissemination of their knowledge and skills to the rest of the staff.

**RU: Soon after your appointment, you carried out a substantial shakeup and restructuring of the DGESR.**

Yes, when I took up my post last September, the Banco de España Executive Commission asked me to analyze how the DGESR could be reorganized to

reinforce its analytical and advisory capabilities. The restructuring is an attempt to respond to that mandate.

**RU: The changes are also motivated by a recent external evaluation of Banco de España research, aren't they?**

Yes, in 2010 the Governor requested an outside evaluation of the Banco de España's research output by a panel of independent academic experts. It was a prestigious group, headed by Prof. Lucrezia Reichlin, formerly of the ECB, now at London Business School. The academics reviewed the impact of publications by our research staff, and conducted interviews with staff, both in the DGESR and in other Directorates of the bank, to assess the academic quality of our work as well as its role in our policy process. Our guidelines for the restructuring of the DGESR were in part motivated by the panel's recommendations.

The panel's assessment of research in the DGESR and in other Directorates was quite positive, but it identified a number of ways our governance could be improved to make our work more effective. They found that research work was perceived to be quite distant from policy analysis, and that researchers wanted a greater impact on the bank's policy process. One major theme of the report was the idea that research and policy work can and should be complementary activities, and that the quality and the relevance of economic research can also be complements. Research benefits policy work by keeping human capital up to date, introducing the latest analytical tools, bringing fresh, independent thinking to policy debates, and by identifying problems and issues that might be neglected by the bank's regular forecasting and analysis activities. At the same time, policy work can discipline and focus research by exposing researchers to questions of practical importance and relevant data sources, which can result in sharper theoretical and empirical models. So researchers who devote part of their time to policy tasks may publish more successfully than they would even with full-time dedication to research. Therefore the panel recommended a mix of policy and research responsibilities for all economics staff, varying according to individuals' comparative advantages. And it recommended greater integration of policy and research tasks within each analytical division of the DGESR.

On the other hand, policy work and research have very different rhythms. Briefings, forecasts, and regular publications must all be timely, and all benefit from direction by senior staff to identify questions and issues of practical relevance. Research projects may instead require a long time horizon, and benefit from the independent criteria of the researchers themselves, who may advance the methodological frontier or may perceive policy issues or risks that lie outside of current debates. It is also important to provide incentives for high-quality research. Promotions should be based on research contributions as well as policy work. Research also needs to be made sufficiently visible, so that researchers receive recognition from their colleagues, both inside and outside of the bank—the establishment of the *Research Update* was one initiative to improve visibility. We have also changed the format of our preparatory meetings prior to the Governing Council meetings on monetary policy in Frankfurt, calling on our researchers to participate and including presentations of recent related research. That is intended both to keep research staff informed and motivated about policy questions, and to invite research input when we take positions on policy issues.

**RU: So, tell us briefly about the restructuring of the DGESR.**

In our view, the previous structure which divided the research functions of the DGESR across two different departments, each containing several divisions, was excessively hierarchical and created unnecessary distance between staff involved in closely related tasks. The new structure eliminates the departments of Monetary and Financial Studies, and Economic Analysis and Forecasting, and reorganizes their staff into six divisions. Four of those divisions will have primary responsibility for the regular analytical tasks of the Banco de España:

- Conjunctural Analysis
- Structural Analysis
- Financial Analysis
- Monetary Policy and Euro Area

Two divisions will instead have a more methodological focus:

- Microeconomic Analysis
- Modelling and Macroeconomic Analysis

Those last two divisions will have a deeper research commitment than the other four, but all six divisions will have a mix of policy and research responsibilities. Together, these six divisions will all form part of the Associate Directorate General of Economics and Research (ADGER). By eliminating the intermediate dependence on department heads, we hope to foster collaboration between these six divisions, and to keep all their staff in close contact with Associate Director General Óscar Arce and myself.

Besides eliminating hierarchies to make the DGESR more horizontal, we have also created two new posts at the rank of Division Head to facilitate coordination and collaboration within the ADGER. There will be a Forecast Coordination Division which will supervise the production of our economic forecasts and our quarterly reports, drawing on the work of staff in all divisions of the ADGER. There will also be an Internal Research Committee Coordinator who will oversee our research output, administering the Working Papers and related series, and fostering cooperation across divisions to ensure that questions of current research interest are addressed, without excessive duplication.

With the same objective of achieving a more horizontal and integrated organization, we also plan to build research groups, which will each bring together staff from different divisions to focus on a particular research topic.

In summary, we are trying to achieve a more horizontal, less hierarchical structure that better links policy work with research work by increasing decentralization.

**RU: How do these changes affect the rest of the Directorate, outside of the ADGER itself?**

Given the restructuring, the Directorate General now consists of four distinct parts. The largest part is the ADGER, dedicated to research, headed by Óscar Arce.

Second, there is the Information Management Division, which handles our publications and our web pages. Third, there are units devoted to the Executive Coordinator for European Affairs, who will prepare for all our interactions with the ECB and the Eurosystem. In particular, they will support the Governor at the meetings of the Governing Council of the ECB. Fourth, there is the Statistics Department,

which I believe functions well in its current structure but is facing pressure from ever-increasing information demands. So in the future we will be taking a closer look at the statistics we produce, and at the resources that the Statistics Department requires. The same changes that have led us to reshape the ADGER are also multiplying the statistical requests we receive from other institutions, and motivating us to build up our statistics from a more granular, microeconomic level, which requires more infrastructure and improved data processing.

**RU: Now that you have realigned the Directorate, what do you see as our key research priorities in the near term?**

One priority of the restructuring is to concentrate our efforts and exploit synergies among our staff as we update our macroeconomic model suite, both on the side of short-run forecasting, and on the side of developing quantitative structural models for macroeconomic simulations. Likewise, we

should work on new models, with links to macro and micro data, for the evaluation of public policies. Another major area of concern is a better analysis of long-run trends in the Spanish economy, including the effects of the regulatory framework and the institutional environment on productivity and competitiveness, which requires us to bring together detailed knowledge of the Spanish economy with macroeconomic modeling expertise. We also need to strengthen our capacity for monitoring and analyzing macrofinancial trends and macroprudential policy. Finally, I would say it is also important to have the ability to carry out our own analysis of monetary policy and governance in Europe, and its implications for the Spanish economy, so that we can influence policy decisions at the European level.

**RESEARCH PAGE:**

[http://www.bde.es/investigador/en/menu/research\\_staff\\_a/Hernandez\\_de\\_Cos\\_Pablo.html](http://www.bde.es/investigador/en/menu/research_staff_a/Hernandez_de_Cos_Pablo.html)

## VISITING FELLOWS

### JESPER PEDERSEN

Advisor, Economic Research  
Danmarks Nationalbank

**JESPER PEDERSEN** is visiting the Modelling Unit of DG Economics, Statistics and Research, from January to June, 2016. He specialises in the building and estimation of DSGE models. Jesper obtained his Ph.D in Economics from the University of Copenhagen in 2008, and he holds an M.Sc in Economics and Finance from the University of York and an M.Sc in Economics from Copenhagen. He has published in the Journal of International Economics and in the Journal of International Money and Finance.

Jesper has also been external lecturer at the University of Copenhagen. He has previously worked at the Danish Economic Council, at private banks, and at the Ministry of Finance. Jesper is a permanent member of the ECB working group on econometric modelling.

### MIHÁLY TAMÁS BORSI

PhD, Univ. of Alicante

**MIHÁLY TAMÁS BORSI** is visiting the Banco de España from October 2015 until June 2016. He obtained his undergraduate degree from the Corvinus University of Budapest in 2009, and completed his PhD in Economics at Universidad de Alicante in 2015. During the course of his doctoral studies, he has held visiting positions at the Deutsche Bundesbank, the Magyar Nemzeti Bank (Central Bank of Hungary), and the Paris School of Economics.

Mihály's main research interests include economic policy, macro-financial linkages, and labor economics. His research at the Banco de España investigates the role of finance in explaining labor market dynamics.

In particular, he applies a local projections approach to assess the impact of changes in key financial variables, such as private credit and property prices, on labor market performance in a cross-country analysis. In another ongoing project, he uses a state-dependent model to study the macroeconomic effects of government spending across the credit cycle. He has also worked on the topic of European economic integration, by analyzing the evolution of per capita real income convergence in the European Union within a non-linear latent factor framework.

RESEARCH PAGE:

<http://www.sites.google.com/site/borsimihaly/>

## RESEARCH PRIORITIES

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*The Associate Directorate General for Economics and Research (ADGER) has identified three priority areas of analysis for 2016, as follows.*

### 1 SPANISH ECONOMY: RECOVERY, FINANCING AND MEDIUM-TERM GROWTH

The ongoing process of recovery and structural adjustment in the Spanish economy brings up a number of issues of concern: the influence of economic and political uncertainty on agents' decisions and on the macroeconomy; household deleveraging and its effects on consumption; firms' financial situation and its impact on hiring and investment; hysteresis in the labor market; business demographics; and the evolution of the external sector, with special attention to exports. There are also a number of priority issues related to Spanish financial markets: the functioning of public and private debt markets in Spain and in Europe; the relationship between interest rates and bank margins; alternatives to bank financing for business; and the development of models that would endogenize the probability of crises in banking or in other financial markets.

### 2 ECONOMIC POLICY

The second block includes a number of issues in monetary policy: the effects of public debt purchase programs on interest rates; the macroeconomic effects of unconventional monetary policy measures in general; and the determinants of inflation expectations. The nexus between monetary policy and financial stability, and monetary transmission in contexts with financially heterogeneous households and firms, are also questions of current relevance.

Regarding public finances, the key themes include public debt sustainability; pensions sustainability; the recent effects of fiscal rules in Spain; and fiscal policy in the Spanish Autonomous Communities. In terms of structural policies, priorities for study include the effectiveness of credit access reforms; reform of the bankruptcy law, including proposals for a "second chance" to promote entrepreneurship; the determinants of retirement and labor participation; inflation consequences of competition in products markets; and the determinants of productive specialization in the Spanish economy. Finally, regarding EU governance, topics of interest include possibilities for Fiscal Union, or for coordination of fiscal policies, or for delegation of fiscal instruments in the European context.

### 3 METHODOLOGY

The third block includes various projects involving individual heterogeneity in macroeconomic models, with attention to inequality of income, wealth, debt and consumption capacity; the response of indebted households to job loss; and assessing the financial knowledge of the Spanish population. It also includes projects intended to deepen and extend the suite of survey tools and macroeconomic models in regular use in the ADGER: updating the Spanish Survey of Household Finances (EFF) and the Quarterly Model of the Banco de España (MTBE), including its credit equations block; developing a long-term alternative to the Banco de España's general equilibrium macroeconomic model BEMOD; and developing a long-run overlapping-generations growth model to analyze demographic changes and their interactions with productivity growth.



# ANNOUNCEMENTS

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## UPCOMING CONFERENCES

[LINK TO CONFERENCES PAGE](#)

### 4TH WORLD BANK – BANCO DE ESPAÑA RESEARCH CONFERENCE: LABOR MARKETS: GROWTH, PRODUCTIVITY AND INEQUALITY

MADRID, 16-17 JUNE 2016

This conference, sponsored by the Banco de España and the World Bank, will take place at the Banco de España headquarters in Madrid, on June 16 and 17, 2016. The goal of the conference is to bring together academics and policy makers to discuss labor market dynamics and their relation with growth.

### JOINT BANCO DE ESPAÑA / BARCELONA GSE POLICY WEEK: FISCAL SUSTAINABILITY: XXI CENTURY

MADRID, 6-8 JUNE 2016; BARCELONA, 9-10 JUNE 2016

In June, the Banco de España and the Barcelona Graduate School of Economics are jointly organizing a pair of conferences under the title “Fiscal Sustainability: XXI Century”. After several decades in which macroeconomists largely ignored default risk in advanced economies, fiscal sustainability has suddenly returned to the forefront of policy concern in the aftermath of recent global financial crises. Ensuring fiscal sustainability is especially important in the context of European institutional reform. The Joint Policy Week will bring together researchers from academics and from policy institutions to address topics including the measurement of fiscal sustainability, fiscal rules and other mechanisms for enforcing long-run budget balance, and the interaction of monetary, fiscal, and financial stability policies in macroeconomic models, with special attention to Europe. The first event, at the Banco de España in Madrid, will focus especially on applied policy questions, and will feature keynote lectures by Athanasios Orphanides (MIT) and Enrique Mendoza (Univ. of Pennsylvania), as well as a policy panel. The second event, which forms part of the [Barcelona GSE Summer Forum](#), will focus on the latest academic work on monetary and fiscal policy interactions.

## CALLS FOR PAPERS

### CALL FOR PAPERS: II JORNADA DE HISTORIA ECONÓMICA

MADRID, 6 OCTOBER, 2016

DEADLINE: 30 MAY, 2016

On October 6, 2016, the Banco de España will host its second “Jornada de Historia Económica”. The workshop will feature studies in economic history, including those carried out by current holders of economic history research grants from the Banco de España, as well as contributions from other authors. Researchers wishing to present at the conference should send a paper or an extended abstract to [conferencias@bde.es](mailto:conferencias@bde.es) prior to May 30, 2016.

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