SEFO

SPANISH AND INTERNATIONAL
ECONOMIC & FINANCIAL OUTLOOK

VOLUME 7 | number 3, May 2018

Spain in the digital era

funcas

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SEFO is a bi-monthly Economic Journal published by Funcas and written by its experts, on the most pressing issues facing the Spanish and international economy / financial system today.

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Printed in Spain

Editorial and Production
Funcas
Caballero de Gracia, 28. 28013 Madrid (Spain)

ISSN print edition 2254-3899
ISSN electronic edition 2254-3880
Depósito Legal: M-10678-2012
Prints: Cecabank.

SEFO

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Letter from the Editors

The advent of new technologies, such as blockchain, has created a set of potential opportunities, still not fully tapped, in financial markets. At the same time, technological innovation in financial services (FinTech) has led to the emergence of numerous initiatives that, on a small scale, offer flexible online solutions, personalized and immediate service, and cost reductions. FinTech players already occupy a relevant space in the financial digitization process. However, the speed of financial innovation far exceeds the regulatory response, which poses the challenge of making innovative solutions compatible with the existence of adequate safeguards and guarantees.

In this context, the May issue of *SEFO, Spanish and International Economic & Financial Outlook,* focuses on recent developments in the digitalization of financial markets and their potential implications for Spain. First, we assess the evolution and dimensions of the crypto assets economy. Next, we explore a relatively novel concept that allows for controlled development of financial innovation – the regulatory 'sandbox'.

The crypto assets market has clearly been one of the fastest growing in the world in recent years, particularly since 2016. In total, these assets command an aggregate market value of 418.78 billion dollars – below only that of the leading tech giants on the Dow Jones. The rapid evolution of the crypto asset phenomenon, and their growing scale, naturally raises many questions about whether these new digital currencies and alternate payment systems, which lack the official backing of central banks, can become an alternative to mainstream currencies, considering also the high volatility of these assets. While the lack of regulation and the speculative investment component of crypto assets gives rise to significant risks, there are also a breadth of opportunities to exploit the technological advantages that have arisen. One such possible opportunity lies in central bank digital currencies (CBDCs), which could facilitate improvements in current payment systems. Initial data suggest that Spain is not significantly positioned in the crypto asset market in quantitative terms, but is playing a prominent role in generating projects that are attracting considerable investment in the ICO market.

While FinTech presents a potential wealth of opportunities, these do not come without risks. Yet, the necessary regulation of financial innovation may put a brake on the innovation process itself. One possible solution to this dilemma is the creation of a regulatory sandbox. The sandbox is already widely used in the FinTech and digital banking arenas for its many advantages, including the ability to promote competition by allowing companies to test innovative products, services and business models in a real or live market environment, while ensuring the existence of appropriate safeguards. The UK has successfully pioneered the sandbox concept

back in 2015, but currently regulatory sandboxes are also already operating with promising results in Singapore, Abu Dhabi and Switzerland. Spanish authorities have recently announced their intentions to launch a national sandbox, which would provide an important stimulus to financial innovation within a regulated testing framework.

Also in relation to the financial sector, the improvement in banks' metrics (most notably their NPL ratios), which was facilitated by the creation of the Banking Union, was accompanied by a considerable rebound in their market valuations. While improvement has been uneven across geographies, better performance in Spain is being rewarded by higher valuations relative to European peers. In this SEFO, we analyse the factors having the biggest impact on market valuations within the US, Europe, and Spain – profitability, asset quality, and efficiency. The results show that profitability, as measured by ROE, proves to be the most significant, especially when taking into consideration future market expectations for this indicator. However, the importance of the other two variables should not be overlooked, given the fact that lower NPL ratios and improved efficiency ratios are very strongly correlated to profitability.

On a related note, the new non-performing exposures (NPE) coverage requirements arising from European regulators' proposals, together with the entry into force this year of IFRS 9 accounting standards, are expected to put additional pressures on banks' income statements due to the still high existing amount of NPEs on banks' balance sheets. In this context, banks are given a clear-cut incentive to reduce their exposure to such assets. The Bank of Spain's recent modifications to NPE classification will help reduce the impact of IFRS 9 on Spanish banks. At the same time, Spanish banks, in line with some of their other European counterparts, have already reduced their NPEs by 46% since December 2013. Taking into consideration Spanish banks' strategic plans for further reducing NPEs and the portfolios already on sale, the market will once again be very active in 2018. However, concerns regarding the impact of the influx of properties as a result of large transactions closed last year could weigh on potential buyers' expected returns.

We then take a look at the fiscal situation in Spain, first by exploring progress on fiscal consolidation, as well as providing an assessment of Spain's independent fiscal authority the AIReF.

A favourable economic context has helped Spain meet EU fiscal objectives for 2017. This has been the case even in the face of political tensions at home stalling the budgetary process and any meaningful momentum on fiscal reform. On the basis of execution data for the first quarter of 2018, budgetary projections and possible amendments to further increase spending, compliance with fiscal targets for 2018 is far from guaranteed. Over the medium term, the latest Stability Programme envisions convergence to a balanced budget by 2021, but with little adjustment to reduce the structural deficit. Such a scenario raises concerns over the evolution and ultimate sustainability of Spain's public debt, having increased significantly during the crisis to reach close to 100% of GDP. Under the baseline scenario, public debt to GDP would converge to just below 80% over the upcoming ten-year period, rising to a further 85%, or more, should the economy experience a growth or interest rate shock.

More broadly, in an effort to make progress on EU fiscal consolidation, the need for member states to have independent fiscal institutions (IFIs) is gaining acceptance. Spain's IFI, the AIReF, was created in 2013 with the mandate of guaranteeing government compliance with the principle of budget stability. The results of a review of its first years of operation, in line with the OECD's recent findings, show that the institution has consolidated its independence and credibility. The AIReF has helped to support progress on budget stability and, by increasing the reputational costs of non-compliance, enhanced fiscal governance within Spain and the EU. Nevertheless, the AIReF still faces noteworthy challenges apart from preserving

its independence, including accessing necessary information, improving the methodology of its projections, and increasing the impact of its recommendations.

Next, we explore some of the tensions in globalization and their potential implications for Spain. Although Spain has not engaged in recent protectionist rhetoric, it is relevant to analyse its role in global production chains and the potential channels for economic contagion. Spain's integration in cross-border production is concentrated in the sectors of greatest importance for manufacturing exports, namely the automotive, agro-food, textile, machinery and chemicals industries. The impact of the mainstreaming of protectionist measures would come, mainly, via those sectors and could be meaningful in light of their importance in terms of job creation and investment.

Finally, we close this *SEFO* by trying to determine the factors behind Spain's gender pay gap. In Spain, despite recent progress on gender equality, women continue to take more responsibility for childcare than men. This, together with other factors, limits many women's ability to enjoy the same pay conditions as men, particularly in the Spanish labour market – still dominated by inflexible working hours and long work days. As a result, Spain continues to demonstrate a sizeable gender pay gap – albeit similar in magnitude to neighbouring countries – with women's salaries ranging between 19% and 30% less than their male counterparts. Recent legislation represents an ambitious attempt to regulate work hour flexibility for family reasons, granting both male and female employees under this contract a high degree of flexibility and protection. In practice, however, the law has failed to reduce the gender gap, as well as created a rift between women protected by this contract and those who are not. Further narrowing the gap will entail: i) getting men more involved in caring for their children; and, reducing the cost of offering working hour flexibility.

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What´s Ahead (Next Two Months)

Month	Day	Indicator / Event
June	4	Social Security registrants and official unemployment (May)
	6	Industrial production index (April)
	13	CPI (May)
	14	ECB monetary policy meeting
	21	Eurogroup meeting
	21	Foreign trade report (April)
	25	Balance of payments quarterly (1st quarter 2018)
	28	Non-financial accounts, State (May)
	28	Non-financial accounts, Regional Governments and Social Security (April)
	28	Retail trade (May)
	28	Preliminary CPI (June)
	28-29	European Council meeting
	29	Balance of payments monthly (April)
	29	Quarterly Non-financial Sector Accounts (1st quarter 2018)
July	3	Social Security registrants and official unemployment (June)
	5	Industrial production index (May)
	13	CPI (June)
	16	Quarterly Financial Accounts (1st quarter 2018)
	20	Foreign trade report (May)
	26	ECB monetary policy meeting
	26	Labour Force Survey (2nd quarter 2018)
	27	Retail trade (June)
	30	Preliminary CPI (July)
	31	Non-financial accounts, State (June)
	31	Non-financial accounts, Regional Governments and Social Security (May)
	31	Preliminary Quarterly National Accounts (2nd quarter 2018)
	31	Balance of payments monthly (May)

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What Matters

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The crypto assets economy: Reality, myth and opportunity*

The recent and rapid growth of the global crypto assets market has allowed it to attain substantial relative size – below only that of the leading tech giants. Having achieved such a dimension, crypto assets have logically attracted significant attention from regulators, who simultaneously seek to manage emergent risks, while exploring possibilities for these digital cash alternatives to support improvements in current payments systems.

Santiago Carbó Valverde and Francisco Rodríguez Fernández

Abstract: The global market for crypto assets has boomed in recent years. There are 1,587 companies who participate in the crypto assets market. 888 correspond to crypto currencies and 699 to tokens. In total, they command an aggregate market value, or 'market capitalisation' of 418.78 billion dollars. By year-end 2017, a total of 2.38 billion dollars had been issued via 136 ICOs worldwide. However, these assets are traded on platforms whose market organisation and valuation systems warrant special consideration. This relative size and growth of the crypto asset market has sparked a debate over the extent to which these assets constitute a speculative bubble versus a genuine opportunity for an alternative payment and exchange system in multiple sectors. While there is evidence of a significant speculative component, there are also a breadth of opportunities to

exploit the technological advantages that have arisen as a result of this phenomenon. One such possible opportunity lies in central bank digital currencies (CBDCs), which could facilitate improvements in current payment system costs and reduce tax fraud. For the case of Spain, data suggest that the country is not significantly positioned in this market in quantitative terms. Analysing the main exchange, that of Bitcoin, 24.32% of its traffic takes place in the US, 19.25% in Germany, 7.03% in China and 6.45% in France. Spain ranks in the 20th spot with 0.68% of total traffic. But Spain is nonetheless playing a prominent role in generating projects that are attracting considerable investment in the market for initial coin offerings (ICOs), having already developed 24 ICO projects to date.

The crypto asset universe: Growth opportunity... but not without risk

Crypto assets are a sign of the times we are living in insofar as they combine technological innovation, opportunity and uncertainty. Broadly defined, these assets comprise the universe of crypto currencies and other kinds of goods and services that use cryptography and blockchain technology to function. From this definition, a plethora of connotations has proliferated that are not always sufficiently exclusive. For example, these assets exclude the currencies, applications and services that are simply virtual or digital but lack encryption as their system of generation and protection.

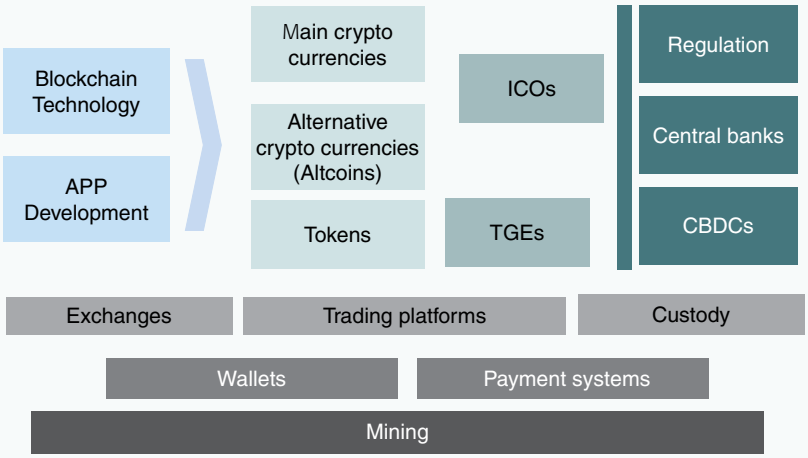
At any rate, it is necessarily an unfinished classification given the multiple branches opening up within the realm of the crypto universe. A new language is even emerging. As with so many other dimensions of the digitalisation phenomenon, the ideas contain a very high potential value that does not always tally with the real value of their practical manifestations.

The purpose of this paper is to outline the economic fundamentals and recent development of crypto assets. Pinning down and understanding the taxonomy of this phenomenon is a challenge as it is an environment in a state of heightened flux. However, Exhibit 1 represents a reasonable attempt at a basic, yet illustrative, classification of the universe of crypto assets and at structuring their main foundations and development mechanisms.

Crypto assets bring together two worlds experiencing growth and offering still-untapped possibilities to generate financial and non-financial assets and services protected by cryptography that have already commanded a considerable presence in the market: blockchain technology and apps development. Blockchain is the most popular form of distributed ledger technology. It consists of keeping permanent track of transactional data that cannot be manipulated. The blockchains formed constitute a decentralised database that is administered by computers that belong to a peer-to-peer (P2P) network. On this network, each device keeps a copy of the system ledger to prevent any points of failure. All copies are updated and authenticated simultaneously in the network. Software applications make use of the ledger's incorruptibility to create shared value systems. In their most common form, there are two main classes of crypto assets: crypto currencies and tokens. The cryptocurrency refers to the cryptographic representation of a currency or coin for exchange. It is used for the purpose of making or receiving payments on the blockchain. The

“ Crypto assets bring together two worlds that are experiencing growth and offering still-untapped possibilities to generate financial and non-financial assets and services protected by cryptography that have already commanded a considerable presence in the market: blockchain technology and apps development. ”

Exhibit 1 **Crypto assets market: Technology, tools and players**



Source: Authors' own elaboration.

token is a particular fungible and tradable asset/chip or a utility that is often found on an existing distributed ledger technology (DLT) network. To define them simply, tokens are virtual units or chips that are exchanged over existing networks (mainly via blockchain). They are used to exchange goods and services of all kinds. A token may grant a right, be used to pay for a service, transfer data, join a club, attend a sporting event or indeed for any other item for distribution for which value needs to be assigned.

The notoriety of crypto currencies such as Bitcoin has made this currency manifestation the most widely known of the crypto assets to date. In parallel to Bitcoin and other currencies with a certain level of cache, such as Ethereum and Ripple, hundreds more alternative currencies have been developed that are generically known as 'altcoins'. Nevertheless, it is conceivable that the token has become the major gateway for the potential for app development in this market. It is also the dimension where it is equally likely to find the most creative contributions for which the likelihood of true value or genuine development potential is most dubious.

At the bottom of Exhibit 1 is the architecture that is common to these assets and their development. The exchanges are markets of varying depth that function by means of algorithms that match buy and sell orders. They are in turn supported by brokers and trading/marketing platforms that offer interconnection between participants; the blockchain system permits transaction clearing and settlement at a speed that can vary but is sufficient to allow for the formation of prices that are observable by the participants. As in standard financial markets, the funds invested in crypto assets are subject to a custody regime in the main exchanges. This regime means that value can be accumulated with sufficient guarantees. Value is stored in wallets, systems or software applications designed to store crypto assets. There are custody wallets – in which the custodian holds the key for each crypto asset – and private wallets – in which the asset holder's private key, essentially an access password, is stored.

There are three main kinds of exchanges for crypto-assets in the marketplace. The first are the centralised exchanges, in which a wallet with ledger software acts as a single clearing house for transactions on that exchange. The second exchange model is that of the 'integrated third party' in which several wallets interact with a central ledger of record that functions as a common exchange for all.

> “Crypto assets as payment instruments either focus on enhancing the efficiency of a standard currency, or are convertible into standard currencies but with the goal for them to develop as standalone currencies to be used for payment by themselves.”

The third model is that which fosters the direct exchange of crypto assets among their holders, the P2P or decentralised exchanges or marketplaces.

The crypto assets and the exchanges are of fundamental use as payment systems. There are two main models of crypto assets as payment instruments. The first are the crypto currencies focused on enhancing the efficiency of a standard currency. These are encryption systems that attempt to render the payments between individuals or the clearance of payments in standard currencies in a given country more efficient. The second are the payment systems centred on the crypto currencies themselves. Here, the crypto currencies are also convertible into standard currencies but the goal is for them to develop as standalone currencies and to be used for their own payments without the need for conversion.

Crypto assets are developed by means of mining, which consists of the fundamental programming operations needed to generate, authenticate and distribute these assets over a blockchain network. As with any other network, they function via nodes and their generation and recording implies numerous hours of computing to combine the various blocks and the components or ‘hashes’ of each block. This requires hardware and programmers who may work individually in exchange for a fee or interest in the assets (self-mining) or as part of a cooperative structure devised to make the network deeper and faster (mining pool). In the latter instance, the profits are divided among the pool members. These are matters of not only great economic but also technical importance insofar as one of the issues the crypto assets can face are capacity restrictions that slow down their transactions or imply (in the case of Bitcoin, for example) a maximum number of units of the crypto asset.

The universe of crypto assets depicted in Exhibit 1 prompts two considerations:

- The first relates to the extent to which the creators of the crypto currencies and tokens find financing. And the scale involved. If in the world of finance as we know it firms raise capital by offering or selling shares, in the digital world this takes place by means of initial coin offerings (ICOs) or token-generating events (TGEs). As we will show later on in this paper, a significant volume of funds has been raised in this manner in a relatively short period of time.

- The second consideration has to do with the extent to which crypto currencies or tokens are conceived of and used as a payment instrument versus a speculative investment. This is a crucial debate and it is an enthralling one. If the definition is confined to that of a means of payment or exchange, the key is to determine whether an instrument that generally lacks the official backing of a central bank can become an alternative to the mainstream currencies. Can crypto assets create the stability, backing and counterparty guarantees that a central bank attempts to provide? By way of example, academic debates are ongoing about the extent to which the crypto currencies could interfere with monetary policy targets, such as control over inflation, or replace the central banks by generating seigniorage (the income obtained by being the official issuer of a currency). This question has become murkier in light of the fact that in the midst of this technical-philosophical debate, the draw of certain crypto assets – mainly crypto currencies – has turned them into speculative investments subject

> "The speculative nature of the crypto assets market, which often leads to increased volatility and difficulty in valuations, is further complicating the debate as to whether crypto currencies (without an official backer) are a viable alternative for payments to mainstream currencies."

to considerable volatility and, on occasion, hard to value in the marketplace.

As often happens, private enterprise and innovation have run ahead of the official alternatives and regulations. However, the role of central banks is shaping up to be pivotal in the near future for several reasons. One of the most powerful is the fact that a substantial portion of the flows of crypto-currencies entering the market is being hacked or stolen. It is not that the underlying technology is being compromised but more a matter of identity theft or plain fraud. Ernst & Young estimates that by mid-2017, some 11% of the funds that had been issued by way of ICOs (equivalent to approximately 400 million dollars) had been hacked or robbed. [1] There have also been cases of theft of some of the most popular crypto currencies, such as Bitcoin. These thefts are not the result of technological vulnerabilities attributable to the blockchain but rather the theft of keys from a certain wallet or exchange platform. It is also important to consider the risk intrinsic to the ultimate use of certain crypto currencies for illicit and fraudulent activities, the flip side of the liberty and anonymity (partial) forming part of the powerful philosophy underpinning the crypto assets.

Elsewhere, another open-ended question is to what extent the crypto assets can advance privately in an economy whose financial safety net depends on central banks as the basis for the circulation of fiat currencies not to mention their role in underpinning the safety of certain savings and investments.

What neither the supervisors nor the central banks can or seem to want to deny is the significance of blockchain technology for payment systems and the possibilities it opens up. Against this backdrop, some public initiatives and public-private partnerships are cropping up in the area of central bank digital currency (CBDC) development, an instrument also depicted on Exhibit 1. The idea behind a CBDC is to combine payment security with authentication speed and lack of third-party intermediation offered by blockchain technology. The central bank would simply constitute the backer, the technology system and the overseer of a virtual currency that could replace cash, which would increase payment system efficiency while reducing the fraud and other collateral costs associated with payments using notes and coins.

This does not mean that regulators are unilaterally against crypto assets. To date, their position has been to urge extreme caution because they believe there are two aspects of how they work that are not suitable for retail investors. One is, precisely, the lack of control and regulations which means that when one of these initiatives is identified as a fraud it may be too late to warn users. The other is that the supervisors believe that the investment dimension of these assets (as opposed to their use as a payment mechanism) is not suited to retail investors on account of their high volatility and the difficulties in determining their market value.

On February 8th, 2018, the European Securities Markets Authority (ESMA), the European Banking Authority (EBA) and the European Insurance and Occupational Pensions Authority (EIOPA) issued a joint statement [2] warning consumers of the high risks of buying and/or holding so-called virtual currencies (VCs). These authorities stated that the "VCs currently available are a digital representation of value that is neither issued nor

guaranteed by a central bank or public authority and do not have the legal status of currency or money. They are highly risky, generally not backed by any tangible assets and unregulated under EU law, and do not, therefore, offer any legal protection to consumers. The three ESAs are concerned by the fact that an increasing number of consumers buy VCs particularly with the expectation that the value of VCs will continue to grow but without being aware of the high risk of losing their money invested."

In Spain, similarly on February 8th, the securities market regulator, the CNMV, and the Bank of Spain issued a joint statement [3] along similar lines, noting that "these cryptocurrencies are not backed by a central bank or any other public authority, and while they are occasionally presented as an alternative to legal tender, their characteristics differ greatly from the latter:

- Their acceptance as a means of payment for a debt or other obligations is not mandatory.
- Their circulation is very limited.
- Their value fluctuates widely, meaning that they cannot be considered a sound store of value or a stable unit of account."

The Spanish supervisory bodies also warn in the same joint statement of the problems of "liquidity and extreme volatility" posed by these currencies as investments.

Global data and the situation in Spain

The crypto market has clearly been one of the fastest growing in the world in recent years, particularly since 2016. Table 1 provides certain structural indicators. Although comings and goings are frequent, as of April 30th, 2018, there were 1,587 companies in this market – 888 correspond to crypto-currencies and 699 to tokens – and www.coinmarketcap.com attributes these firms a market value of 418.78 billion dollars (356.27 billion dollars accounted for by crypto currencies and 62.51 billion by tokens). Note that the very use of the term 'market cap' in respect of these assets highlights their de-facto classification as investments rather than payment mechanisms.

The market structure also provides insight into how it has developed. Looking at the crypto-currencies, the market share commanded by Bitcoin, the leading company (concentration ratio or CR1) is 44%; that of the three largest virtual currencies (CR3) is 62% and that of the top five (CR5) is 79%. The market shares are somewhat lower in the tokens segment, albeit still significant, as the top five tokens account for 40% of the segment's market cap.

Table 1 **Global structure of the crypto asset market**

Data as of April 30th, 2018

	Crypto-currencies	*Tokens*	*Total*
Number of companies	888	699	1,587
Market cap ($ m)	356,271	62,508	418,779
CR1	44	24	37
CR3	62	32	61
CR5	79	40	70
HHI (scale: 10,000)	2,440	725	1,780

Source: www.coinmarketcap.com and authors' own elaboration.

Concentration in the market as a whole – considering all participants – can be measured using the Hirschman-Herfindahl Index (HHI). The HHI is the sum of the squares of the market shares of all market participants. It can range between "1/number of participants" and 1. In practical terms, it is usually expressed on a scale of between 0 and 10,000. In the case of the market for crypto assets, the HHI is 1,780, and is substantially higher in the crypto currencies segment (2,440) than in tokens (725).

As shown in Table 2 (Panel A), among the main crypto currencies there are two particularly prominent exponents: Bitcoin and Ethereum. Ripple and Bitcoin Cash are also playing a significant and increasingly prominent role. The line that divides the main from the alternative (altcoin) currencies is hard to pin down and depends on the relative success of each initiative in snatching market share away from the rest. At this juncture, it is pertinent to point out certain aspects of how the crypto currency market is organised given that it uses the platform formula – software underpinned by an exchangeable unit of value. As in other current multi-sided platforms, there is a price that can be assigned to the value of one of the sides (in this case that of the software and idea) and another that depends on the success of the crypto currency among users. This price structure similarly applies to tokens. For the different sides of the platform to see their value increase, it is necessary to leverage the network effect. Specifically, growth in the acceptance and use of a crypto currency so that it can achieve scale and dilute costs. However, the crypto currency platforms present a unique quality: the software is generally open source (as was the case with Bitcoin which is the origin of nearly all the other crypto currencies); herein lies part of its success because the programmers can propose improvements and make it work more efficiently. However, open-source software gives rise to two types of forking: 'soft forks', meaning the upgrade of existing software without altering its compatibility; and 'hard forks', which have the effect of rendering the prior software platform obsolete or incompatible. As a result, innovation and competition can end up compromising scalability and convertibility among crypto currencies.

In Table 2 (Panel B), albeit a rough financial approximation, the aggregate value of the market for crypto assets (defined broadly as the dollar equivalent of all of these assets) would rank it as the third-largest company on the Dow Jones at 418.78 billion dollars, behind only Apple (889.1 billion dollars) and Microsoft (753.19 billion). The importance of these figures, despite the fact that we are comparing the market value of shares with the value of currencies, is that they paint a picture of the relative importance attained by crypto assets; indeed, they are probably the most relevant financial phenomenon of recent years.

Elsewhere, given that the data is exchanged via software, the geographic distribution of the transactions depends on the number of nodes. From an analytical perspective, this enables identification of where traffic is heaviest and, by extension, the pinpointing of the importance of each country or region in this market. This is all the more relevant considering that many of the crypto asset initiatives may be developed by programmers of a given nationality but have the financial backing of another territory and be developed technology-wise in yet another. The Funderbeam trading platform maps the location of these nodes in the most important market, that of Bitcoin (Exhibit 2). As of April

" Albeit a rough approximation, the aggregate value of the crypto assets market would rank it as the third-largest company on the Dow Jones at 418.78 billion dollars, behind only Apple (889.1 billion dollars) and Microsoft (753.19 billion). "

Table 2

Key players in the crypto assets market and relative size

Panel A: Key players in the crypo assets market and relative size		
April 30th, 2018		
Crypto assets market		
#	Name	Market cap ($ m)
1	Bitcoin	156,655
2	Ethereum	66,656
3	Ripple	32,699
4	Bitcoin Cash	23,550
5	EOS	15,060
6	Litecoin	8,408
7	Cardano	8,063
8	Stellar	7,700
9	IOTA	5,661
10	TRON	5,244
Panel B: Size relative to the stock market (Dow Jones) *Note: If we were to layer in other stock exchanges such as the Nasdaq, where firms such as Google and Amazon are listed, these technology firms would also make it into this top 10, ranking above the crypto assets.*		
#	Name	Market cap ($ m)
1	Apple	889,096
2	Microsoft	753,190
3	Overall Crypto Market	418,779
4	JP Morgan Chase	372,485
5	Johnson & Johnson	344,102
6	Exxon Mobil	329,502
7	Wal-Mart	257,722
8	Intel	248,991
9	Chevron Texaco	241,966
10	UnitedHealth	230,831

Sources: www.coinmarketcap.com, Bloomberg and authors' own elaboration.

30th, 2018, 24.32% of the nodes were located in the US, 19.25% in Germany, 7.03% in China and 6.45% in France. The UK, known as the originator of companies that trade in Bitcoins, accounts for just 3.69% of its nodes. Spain ranks 20th with 0.68% of total nodes.

Exhibit 2

Distribution of the Bitcoin network. Node concentration

April 30th, 2018

Ranking	Country	Nodes	Ranking	Country	Nodes
1	United States	2,542 (24.32%)	7	United Kingdom	386 (3.69%)
2	Germany	2,012 (19.25%)	8	Russia	356 (3.41%)
3	China	735 (7.03%)	9	N/A	318 (3.04%)
4	France	674 (6.45%)	10	Japan	233 (2.23%)
5	Netherlands	488 (4.67%)	...		
6	Canada	392 (3.75%)	20	Spain	72 (0.68%)

Source: Funderbeam and authors' own elaboration.

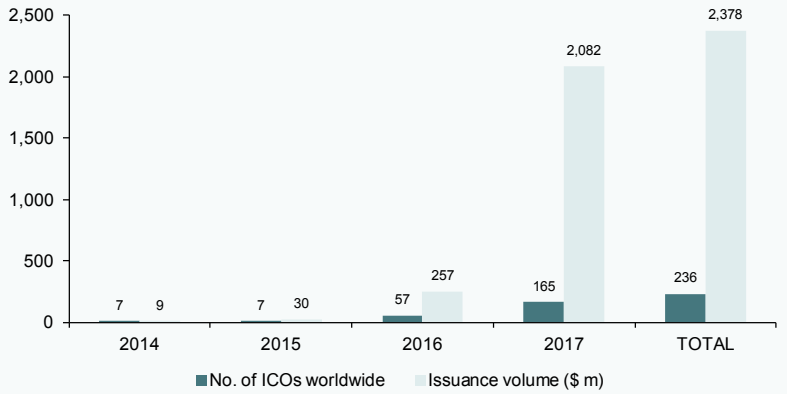
Pinpointing Spain's ranking in this market is nevertheless complicated by the fact that some Spanish initiatives are being developed from London, Singapore and Gibraltar. The first crypto currency in Spain was SpainCoin in 2014; however, the most developed to date is PesetaCoin (PTC), which, as of the end of April, had a market cap of 6.4 million euros. A new Spanish initiative based in London called Bilur was set up last year. There is also a burgeoning generation of tokens, which, as we will see later on, are cropping up in a number of sectors: from betting platforms secured by blockchain systems to payment systems for restaurant chains.

When investment in crypto assets reaches the point of institutionalisation, many firms opt to fund their projects by raising capital via public offerings. Against this backdrop, the market in initial coin offerings (ICOs) and initial-token events (ITGs) has experienced very considerable growth in recent years. Note that it is commonplace for both routes to be indistinctly labelled ICOs, as is reflected in the main statistics. For example, the numbers provided by Coindesk (Exhibit 3) show that by the end of 2017, ICO issuance had reached 2.38 billion dollars, most of which was issued in 2017 (2.08 billion dollars). The total number of ICOs was 236, 165 of which took place in 2017.

As indicated in Table 3, Spain is an active market for ICOs and is currently home to 24 projects, five of which are live (as of February 2018 according to Finnovating) with four already trading on some form of trading platform. The aggregate market cap of the ICOs in Spain is 145 million dollars. As for the breakdown by sector, as many as 15 different sectors can be identified for this type of investment, the most popular being the financial sector (Fintech; 6 projects), real

Exhibit 3

No. of ICOs and issuance volumes



Source: Coindesk and authors' own elaboration.

Table 3

The Spanish ICO market

As of February 2018

No. of projects	24
Live deals	5
Currently traded	4
Market cap ($ m)	145
No. of ICOs by sector	
Fintech	6
Proptech	2
Communication and social media	2
Energy and environment	2
Employment and education	2
Infrastructure	1
Events and entertainment	1
Art	1
Travel and leisure	1
Healthtech	1
Social responsibility	1
Governance	1
Marketing and advertising	1
Video gaming	1
Sports	1

Source: ICOinversiones-Finnovating and authors' own elaboration.

estate (Proptech; 2), communication and the social media (2), energy and the environment (2) and employment and education (2).

Crypto assets as an investment: Prices, volatility and valuation issues

Crypto currencies have to date enjoyed the greatest popularity among the crypto assets and their valuations have oscillated significantly in short periods of time. This volatility has drawn attention to three technical aspects: i) the possible existence of speculative bubbles; ii) the intrinsic long-term value of these currencies; and, iii) how to measure that value. As demonstrated by the case of bitcoin.

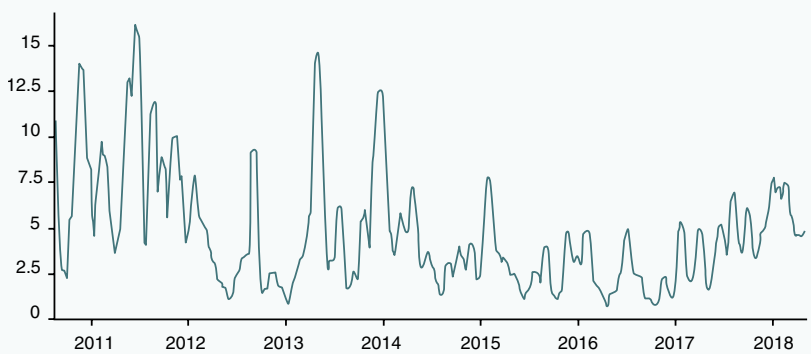
The main crypto currencies, particularly Bitcoin, have been characterised by volatility. Exhibit 4 depicts the volatility sustained by Bitcoin measured as the standard deviation in its daily returns relative to the dollar. In this sense, if Bitcoin is to be considered an alternative currency to the fiat money backed by central banks, it could be deemed comparable to gold, offering protection against inflationary movements and changes in the money supply. This theoretical approach has prompted some to label the crypto currencies 'digital gold'. However, gold presents daily volatility of around 1%, whereas that of Bitcoin depicted in Exhibit 4 is several times higher.

As for the existence of speculative bubbles, Shiller (2014) suggests that such bubbles are shaped by fashions, sociological epidemics and biased or flawed reporting in the media. A first indication suggesting that Bitcoin is being used to speculate lies with the fact that 70% of this currency is not apparently being used but is instead being kept in 'dormant' accounts as an investment (Weber, 2015). The ups and downs in the value of this and other crypto currencies in the wake of warnings from the supervisors or the odd episode of fraud or theft have also raised red flags regarding their intrinsic value.

Although the speculative component would appear undeniable, it is far more complicated to establish the intrinsic value of these assets including all of their tangible and intangible components. If we use the standard methodology for valuing a currency or financial asset, the results commonly suggest that the market prices of the crypto currencies are driven excessively by their trading volumes and that they are considerably overvalued. Some even argue that the intrinsic value of currencies such as Bitcoin is zero [4] and

Exhibit 4 **Crypto asset volatility**

Volatility of Bitcoin relative to the dollar. Standard deviation in daily returns



Source: www.buybitcoinworldwide.com

“ Where the bulk of the value of crypto-currencies most probably lies is in the associated technology (the blockchain) and the scope for making payments in the absence of third-party authentication, relying instead on the secure authentication offered by the blockchain itself. ”

suggest that the price can certainly go to zero if trust vanishes. [5]

The purpose of this paper is not to determine that value but rather to describe their economic fundamentals and contrast the various approaches to valuing them. Despite the pessimism regarding their intrinsic value touched upon above, it is nevertheless advisable to consider the possibility that these assets embody significant value for several reasons. The first is that many of the analysts who have augured a short life for assets such as Bitcoin have already seen them outlive their own expectations and, albeit with ups and downs, their valuations have continued to rise. More importantly, however, is the consideration that although part of their value may be being fuelled by an irrational bubble, another significant part may not be being properly measured. Recent studies suggest that standard financial analysis is not appropriate for measuring currencies such as Bitcoin. The reason is that the value of these encrypted currencies depends on aspects, such as the level of competition between the various networks, the speed with which each unit is produced and the complexity of the algorithms used for mining purposes. In short, the costs of production and network effects. These methods highlight the importance of production costs and the advantage conferred by blockchain technology in determining the fair value of crypto currencies (refer, for example Hayes, 2017).

The role of the central banks and CBDCs: Backing, clearance, seigniorage and efficiency

Ultimately, it is hard to refute the value of using distributed ledger technology, such as blockchain to accelerate the virtualisation of money. The question is to what extent this challenge can be taken up by central banks and to what measure the privately-developed crypto currencies could be displaced by central bank digital currencies (CBDCs).

The origin of this dichotomy between crypto currencies and CBDCs lies with the use of the digital currencies as an alternative to fiat money. Specifically, to the extent that the crypto currencies may present a degree of inelasticity with respect to the money supply and, thus, not be so dependent on inflation, as is the case of gold. However, their volatility suggests that price stability is not the advantage conferred by crypto-currencies. Where the bulk of the value most probably lies is in the associated technology (the blockchain) and the scope for making payments in the absence of third-party authentication, relying instead on the secure authentication offered by the blockchain itself.

The idea underpinning a CBDC is to use blockchain technology to generate a digital version of cash that can be readily exchanged peer-to-peer (P2P) at a constant face value. It is important to distinguish this initiative from others which, with the blessing of the monetary authorities, have been launched by private banks as wallets to foster the substitution of cash with electronic payment mechanisms, such as the J Coin in Japan. These are unofficial alternatives that do not imply convergence towards a common official digital system.

The potential benefits of CBDCs may be significant to the extent they facilitate progress towards a cashless society, substantially lowering the cost of payment and exchange

systems and reducing fraud in parallel. However, they also pose major challenges, such as changes in the money supply and articulation of central bank policy; another issue is the right pace at which to replace physical funds with digital money so as not to disrupt the system.

Final considerations: The future for crypto assets

It is not easy to predict the fate of the crypto assets. So far, the figures are incredibly eye-catching: the crypto currencies are already moving virtual money equivalent to close to half a billion dollars. It is also noteworthy that over 2.3 billion dollars has been raised around the world in the form of initial coin offerings (ICOs).

The analysis undertaken in this paper suggests that Spain is not significantly positioned in this market in quantitative terms but is playing a prominent role in generating projects that are attracting considerable investment in the market for ICOs.

The paper highlights the prevailing debate concerning the volatility being displayed by the crypto assets and the suitability of the conventional valuation models for determining the intrinsic value of these assets. The suggestion is that standard price analysis should be complemented by other methods that specifically factor in the cost of producing crypto assets and the value of the underlying technology. On this point it is also worth examining to what extent the forks in the software underpinning these assets may be compromising their scalability and economies of scale expected to result from growth in user numbers.

Lastly, it is looking increasingly as if central banks and supervisors will play a vital role in the development of crypto assets. On the one hand, they may seek to exercise their oversight and control duties over these assets and warn users in the event of suspected fraud or an environment not deemed suitable for retail investors. On the other hand, and just as important, if not more so, we cannot rule out the possibility that they could develop their own digital currencies (CBDCs) and establish a digital alternative to cash that could drive a reduction in payment system costs and tax fraud. At any rate, these are uncharted waters and not a journey to be embarked on lightly on account of the technical ramifications and huge significance for financial stability.

Notes

[*] See glossary of crypto assets terminology: http://www.funcas.es/_obsdigi_/Glosario_en/

[1] http://www.ey.com/Publication/vwLUAssets/ey-research-initial-coin-offerings-icos/$File/ey-research-initial-coin-offerings-icos.pdf

[2] https://www.eba.europa.eu/documents/10180/2139750/Joint+ESAs+Warning+on+Virtual+Currencies.pdf

[3] https://www.bde.es/f/webbde/GAP/Secciones/SalaPrensa/NotasInformativas/18/presbe2018_07en.pdf

[4] As stated by Kenneth Rogoff in the blog Project Syndidate: https://www.project-syndicate.org/commentary/bitcoin-long-term-price-collapse-by-kenneth-rogoff-2017-10/spanish?barrier=accessreg

[5] This is, for example, the view of the Nobel Prize winner Jean Tirole in an article in the *Financial Times:* https://www.ft.com/content/1c034898-d50f-11e7-a303-9060cb1e5f44

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Santiago Carbó Valverde. CUNEF and the Funcas Observatory of Financial Digitalisation

Francisco Rodríguez Fernández. Granada University and the Funcas Observatory of Financial Digitalisation

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FINTECH SANDBOX

The regulatory sandbox and potential opportunities for Spanish FinTechs

Regulatory sandboxes, one of the best means of accelerating financial innovation while controlling risks, are already operating successfully around the world. Efforts are underway for Spain to be among the next group of countries to put their own sandboxes into motion.

Rodrigo García de la Cruz

Abstract: Efforts to strengthen the global financial system in the wake of the crisis have made it more solid and resilient, but simultaneously created a more onerous post-crisis regulatory framework. The new requirements have also had a significant impact through various channels on today's financial institutions. Within this context, the regulatory 'sandbox', widely used in the FinTech and digital banking arenas, stands out for its many advantages. These advantages include the ability to promote competition, ultimately in the benefit of consumers, by allowing companies to test innovative products, services and business models in a real or live market environment, while ensuring the existence of appropriate safeguards. The UK has successfully pioneered the sandbox concept back in 2015, but currently regulatory sandboxes are also already operating with

positive results in Singapore, Abu Dhabi and Switzerland. Spanish authorities too have recently announced their intentions to launch a national sandbox, but implementation should move quickly in order not to lose the first-mover advantage relative to other continental European peers.

Introduction

Banking regulation is ubiquitous nowadays. And it is coinciding with the multiple opportunities and challenges deriving from information and data processing. However, there are also risks associated with sensitive issues such as cyber-attacks, money laundering and, in some instances, identity theft. This has prompted countless financial and non-financial entities to earmark vast sums of money to ensuring the security of their data and stringent compliance with data protection regulations. The sheer number of new laws, regulatory frameworks and compliance regulations has grown considerably. In parallel, seismic changes in the geo-strategic landscape, such as the Trump administration's protectionist measures and Brexit, have generated additional regulatory changes that are affecting the corporate and financial sectors deeply. This regulatory situation is costly and complex.

Recent estimates [1] suggest that financial institutions will need to devote an average 10% to 15% of their staff to compliance and data security. Major banks such as HSBC, Deutsche Bank and JP Morgan are already spending roughly 1 billion dollars a year on regulatory compliance and oversight. Despite this, the fines paid by certain entities to regulators since the crisis of 2008 are running at over 321 billion dollars.

According to the RegTech Supplier Report [2], around 50,000 regulatory documents have been published in the G20 since 2009, which translates into an average of 45 new documents a week. MiFID II alone has generated 30,000 pages of regulatory text.

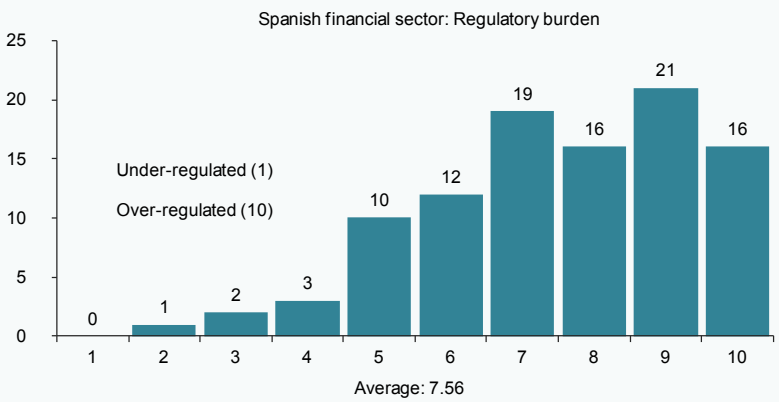
Regulation vs. innovation

The post-crisis regulatory framework is more exacting and this has had an impact on financial institutions. This is evidenced by sector executives according to the first edition of the Financial Innovation Barometer compiled by Funcas and Finnovating: 37% of those surveyed believe that the financial sector is very over-regulated (scores of 9 and 10 on a scale of 1 to 10) and 35% believe that it is considerably over-regulated (scores of 7 and 8). In contrast, just 3% believe it is under-regulated (1 to 3).

Exhibit 1

Degree of Spain's financial sector regulation

(Percentage)



Source: Barrometer of Financial Innovation (www.funcas.es/_obsdigi_/_DownloadContent_.aspx?Id=1150), Funcas ODF and Finnovating.

The increase in the regulatory burden runs the risk of smothering innovation in any sector or country by creating an element of uncertainty surrounding innovations that are not subject to any regulations at the time of their creation.

What is a sandbox and what does it do?

The term 'sandbox' is widely used in the FinTech and digital banking arenas as it is conceivably one of the best ways of accelerating financial innovation while controlling risks so as to protect end consumers.

The best and simplest definition is that of a controlled environment or safe space in which FinTech start-ups or other entities at the initial stages of developing innovative projects can launch their businesses under the 'exemption' regime in the case of activities that would fall under the umbrella of existing regulations or the 'not subject' regime in the case of activities that are not expressly regulated on account of their innovative nature, such as initial coin offerings (ICOs), crypto currency transactions, asset tokenisation, etc.

The goal of a sandbox is to promote competition, ultimately in the benefit of consumers, by allowing companies to test innovative products, services and business models in a real or live market environment, while ensuring the existence of appropriate safeguards.

The 10 advantages of a sandbox

To understand the advantages that a regulatory sandbox could have for a European or IberoAmerican country like Spain, it is important to analyse the potential benefits. The 10 main contributions are analysed here:

- *Fostering of innovation and job creation*. Sandboxes allow a working environment from which to launch new financial or insurance business models that make intensive use of data and new technology to create innovative and more efficient solutions for customers.

- *Fine-tuning of legislation*. Sandboxes create an environment in which to observe how regulatory frameworks should be adapted to embrace the changes the FinTech sector requires so as not to falter on the innovation front.

- *Minimising risks*. It is the ideal instrument for enabling the supervisors to keep an eye on the newest innovations and for fostering a mutual learning process with respect to the risks and opportunities posed by the use of new technologies in new business models.

- *Cutting costs*. Lower costs and shorter time to market for innovative FinTech and InsurTech products and services.

- *Attracting investment*. Sandboxes help countries position themselves in the international hub of foreign capital for innovative sectors in which the UK, Australia, Japan, Canada, Hong Kong and Singapore stand out.

- *Fostering competition*. By initially reducing regulatory requirements and lowering barriers to entry, competition intensifies, ultimately translating into better products and services for end consumers.

> "A sandbox is essentially a controlled environment in which FinTech start-ups can launch their businesses under the 'exemption' regime in the case of activities outside the scope of existing regulations or the 'not subject' regime in the case of activities that are not expressly regulated due to their innovative nature."

- *Benefits for customers and financial inclusion*. Sandboxes facilitate entry into the market for newcomers, all of which ultimately benefits end customers. This can take the form of more and/or better products and services, lower prices or technological innovation. They also enhance access to financing and further financial inclusion for the more marginal segments of society.

- *Talent redemption*. Nowadays, many entrepreneurs choose where to launch their start-ups as a function of the ease of starting up a new business, to which end they analyse business licences and regulatory frameworks. A sandbox can help prevent an exodus of talent from a country.

- *Attracting innovation*. The rollout of one of the first sandboxes in the European Union could draw start-ups from other member states that do not have such attractive regulatory frameworks.

- *European and Latin American financial hub*. The Spanish FinTech and InsurTech Association (AEFI), the first to put together an alliance of FinTech associations representing over 20 countries, has launched a 10-point declaration for a Latin American sandbox.

Sandbox regimes

Exemption mode. Under the exemption regime, the sandbox would allow FinTech and InsurTech firms to enjoy a test period during which they can build up to meeting the requirements for obtaining a licence to operate, for example, in the securities, banking, payment services or insurance markets (*e.g.,* capital, solvency, corporate governance requirements, etc.) gradually. They would not be required to comply with all of these requirements from the outset, an issue that could constitute a clear impediment for the economic viability and survival of many companies; rather, they would be asked to meet them on a staggered basis as they achieve a certain level of maturity. Innovation would be a prerequisite for authorising the exemption.

Not subject mode. Elsewhere, under the 'not subject' mode, the sandbox would allow FinTech and InsurTech companies that pursue activities that have yet to be specifically regulated (*e.g.,* ICOs, neobanks and the brokerage of crypto currencies) to begin to test their products in a safe or controlled test space so that these kinds of products and services are launched onto the market with the backing of the regulator and, therefore, the required safeguards for the end customer and the financial system itself, increasing legal certainty and credibility in the process.

A sandbox for Spain

The introduction of a sandbox in Spain would imply multiple advantages for the development of the FinTech and InsurTech sectors.

Firstly, exclusively focusing on the benefits that would accrue to the FinTech and InsurTech sectors, it is undeniable that the creation of a regulatory framework tailored and proportionate to the needs of entities at the initial stages of development or maturity could boost their proliferation, as well as lowering launch costs and shortening the time to market of these entities' products and services.

One of the first obstacles faced by the FinTechs is, precisely, the complex bureaucratic system that is so hard to navigate during the earliest stages of development. A controlled test environment would help alleviate the bureaucratic burden by providing legal certainty to those entities seeking to operate in the market but unfamiliar with traditional financial regulations.

There are, therefore, loftier reasons that go beyond the mere individual benefits for the FinTech or InsurTech players or even the customers who may get to buy their products and services: there are reasons of public interest.

As a result, the introduction of a regulatory sandbox would allow certain FinTech and InsurTech firms to enjoy a test period during which they would be entitled to build up to the

requirements for obtaining a regular licence slowly and gradually. Specifically, they would not be required to comply with all of these requirements from the outset.

Implementation: Attribution of powers to the Spanish regulators / supervisors (DGSFP, Bank of Spain, CNMV)

In order to roll out a sandbox in Spain, the law that governs the concept, along with the enacting regulations, will have to assign powers to the existing regulators for the processing, supervision and regulation of the entities benefitting from a sandbox authorisation or licence.

As set out in the sandbox proposal made by the AEFI (published in March 2018), the role of the supervisor could be confined to four phases, namely: (i) application; (ii) evaluation; (iii) testing; and, (iv) post-testing or exit.

(i) *Application*. The supervisor would be tasked with reviewing sandbox licence applications and reporting to the applicants within one month of their submission as to whether or not their applications have been accepted.

(ii) *Evaluation*. Having passed the application round (in which the supervisor would rule whether the FinTech firm's application is admissible), the complexity of the project submitted by the firm and other analytical factors would be specifically evaluated, giving the applicant the chance to rectify any errors or provide any information their applications may lack.

This evaluation phase would end with the supervisory body's decision as to whether or not to grant the sandbox licence. Regardless, whenever the evaluation phase ends with the turning down of an application, the supervisor would be required to inform the applicant which criteria and/or requirements it did not meet, thus giving it the chance to present a new and qualifying application.

The concession of a sandbox licence could also be made conditional upon compliance by the applicant with a series of requirements that at the date of granting of the licence are not met but that could be met by the applicant within a short period of time.

(iii) *Testing*. Once in possession of a sandbox licence, the entity would enter the testing phase, during which it would have to report to the supervisor from time to time on the progress made. In addition, the entity would be required to inform and notify its customers that the financial service being offered is at the time being provided under a sandbox arrangement, duly alerting them of the associated risks.

The testing phase (which may last between 12 and 36 months for B2C businesses and between 48 and 56 months for B2B businesses) would end when the entity surpasses one of the established thresholds (in terms of customer numbers or revenue, for example) or because the testing period has elapsed. However, for FinTech or InsurTech activities or firms that are still not subject to regulation at the end of the sandbox testing period, the competent supervisor could grant successive or indefinite permit extensions.

(iv) *Post-testing or exit*. At the end of the testing period, the sandbox licence extended by the supervisor would expire and the entity that had enjoyed the authorisation would be required to leave the sandbox. The regime could contemplate the possibility of extending the sandbox period so long as the permit holder applies for an extension to the supervisor at least one month before it is due to expire and presents sufficient grounds for the extension. It would be up to the supervisor to decide whether or not to extend the licence on a case by case basis and its decision would be final (not subject to appeal).

Once their licences expire, the entities would be allowed to start to market the financial services tested in the sandbox at a larger scale, so long as:

- The supervisor and the sandbox beneficiary agree that the expected results have been obtained; and,

- The sandbox entity is ready to meet all applicable legal and regulatory requirements.

Successful applicants would be required to present a final report summarising the results of their tests before transitioning outside the sandbox.

Geo-strategic analysis: Best international practices and lessons learned

UK case study

The UK was the first country in the world to establish a regulatory sandbox. A report was published in November 2015 with the aim of helping the Financial Conduct Authority (FCA) to foster effective competition in the interests of consumers.

That report outlined the main benefits a sandbox would target:

- Reducing the time and, potentially, the cost of getting innovative ideas to market;
- Enabling greater access to financing for innovators, by reducing regulatory uncertainty;
- Enabling more products to be tested and, thus, potentially introduced into the market;
- Allowing the FCA to work with FinTech businesses to make sure that appropriate consumer protection safeguards are built in to their new products and services.

The initiative presented in November 2015 ultimately took effect in June 2016 when the first round of cohorts was called.

Progress made by the British sandbox. Early indications (the overview of year one) suggest this sandbox is providing the benefits it set out to achieve. Access to the regulatory process offered by admission into the sandbox has reduced the time and cost of getting innovative ideas to market.

The direct feedback provided by the cohorts during and after the tests in their final reports indicates that this aspect of the sandbox programme has proven highly valuable in helping them understand how the regulatory framework applies to them, accelerating market entry and reducing start-up costs.

The British sandbox in figures. The following conclusions stand out from the information provided in the Regulatory Sandbox lessons learned report published by the FCA in October 2017:

- 75% of the firms accepted into the first cohort successfully completed testing.
- Around 90% of the firms that completed testing in the first cohort are continuing toward a wider market launch following their test.
- The majority of firms issued with a restricted authorisation for their test have gone on to secure a full authorisation following completion of their tests.
- At least 40% of the firms which completed testing in the first cohort received investment during or following their sandbox tests.
- The sandbox has facilitated a significantly higher number of tests than initially anticipated, covering a wide range of sectors and product types.

> “Feedback provided by cohorts indicates that access to the regulatory process, as part of the sandbox experience, has proven highly valuable in helping understand how the regulatory framework applies to them, accelerating market entry and reducing start-up costs.”

Who participated? During the first two cohorts, the British sandbox received applications from 146 firms; 50 of those were provided with support with their test design, implementation and supervision. Not all of the firms progressed to testing their solutions in the sandbox: nine firms were unable to attain this milestone for differing reasons.

Sector breakdown. The most active sectors in the first two cohorts were the following (in order of importance):

- Retail banking
- General insurance
- Wholesale
- Retail investments
- Retail lending

The sandbox encouraged applications from all sectors. However, a majority of the firms which tested in the first two cohorts came from the retail banking sector.

Regional breakdown. According to this report, the majority of the firms in the sandbox during the first two cohorts are based in London. However, this trend appears to be changing. Approximately 35% of the firms participating in the second cohort are based outside of London, representing a marked increase with respect to the first cohort. Applications for sandbox authorisation came from all around the UK, including Scotland, East Midlands and South East of England. Applications were also received from firms based outside of the UK in countries including Canada, Singapore and the US.

This evidences the ability to attract talent from abroad and the geo-strategic positioning commanded by countries with operational sandboxes.

Size of firms. The sandbox provides support to innovative firms regardless of their size or maturity. However, the sandbox has clearly been most popular with start-up companies and those that are not yet authorised by the FCA. Note that over 83% of the cohorts were start-ups, the rest of the companies availing of this arrangement being medium- and large-sized enterprises.

New uses of technologies. Nascent technologies can play a key role in delivering innovative products and services that can improve on those currently available. This can be by enhancing the quality or reducing the price of offerings, or by increasing access for consumers. Below is a description of distributed ledger technology (DLT), more commonly known as blockchain technology.

DLT is a rapidly developing technology with exciting potential to enable firms to meet the needs of consumers and the market more effectively. We are observing how DLTs such as blockchain can be used to reduce costs, improve security and trust between groups of participants and enable services to be provided at a greater speed.

Some of the firms authorised by the British sandbox have begun to use this technology in their internal processes, rendering their operations more efficient and generating cost savings.

Singapore case study

The Monetary Authority of Singapore ("MAS") has also introduced the regulatory sandbox concept to bring greater flexibility in testing FinTech products, thereby increasing the probability that they will reach the market, whether in Singapore or abroad.

Financial institutions and other firms with an interest can apply for access to the sandbox in order to experiment within the innovative financial service production process. As with the British and Australian experiences, all within a well-defined space and duration, tailored case by case.

Swiss case study

The Swiss Federal Council (SFC) was also one of the first regulators to show initiative in

creating a sandbox to reduce barriers to entry for FinTechs.

As stated by the SFC, excessive red tape can stifle innovation and creativity in any market. The regulator noted in its proposal that all too often, politicians and policy-makers believe they are doing the right thing by creating rules and regulations designed to protect people such as themselves. Unfortunately, however, the downside can be a sluggish economy and low job creation. Despite the fact that regulations are extremely important and necessary, new rules must be drawn up with care. The Swiss authorities correctly concluded that a "dynamic FinTech system can contribute significantly to the quality of Switzerland's financial centre and boost its competitiveness".

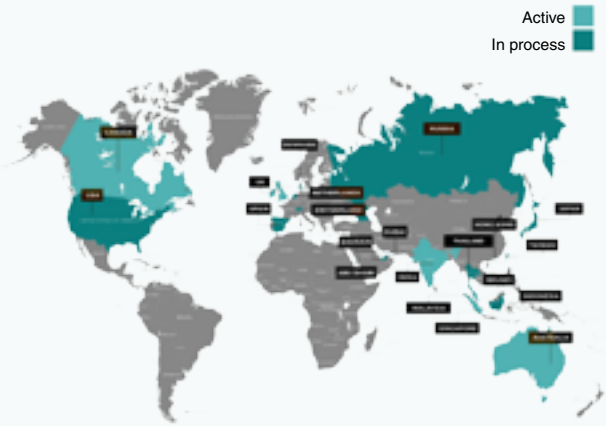
Moreover, Switzerland is already favored by fintech for many reasons, including its innovative and competitive market, the decentralised political system, and the tendency of Swiss authorities to allow for self-regulation of the financial sector. The fact that four of the five most valuable ICOs were initiated in Switzerland speaks to its popularity within the fintech industry. This established network combined with the uniqueness of the Swiss political and regulatory environment strongly suggests that Switzerland is among the best placed to become the European hub for ICO activity.

The Abu Dhabi case study

The Financial Services Regulatory Authority (FSRA) of Abu Dhabi Global Market (ADGM) set out its proposal for a "Regulatory Laboratory" ("RegLab"), a tailored framework that allows firms deploying innovative technology in the financial services sector to conduct their activities in a controlled and cost-effective environment.

As the first such initiative in the Middle East and North Africa (MENA) region, the RegLab was formulated specifically to cater to the unique risks and requirements of FinTech participants, and incorporates extensive feedback from key local and global stakeholders. The FSRA said that the RegLab continues to promote its objective in developing a stable and sustainable financial services sector in Abu Dhabi, while fostering innovation within scoped parameters buffered by risk-proportionate regulatory safeguards.

Exhibit 2 **Map of established and emergent regulatory sandboxes around the world**



Source: Innovate Finance of the UK (http://industrysandbox.org/regulatory-sandboxes/).

> “Spain is among the countries seriously exploring the implementation of a regulatory sandbox with the goal of facilitating innovation in financial services and their development.”

The ADGM recently admitted a new batch of start-up FinTech firms to its RegLab. The 11 local and international FinTech start-ups will work under the umbrella of the FSRA, one of the ADGM's three independent authorities, to develop and test their products within a controlled environment of “isolated space”.

Current situation in Spain

In early April, the Ministry of Economy announced the upcoming implementation of a regulatory sandbox in Spain with the goal of facilitating innovation in financial services and their development. The launch date is not yet determined but it is estimated that this instrument could be operating in Spain no later than the fourth quarter of 2018.

The idea is for Spain to position itself at the forefront of efforts to stimulate financial innovation as there is currently an attractive window of opportunity given that very few countries have set up a financial regulatory sandbox. Spain would be one of the pioneers in continental Europe or Latin America. This window of opportunity will not remain open for long, however, as countries such as France, Italy, Mexico and Brazil are working very intensively on launching their own sandboxes.

In addition, there is growing talk of international sandboxes, such as that proposed by the UK in its FinTech Sector Strategy Report of March 2018.

There is also increasingly persistent chatter about a possible European sandbox although this is not likely to materialise in the near future. Regardless, the opportunity is there for the taking for the countries most daring in their sandbox creations and support for financial innovation.

Notes

[1] https://www.ft.com/content/fd80ac50-7383-11e6-bf48-b372cdb1043a

[2] http://www.marketfintech.com/regtech-report-2017-2/

Rodrigo García de la Cruz. CEO of Finnovating

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Spanish, Eurozone and US banks: The link between market valuations and profitability

The advent of the Banking Union has helped drive a substantial improvement in the main bank performance ratios, which has in turn translated into gains in banks' share prices. While improvement has been uneven across geographies, better performance in Spain is being rewarded by higher valuations relative to European peers.

Ángel Berges, Alfonso Pelayo and Fernando Rojas

Abstract: The creation of the Banking Union has facilitated a significant improvement of European banks' main performance indicators, most notably the decline in their NPL ratios. Against the backdrop of this improvement in banks' metrics, their market values have also rebounded considerably, albeit the recovery has been uneven between the US and Europe and has not reached pre-crisis levels. In analysing which factors have the biggest impact on market valuations, ROE proves to be the most significant, scoring an R^2 of over 50%. This statistical significance increases to nearly 90% when the regression analysis considers forward-looking ROEs, which stand above current profit levels, evidencing the fact that the market is pricing in future profits.

Introduction

The publication of banks' 2017 results marks the end of three full years of operation under the scope of the Banking Union. Such a milestone warrants an analysis of the performance of the banks in Spain and in Europe, together with the market's response. The analysis is presented from a dual perspective. Firstly, over time, from the start of the century, to illustrate how the crisis affected banks' market valuations in the three jurisdictions studied (Spain, Europe, and the US). Secondly, a cross-sectional approach, analysing a broad sample of listed banks in Spain, the eurozone and the US to determine the key factors explaining the market values of each at present.

The analysis of the relative market values of the banks (measured using their price-to-book value or P/BV multiples) is particularly relevant as it enables the measurement of the value created by the entities via different business models. In addition, it constitutes an indirect indicator of the market's confidence in the sustainability of each bank and, therefore, the distance from non-viability or resolution. And last but not least, a high valuation (close to or even above book value) is a prerequisite for tapping the market for Tier 1 equity (shares) and broadening the shareholder base.

Bank valuations: A long-run perspective, pre- and post-crisis

In order to gain insight into the trend in bank stock market valuations over time and visualise the impact of the crisis and subsequent recovery has had on these valuations, Exhibit 1 depicts the trend in the P/BV ratio in Spain compared to Europe and the US. In all three cases, we have approximated that ratio by aggregating the weighted averages for the listed banks.

Compared to valuations of three or four times' book value at the start of the century, the advent of the crisis translated into significant discounts to book value, evidencing major doubts about the reliability/recoverability of those book values and the banks' ability to generate sufficient returns on their capital.

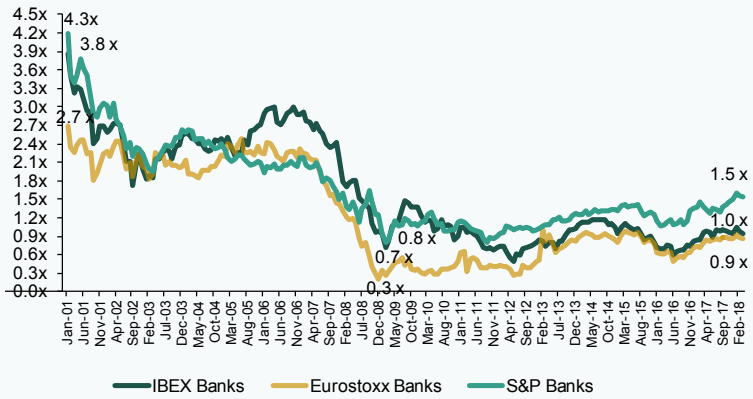
Focusing on the Spanish banks, it is worth highlighting how the market had assigned particularly high valuations (far higher than those assigned to their European or US counterparts) at the peak of the real estate bubble (2005 - 2007), demonstrating that the stock market proved incapable of anticipating that the boom years could not go on indefinitely. The correction associated with the crisis was also proportionately sharper in the case of the Spanish banks than in that of the other two subgroups analysed.

Since the lows of the crisis, the subsequent recovery has been clearly asymmetric in the US versus Europe: sustained and recurring in the former, whereas the European banks, and in particular the Spanish banks, after a false start in 2009, sustained a fresh relapse between 2010 and 2012, hitting new lows that were even lower than those observed during the collapse of Lehman Brothers. The subsequent recovery, underpinned by several key decisions taken in the summer of 2012 – the bailout of the Spanish banks and, above all, the ECB's decisive 'whatever it takes' message, coupled with the commitment to move ahead with the Banking Union – has not been sufficient to close the valuation gap opened up vis-a-vis the US banks, which are trading at a premium of over 50% to the Spanish banks

> "From P/BV ratios of 3x to 4x at the start of the century, banks' valuations have dipped below book value, albeit with marked differences between geographies, particularly between the US and the eurozone."

> “Of the indicators tested to analyse banks’ performance, the most clear-cut improvement since the advent of the Banking Union lies in the reduction of non-performing loan ratios.”

Exhibit 1 **Trend in P/BV multiples by region**



Source: Factset, Afi.

and at an even higher premium compared to the other European banks.

Bank performance three years after the creation of the Banking Union (BU)

Given that, as mentioned above, the European banks’ stock market recovery was driven largely by the announced creation of the Banking Union (BU), a first analysis of the factors that explain the European banks’ current valuations should focus on analysing their performance during the three full years (2015, 2016 and 2017) for which they have been operating under the supervisory and regulatory umbrella of the BU.

To this end, the listed banks having all duly presented their 2017 earnings, we analyse the data for that year for a broad sample of Spanish banks (7) and entities from other European countries (20) with the aim of analysing the improvements sustained in their key performance indicators during the three years since the rollout of the BU. By way of contrast, we layer into that analysis the performance posted by the US banks, for which we also use data for a broad sample of banks (18).

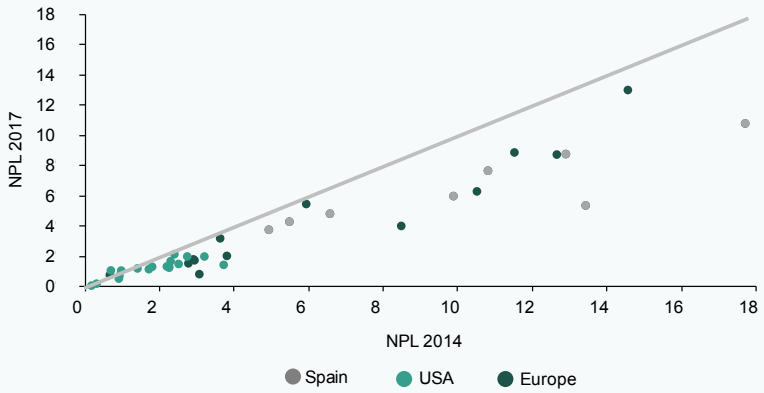
Specifically, we focus on three bank performance indicators: asset quality, for which we use their non-performing loan (NPL) ratios; their cost-to-income (CtI) ratios, as a measure of managerial efficiency; and their returns on equity (ROE).

It is unquestionably in asset quality (NPL) that the improvement observed across the European and Spanish banks three years on from the introduction of the BU is clearest. Exhibit 2 illustrates for all of the banks in the sample their current NPL ratios and those reported before the rollout of the BU. As expected, all of the banks in the sample fall below the diagonal line, which means that their NPLs are across the board lower today than in 2014. The distance from the diagonal

Exhibit 2

Current and pre-BU NPL ratios

(Percentage)



Sources: SNL Financial, Factset, Afi.

line indicates the improvement observed and is in general greater in the case of the Spanish banks than for the rest of the European banks.

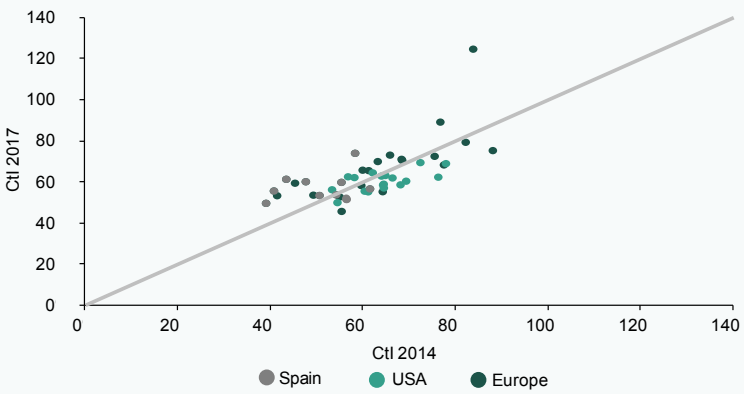
However, this optimistic interpretation gets watered down when contrasted with the US banks, for which the NPL range is substantially below the range observed for the Spanish and other European banks. It is probable that the far lower NPL ratios reported by the US banks is one of the factors explaining their relatively higher market valuations, as we will analyse further on.

As for operating efficiency (CtI), the trend has been far less favourable than observed in the case of the NPL ratios. In fact, as is shown by Exhibit 3, the majority of European banks, including Spanish banks, have become less efficient, placing above the diagonal line,

Exhibit 3

Current and pre-BU CtI ratios

(Percentage)



Sources: SNL, Factset, Afi.

indicating that their CtI ratios are higher in 2017 than in 2014. This adverse trend in efficiency has undoubtedly been shaped by the persistent downward pressure on gross margins (the denominator in the CtI ratio) in the absence of business growth and in an environment of zero or even negative rates. It has not been possible to offset that downward pressure on margins with the cost-cutting that most of the banks have undertaken. In contrast, US banks, whose margins are higher and whose business volumes have experienced stronger growth, have improved their efficiency ratios during the last three years.

Nevertheless, it is worth highlighting the fact that, despite having deteriorated somewhat since 2014, Spanish banks present considerably better (lower) cost-to-income ratios than either their European or US counterparts.

Lastly in our round-up of how European and Spanish banks have improved their performance under the umbrella of the BU, we look at a key parameter for investors and their take on bank capital, *i.e.,* the return on equity (ROE), the trend for which is presented in Exhibit 4.

Although most of the banks lie above the diagonal line (a higher ROE in 2017 versus 2014), there is considerable disparity among the various entities, whose ratios range between 1% and 15%. Within that disparity, it is clear that US banks present better ROEs than their European counterparts and, within the latter subset, Spanish banks look somewhat better than their neighbouring peers.

Bank performance and market values

Having analysed the trend in the key performance indicators for banks in the three years since the BU was created, we sought to analyse the relative importance of each in predicting the differences in banks' market values.

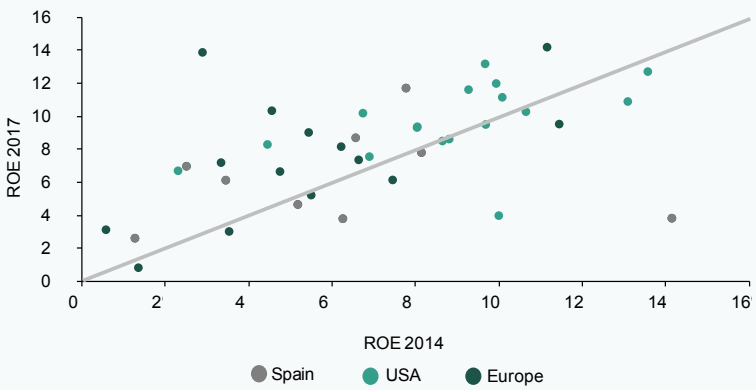
To this end we charted, for the sample of banks selected, the relationship between their relative values (P/BV ratio) and their positioning in terms of the three performance metrics used: profitability (ROE); non-performance (NPL); and efficiency (CtI).

The correlation between relative valuation and profitability (ROE) is clearly positive – the higher the ROE, the higher the valuation multiple – and very statistically significant;

Exhibit 4

Current and pre-BU ROE ratios

(Percentage)

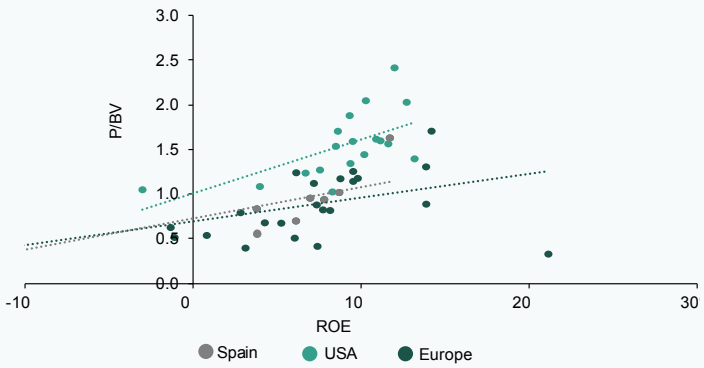


Sources: SNL Financial, Factset, Afi.

> “In the regression analysis of banks’ performance indicators and market values, the most statistically significant correlated indicator is the ROE ratio, this correlation being stronger in the US than in Europe and within the latter region, highest in Spain.”

Exhibit 5 **P/BV and ROE, 2017**

(Percentage)



Sources: SNL Financial, Factset, Afi.

in fact it is the variable that best explains valuation differences among the banks. The estimated regression line is far steeper in the US than in Europe and within Europe it is steeper for the Spanish banks than for the other countries. In short, not only do the American banks generate higher ROEs than their European counterparts, but each point of ROE is ascribed more value by the market in the case of the US banks relative to the European banks and within the latter, more in the case of the Spanish banks.

As for the correlation between market value and asset quality (NPL), Exhibit 6 confirms an inverse relationship between the two variables – the higher the NPL ratio, the lower the valuation multiple. This condition holds in all the geographies analysed. The slope of the estimated regression line is steeper in Spain than in the US and Europe, implying that each point of reduction in the NPL ratio is ascribed more value in Spain than in the other markets. Nevertheless, the explanatory power of the NPL ratio with respect to market value is substantially lower than in the case of the ROE ratios.

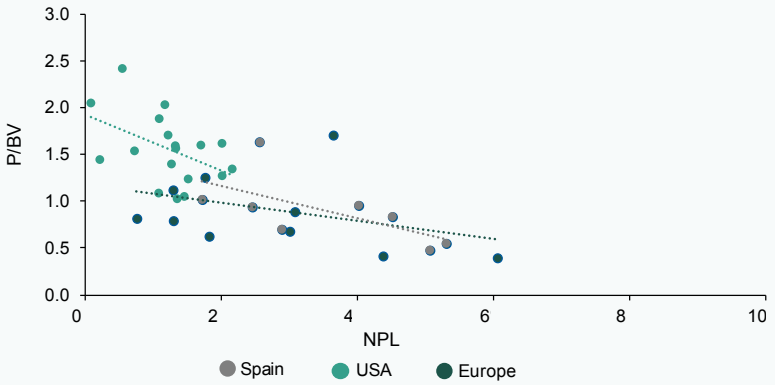
While market valuations display a clear correlation with Profitability (ROE) and asset quality (NPL); such a relationship is not statistically significant with efficiency (Cost to Income), as can be seen in Exhibit 7. In fact, there is some contradiction between results in Europe-Spain and the US. In the US, it appears that market valuation is positively correlated (although not significant) with CtI. It might be the case that in the US, the market values more the expectation of future growth than actual cost structure.

Given that the three indicators exert, each one separately, an influence over the banks’ valuation multiples, we next conducted

Exhibit 6

P/BV and NPL, 2017

(Percentage)



Sources: SNL Financial, Factset, Afi.

multiple regression analysis in an attempt to estimate the aggregate explanatory power of the three variables on valuation. The results of that exercise indicate that on aggregate the three indicators have explanatory power (R^2) of 55%, the effect of the ROE ratio being far more statistically significant than the other two variables (NPL and CtI) in terms of explaining the valuation differences. The estimated model is as follows:

PBV = 0.90 + 0.025*ROE – 0.004*NPL – 0.004*CtI

It is important to make a clarification when interpreting these results, particularly in

Exhibit 7

P/BV and CtI, 2017

(Percentage)

Sources: SNL Financial, Factset, Afi.

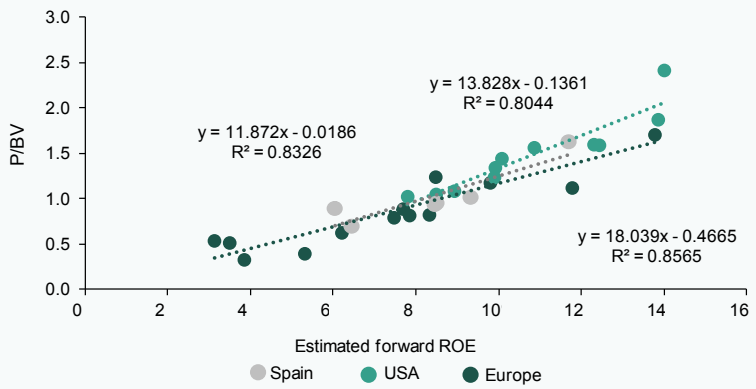
> “Taking a forward-looking perspective, *i.e.*, using the consensus ROE estimates, the explanatory power rises to nearly 90%, suggesting that the market is discounting future earnings.”

terms of potentially concluding that the NPL and CtI ratios have little impact on market values, which would be incorrect. Note that there is a very high correlation between the three performance variables, so that profitability (ROE) is very strongly correlated with improvements in efficiency ratios (lower CtIs) and lower non-performance (NPLs), which translates into fewer idle assets and also lower provisioning requirements. Given these significant correlations, it should be underlined that in a multiple regression analysis such as this, the significance attributed to the NPL and CtI variables is only that which is ‘incremental’ to that already embodied by the ROE ratio as the main explanatory variable.

Given the relevance ascribed by the market to ROE as the main factor explaining relative valuation (P/BV), we made a final attempt at improving the explanatory power by layering in a forward-looking perspective. Instead of focusing on trailing ROEs, we focus on the consensus FY+1 ROEs estimated by the market. As shown in Exhibit 8, the explanatory power rises considerably, to nearly 90%, and the key trends commented on previously continue to hold: the slope of the regression line is steeper in the US than in Europe and within Europe it is steeper for Spanish banks.

Given the importance of the forward ROE estimates in explaining the banks’ valuations, we conclude this paper with a synopsis of what the market is looking for in the next three years compared to the results during the last three-year period – the first under the umbrella of the BU. The consensus forecasts are pretty clear-cut and point to a persistent improvement in ROEs across all the banking systems under a declining NPL burden and the possibility of increased efficiency if margins get a breather and begin to rebound slightly, in line with Afi’s expectations for Spain and Europe.

Exhibit 8 **P/BV relative to forward ROE 2018 (estimated)**

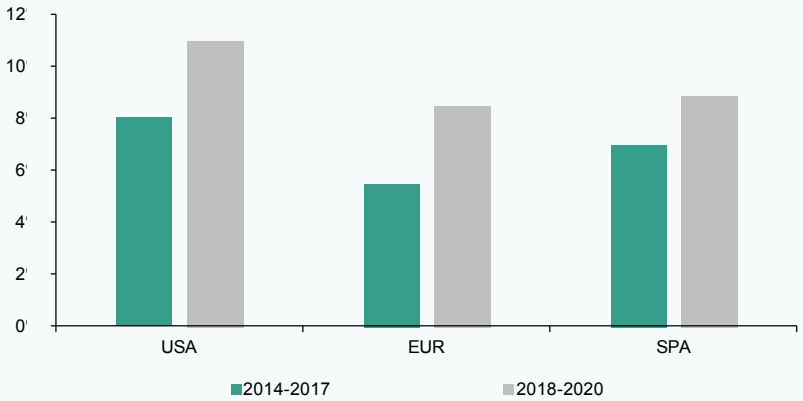


Sources: SNL Financial, Factset, Afi.

Exhibit 9

Average ROEs 14-17 and forward ROEs 18-20

(Percentage)



Sources: SNL Financial, Factset, Afi.

Nevertheless, US banks are expected to continue to generate substantially higher ROEs than their European counterparts, clearly consolidating the 10% mark assumed to be desirable in the long-run, a level not deemed plausible in Europe or Spain. Spain is expected to continue to present ROEs above the European average, although the gap with its European counterparts is likely to narrow.

Conclusions

Banking business conditions have improved considerably in recent years thanks in part to the creation of the Banking Union, which has prompted a substantial improvement in the main bank performance ratios.

This improvement has been welcomed by the market, as is evident in the gains in banks' share prices, reflecting improved confidence in the banking business, especially in Europe. However, the differences between the regions are significant, as are the differences between the variables with the greatest impact on market values, with US banks enjoying higher valuations (1.5 times their book value) than their European counterparts (slightly under one times).

In Europe, the Spanish systems is, within the main banking systems, the one best valued by the market: it has unquestionably capitalised on the relatively greater provisioning effort made and the work performed to realign capacity, placing Spanish banks in a favourable position compared to their European peers on efficiency and profitability.

Ángel Berges, Alfonso Pelayo and Fernando Rojas. A.F.I. - Analistas Financieros Internacionales, S.A.

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New coverage requirements and accounting rules: Impact on Spanish banks' non-performing exposures

The overlap of recent EU guidelines on coverage levels for non-performing exposures (NPEs) with the implementation of new accounting standards is expected to put additional strains on banks' profits. While pressures should be limited in Spain, both in Spain and in Europe, the regulatory changes have incentivized an unwinding of banks' stocks of NPEs, which is expected to continue into 2018.

José García Montalvo

Abstract: The new coverage requirements for NPEs arising from proposals put forth both by the European Commission and the ECB, together with the entry into force this year of IFRS 9 accounting standards, is expected to put additional pressures on banks' income statements at a time when profitability remains a key challenge. In this context, banks are given a clear-cut incentive to reduce their exposure to such assets.

The Bank of Spain's recent modifications to NPE classification will help reduce the impact of IFRS 9 on Spanish banks. At the same time, Spanish banks have already reduced their NPEs 46% since December 2013. The sale by Spanish banks of large portfolios of non-performing exposures in 2017 accounted for nearly half of all sales of non-performing assets in Europe last year. Taking into consideration Spanish banks' strategic plans for further reducing their non-performing exposures and the portfolios already on sale, the market will once again be very active in 2018. However, concerns regarding the impact on the market of the influx of properties as a result of the large transactions closed last year could weigh on potential buyers' expected returns.

Introduction

It is clear that a high ratio of non-performing assets or exposures (NPEs) hurts banks' profitability. Non-performing assets have to be written down for impairment, financed and managed with a view to recovering them. All of these factors weigh on banks' income statements, particularly at times of ultra-low and/or negative interest rates such as at present. The concern expressed by Europe's financial regulators and supervisors regarding the stock of non-performing exposures is not new. As part of the Supervisory Review and Evaluation Process (SREP), and on the basis of non-performing assets as at December 2015, the ECB established criteria for requiring many entities to present a strategic plan for managing their non-performing exposures [1].

However, since mid- 2017, this concern has become far more palpable in the form of new regulations designed to put pressure on banks to reduce their NPEs quickly. The ultimate goal of these regulations is to create incentives conducive to the early management of non-performing loans (NPLs) and in the event of accumulation, their sale in secondary markets. Against this backdrop, the Action Plan to Tackle Non-Performing Loans in Europe announced by the European Commission in July 2017 raises a series of proposals for forcing the financial institutions to reduce the risk of running high stocks of impaired exposures in the future. Although the plan includes a plethora of proposals, three aspects stand out: (i) the proposal for a minimum common coverage level for newly- originated loans that become non-performing by means of an amendment to the CRR; (ii) the development of secondary markets for non-performing assets with the aim of enabling creditors to recover value even during episodes of stress; and, (iii) a technical blueprint for the creation of national asset management companies (AMCs) or so-called 'bad banks'. In this paper we will focus on the impact of the amendment to the CRR Pillar I requirement and the ECB's supervisory expectations (Pillar II) when assessing a bank's level of prudential provisions for non-performing exposures in light of the new guidance published by the ECB.

The new regulations require higher coverage levels for non-performing exposures and introduce incentives for their efficient management or sale in the event of accumulation. It is important to note that these initiatives overlap with the implementation of the new IFRS 9 [2], which has generated concern regarding the potential crystallisation of an additional stock of non-performing assets that would weigh on European banks' profits. Estimates have suggested an increase of 11% for the European banks in this respect. In Spain, the situation is a little less worrisome since Bank of Spain Circular 4/2016 had already brought Spanish regulations closer to the FINREP framework. As a result, using Bank of Spain nomenclature, the

> "Implementation of the new IFRS 9 standards has generated concerns of an additional stock of European bank NPAs, an estimated increase of 11%, which would weigh heavily on profits."

> "The Spanish financial sector's NPL ratio is very close to the EU average, having reduced its average exposure by more than the EU as a whole."

'substandard' loan category has disappeared and the exposures that used to be classified as substandard or underperforming now qualify for 'special monitoring' within 'normal' or performing exposures. This new classification system is fairly close to what qualifies as stage 2 impairment under IFRS 9. Similarly, the Bank of Spain also updated its definitions of 'doubtful' and 'normal' exposures (Annex IX) to distinguish more clearly between 'performing' and 'non-performing', in line with the FINREP framework. These modifications, among others, help explain the reduced incidence of IFRS 9 on the Spanish banks' stock of non-performing exposures, as detailed further below.

Moreover, there is an element of overlap between the new accounting rules and the regulators' desire to accelerate the reduction of banks' stock of non-performing exposures. Some banks, particularly those of Italy and Greece with high NPE ratios, would appear to be pre-empting their coverage requirements, making the most of the advantageous 5-year transition period put in place by the EC for new provisions with an impact on capital. The Italian banks have recognised 10.7 billion euros of provisions for expected losses while those of the Greek and Cypriot banks are expected to reach 3.5 billion euros [3]. These additional provisions incentivise the accelerated reduction of non-performing assets although it would appear that they have caused the ECB some concern on account of their deferred accounting treatment.

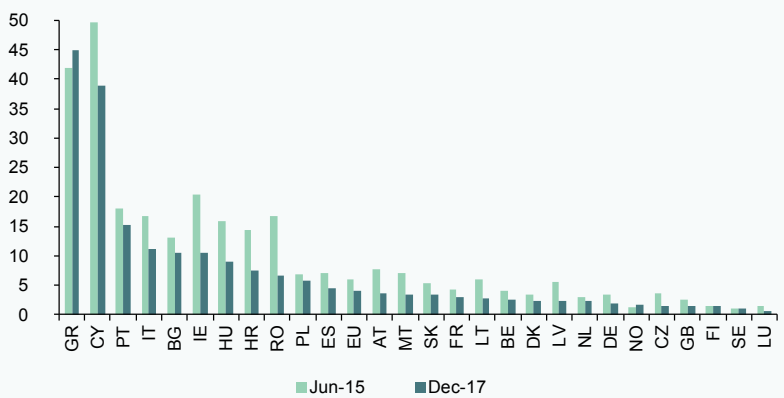
European banks: Non-performing assets and new regulations

The financial crisis of 2008 left European banks saddled with a sizeable burden of non-performing assets which is making it

Exhibit 1

Non-performing loan ratios by country

Percentage



Source: EBA and author's own elaboration.

hard for them to restore their margins to acceptable levels, in light of the cost of capital, in a context of historically low rates. Exhibit 1 depicts the trend in non-performing loans in the EU between June 2015 and December 2017. Greece and Cyprus stand out, with NPL ratios of over 35%. In Cyprus at least the stock of NPLs is declining, whereas in Greece it continues to climb. The Spanish financial sector is very close to the EU average, having reduced its average exposure by more than the EU as a whole.

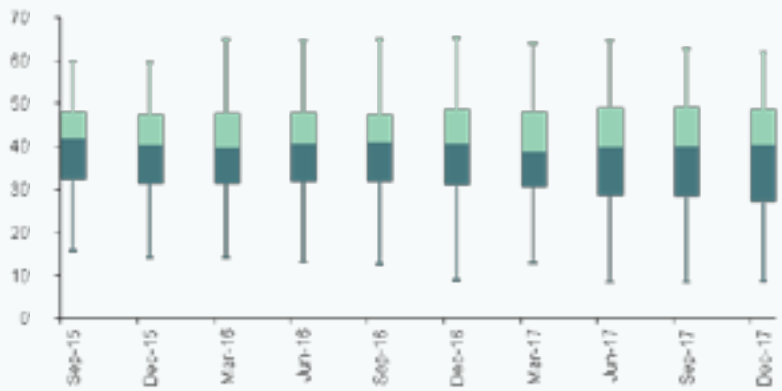
One of the main objectives of the new regulations on non-performing assets is to standardise the provisioning effort by establishing a minimum level of coverage of non-performing assets applicable to all entities. Exhibit 2 provides the interquartile range for coverage in the various EU member states. The upper quartile represents the value of the indicator that includes 95% of the sample while the lower quartile represents the indicator that includes 5%. The interquartile ranges (between 25% and the median and between the latter and 75%) are shown in dark blue and light blue, respectively. Exhibit 2 shows how the median coverage ratio has been steady at around 40% but the interquartile range between 25% and the median has been expanding considerably, while the level that captures 95% of the sample has been falling. The huge range between the 5% and 95% percentiles of the distribution is particularly eye-catching.

As noted in our introduction, the pressure to increase coverage ratios is coming from two fronts. On the one hand, the European Commission (EC) has proposed setting a new minimum coverage ratio (Pillar I); on the other hand, the ECB has established expectations concerning coverage for the SREP (Pillar II). The EC regulation is automatic and implies the imposition of a minimum coverage ratio by way of an amendment to the CRR, whereas the limits established by the ECB are framed by the supervisory dialogue the ECB engages in with the entities as part of the SREP. This means that not complying stringently with the coverage requirements deriving from the ECB's guidelines may not have consequences if convincingly justified to the supervisor.

Much of the analysis regarding the differences between the EC and ECB requirements has focused on the noteworthy calendar difference for maximum coverage (100%) for secured

Exhibit 2 **Distribution of the coverage ratio for non-performing loans by country**

Percentage



Source: EBA.

"Among other differences, the EC coverage level proposal consists of a regulation and would therefore be binding, whereas the ECB guidance puts forward an expectation for discussion with the regulator."

exposures which is set at eight years of NPL vintage in the EC regulation, compared to seven years for ECB purposes. Nevertheless, there are multiple similarities between the two sets of requirements, as well as certain important differences. For example, in both instances the requirements relate to assets that turn non-performing after effectiveness of the new regulations (*i.e.,* new non-performing exposures); it is logical, however, to interpret the measures as setting a precedent for all non-performing exposures [4]. In addition, bank exposures are classified in the same way in both regimes, distinguishing between secured exposures or secured balances of partially-secured exposures and unsecured exposures, or unsecured balances of partially-secured exposures. The requirements both vary depending on how long the assets have been non-performing. However, the EC requirements distinguish between past due and 'unlikely-to-pay' exposures. There are other important differences. As noted earlier, the EC proposal consists of a regulation and would therefore be binding, whereas the ECB guidance puts forward an expectation for discussion with the regulator. In addition, as the EC proposal is a minimum requirement set down in the CRR, it would apply to all the countries to which that Regulation applies, whereas the ECB guidance only applies to the member states under the Single Supervisory Mechanism (SSM). In general, the ECB imposes higher coverage ratios [5] relative to the EC requirements. For unsecured exposures, the ECB is looking for 100% coverage from year two after classification as non-performing. The EC proposal is to have banks provision 100% of past due exposures only from year two and a lower 80% of unlikely-to-pay exposures. Exhibits 3a and 3b provide the coverage ratios for secured exposures as a function of the length of time they have been non-performing and the likelihood of collection.

Exhibits 3a and 3b evidence the additional burden implied by the ECB guidance. In the case of the ECB requirements, both past due and unlikely-to-pay exposures require 100% coverage by year seven after classification as non-performing, whereas the EC proposal only requires 100% of secured exposures past due by more than eight years.

Table 1 **Unsecured exposures**

Percentage

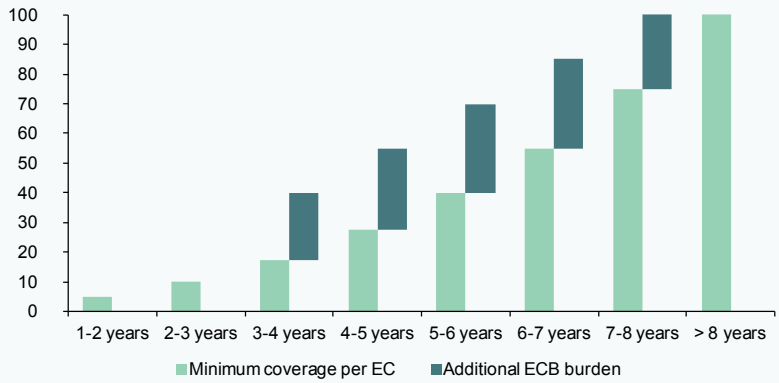
		1-2 years	Over 2 years
EC	Past due	35	100
	Unlikely to pay	28	80
ECB	All	0	100

Sources: ECB and EC.

Exhibit 3

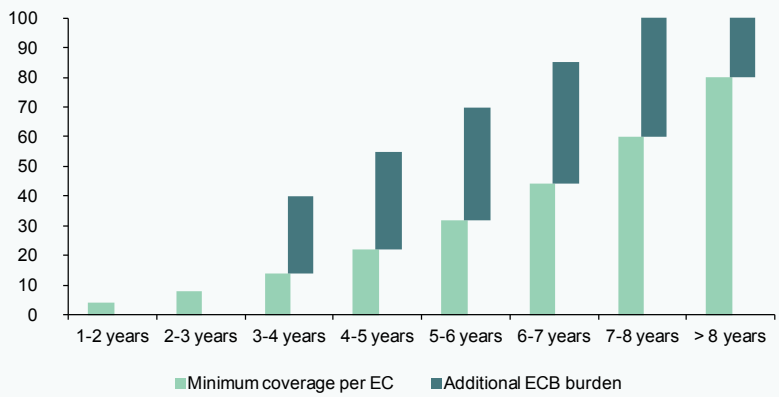
a. Coverage of past due secured exposures

Percentage



b. Coverage of unlike-to-pay secured exposures

Percentage

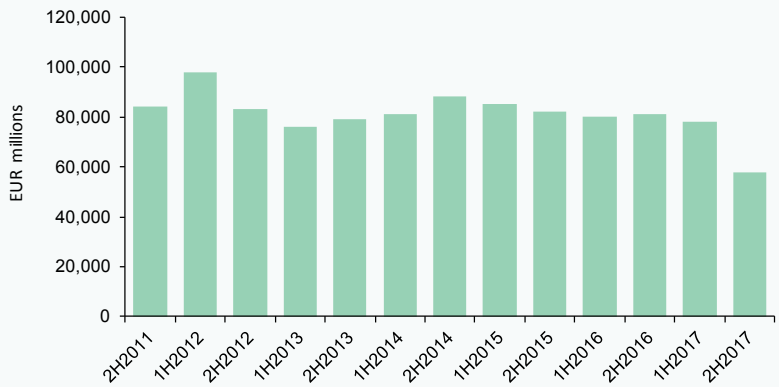


Sources: ECB and EC.

New regulations and non-performing assets in Spain

The most recent data concerning Spanish banks' non-performing exposures show clear signs of improvement. The deposit-takers' non-performing loans declined by 16.1% to 94.18 billion euros in 2017 [6]. The percentage of newly non-performing exposures (28.7%) increased in 2017 compared to the trend witnessed during the three prior years but recoveries were also proportionately higher (-31.2%). The reduction in non-performing assets due to write-offs was 13.7% of the opening NPE balance. The biggest contributor to the reduction in NPEs was the corporate segment (-20.7%), particularly companies in the construction and real estate sectors (-30.6%) which presented a non-performing ratio of as high as 37% in December 2013. Non-performing exposure to home mortgages fell by 4.4%, a somewhat narrower decline than the year before. However, in the household lending segment other than mortgages the rate of change in non-performing exposures was broadly the same,

Exhibit 4 **Forborne assets**



Source: Bank of Spain and author's own elaboration.

with these exposures even increasing at some banks (Bank of Spain, 2018).

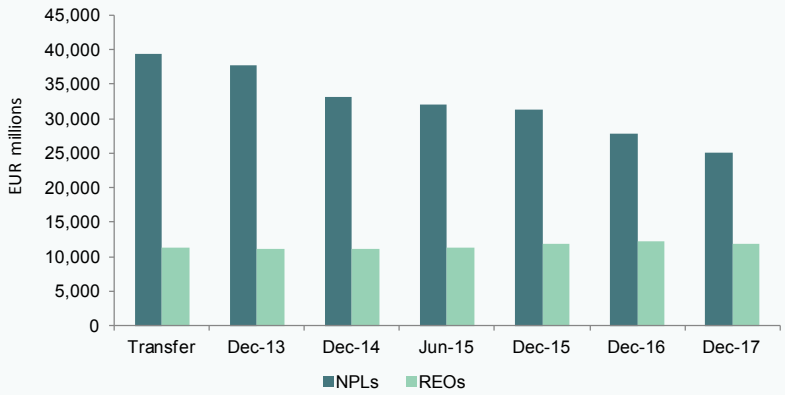
As for forborne assets, as illustrated in Exhibit 4, volumes have been very stable since the assets of the Group 1 and 2 entities (around 80 billion euros) were transferred to the national asset management company (SAREB). In the second half of 2017, as a result primarily of the write-down of Banco Popular's forborne assets to their carrying amount at the time of its resolution, as well as other adjustments, total forborne assets were reduced significantly, to 58 billion euros. Thus, the non-performing exposures of the Spanish deposit-takers had declined from 192 billion euros at year-end 2016 to 152 billion a year later. This figure, despite its magnitude, contrasts sharply with the stock of almost 280 billion euros of non-performing exposures of December 2013. The cumulative decline in non-performing exposures since that date stands at 46%.

The market for non-performing assets in Spain

The effectiveness of IFRS 9 from January 1st, 2018, is expected to have a relatively small impact on the Spanish banks' capital.The new impairment provisioning criteria are based on expected losses, in contrast to the outgoing IAS 39 framework, which was articulated around incurred losses. For 'stage 2' or 'underperforming' exposures (financial instruments that have experienced a significant increase in credit risk or probability of default since initial recognition but do not present objective evidence of impairment), impairment provisions must be calculated for the loans' 'lifetime' expected credit losses. Spanish regulations already contemplated a similar scenario (these exposures, subject to a few nuances, were defined as 'substandard' until Bank of Spain Circular 4/2016 renamed this category as requiring 'special monitoring'). As a result, the impact of these new impairment provisions for otherwise performing exposures is small in the case of the Spanish banks.

However, the impact of the changes concerning coverage requirements – or expectations – put forward by the EC and ECB could potentially be higher. In anticipation of the impact of the regulatory changes to minimum coverage levels contained in the EC proposal and ECB guidance, the Spanish deposit-takers accelerated the sale of non-performing assets in 2017. Before analysing the market for non-performing assets in Spain, it is important to introduce a very significant

Exhibit 5 **Trend in assets under the SAREB's management**

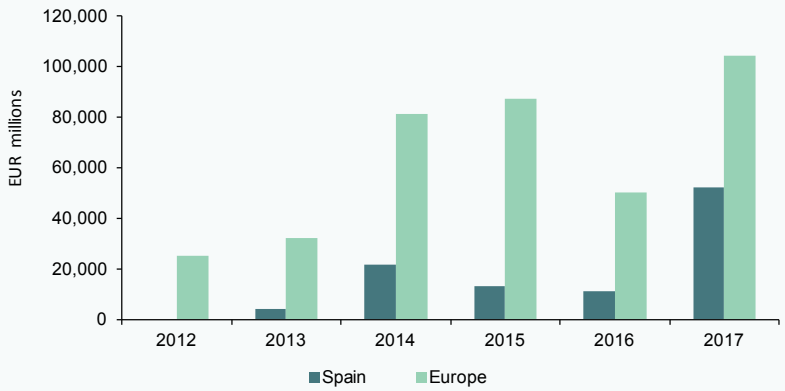


Source: SAREB financial reports.

player. A noteworthy part of the supply of non-performing assets in Spain, already scoped out of the banking sector, are those managed by the national asset management company, the SAREB. Exhibit 5 shows the trend in the assets under its management. That trend is similar to that observed for the deposit-takers' non-performing exposures: a sustained decline in non-performing loans and a steady stock of forborne assets.

Exhibit 6 shows the trend in sales of non-performing exposures (non-performing loans and forborne assets) in Europe and in Spain. The activity in these markets coincides with the reduction by one-third in non-performing loans (from 1.12 trillion euros three years ago to 0.81 trillion at year-end 2017) of European banks reported by the EBA. The figures reveal intense activity in Spain in 2014, which trailed

Exhibit 6 **Sales of non-performing assets in Europe**



Source: Evercore (Europe) and author's own elaboration (Spain).

Table 2 **Key non-performing asset sale transactions in Spain (2017 and early 2018)**

Closing date	Seller	Project name	Face value	Buyer
Mar-17	Bankia	Gold	102.97	D.E. Shaw
Apr-17	Abanca	LOR	136	KKR
Jun-17	Bankia	Galdana	100	EOS Spain
Jun-17	BMN	Rigoletto & Valquiria	165	Axactor
Jun-17	Santander	Marina Bay	338	Axactor
Jun-17	BBVA	Jaipur	600	Cerberus
Jun-17	CaixaBank	Tramuntana	600	Deutsche Bank
Jul-17	Ibercaja	Fleta	489	Fleta Issuer Holding Designated Activity Company
Jul-17	Liberbank		169	Lindorff / Link
Jul-17	Sabadell	Normandy	950	Oaktree
Jul-17	Liberbank	Mihabitans	1885	Haya Real Estate (Cerberus): 100%
Aug-17	Sabadell	Gregal	800	D.E. Shaw / Lindorff / Grove
Aug-17	Santander	REOs Popular + Aliseda	30,000	Blackstone: 51%
Sep-17	Bankia	Jets	100	
Oct-17	Liberbank	Invictus	602	Bain capital (80%) / Oceanwood (10.1) / Liberbank (9.99)
Nov-17	BBVA	Marina & Sena	13,000	Cerberus: 80%
Nov-17	Abanca	Salvora	476	EOS Spain
Dec-17	Bankia	Sopelana	150	
Dec-17	CaixaBank	Egeo	800	Cerberus (Gescobro) / Lindorff
Dec-17	Sabadell	HI partners	630.73	Blackstone (Halley Holdco)
Dec-17	Sabadell	Voyager	800	Canadian Pension Fund Investment Board (CPFIB)
Dec-17	Unicaja	Malagueta/ Bullfighter	228	Axactor
Dec-17	Unicaja	Proyecto Malagueta - Bullfighter	228	Axactor: 75%
Dec-17	Ibercaja	Servet	334	Cabot
Dec-17	Bankinter	Champions League	436	Axactor
Dec-17	SAREB	Ines	375	Deutsche Bank
Jan-18	Santander	Indianapolis	500	Lindorff
Jan-18	CaixaBank	Tribeca	700	D.E. Shaw
Mar-18	Caixabank (Building Center)	1,458 homes		Testa

Sources: Press releases issued by the sellers and buyers, financial reports and media coverage.

off in 2015 and 2016. During this period, the improvement in the economy, coupled with the recovery in real estate prices, may have slowed the rate of sales of non-performing assets by the Spanish banks in light of the possibility of recovering a growing portion of their non-performing loans and securing higher prices for forborne assets. In this situation, the price expectations of the investment funds that typically buy these assets diverged substantially from those of the banks. During this period, several plans for the sale of toxic assets (Mammut, Lince, Big Bang, etc.) were cancelled and funds that had been very active during the early years of activity in non-performing asset disposals such as Cerberus dropped off the scene. In 2017, when the banks were faced by clear signs of pressure from the regulators and supervisors to reduce their non-performing exposures, the Spanish market rebounded, accounting for roughly 50% of the European market for the sale of non-performing assets.

Table 2 itemises the most significant transactions. Unquestionably, the market was marked by the announced purchase by Cerberus of 80% of BBVA's non-performing exposures and the acquisition by Blackstone of 51% of Aliseda and some of Popular's non-performing exposures in the latter part of the year.

In light of the portfolios that are currently up for sale and the plans of many Spanish banks for reducing non-performing assets, it is likely that the market will remain very active in 2018. Sabadell is planning to reduce its non-performing exposures by 2 billion euros by 2020 although depending on investor appetite and the agreements with the deposit guarantee scheme, this figure could be raised significantly in 2018. Bankia's 2018-2020 business plan calls for the sale of 2.9 billion euros of non-performing exposures per year. Ibercaja is planning to cut its non-performing exposures by 50% through to 2020, equivalent to around 600 million euros per year. Liberbank, meanwhile, is targeting an annual reduction of 900 million euros until 2020. In 2018, Santander is targeting a 6 billion euro reduction and the SAREB is aiming for 3 billion euros.

How buyers view these assets

The supply of NPLs and REOs, looking solely at the Spanish banks and the SAREB [7], stood at 190 billion euros at year-end 2017 (119bn of NPLs and 71bn of REOs). There is a good deal of interest in Spanish banks' assets. Nevertheless, the investment funds, the usual buyers of these assets, are somewhat concerned about two issues. Firstly, the growth in house prices in Spain and the rapid rise in rental prices have considerably impaired accessibility. Some funds are worried that the affordable housing thresholds (ownership and rent) have been reached in Spain. Certainly, growing competition in the mortgage segment, marked by a price war and with some entities offering to leverage 100% of appraisal values, reminiscent of the credit bubble, may ease their concerns over house prices somewhat but not over rental prices. Secondly, and more importantly, there is concern regarding the impact the unwinding of the large portfolios sold by the banks at the end of 2017 could have on house prices. This concern is justified by the significant percentage of all residential property sales represented by sales by banks and the SAREB in recent years: 22.8%. The unwinding in the market of the enormous stocks of housing acquired by the funds at the end of 2017 could have a significant impact on prices and undermine returns on these transactions. In

"Regardless of some investor concerns over expected returns, in light of the portfolios that are currently up for sale and the plans of many Spanish banks for reducing non-performing assets, it is likely that the market will remain very active in 2018."

this climate, and despite the banks' eagerness to reduce their REOs, it may become increasingly harder to arrive at a price that matches buyers' and sellers' expectations. The improvement in economic forecasts could, in contrast, boost sales of NPLs.

Conclusions

Entry into effect of IFRS 9 and, more significantly, the new coverage requirements for non-performing exposures, are set to give the banks a clear-cut incentive to reduce their exposure to these assets. In Spain, non-performing exposures have been reduced by 46% since December 2013. The sale by Spanish banks of large portfolios of NPLs and REOs in 2017, which accounted for nearly half of all sales of non-performing assets in Europe last year, and the write-down of Banco Popular's non-performing assets for impairment in the wake of its sale to Santander, has played a significant role in this reduction. In theory, judging by the Spanish banks' strategic plans for reducing their non-performing exposures and the portfolios already on sale, the market will once again be very active in 2018. However, concerns regarding the impact on the market of the influx of properties as a result of the large transactions closed last year could weight on potential buyers' expected returns.

Notes

[1] On March 8th, 2018, the EBA launched a public consultation on guidelines on the management of non-performing exposures and forborne exposures with the aim of achieving a sustainable reduction. One aspect of this initiative worth highlighting is the requirement that entities with high levels of non-performing exposures (NPL ratios of over 5%) establish a strategy for reducing them and a governance structure and operational set-up for facilitating the process.

[2] IFRS 9 took effect in January 2018, replacing the IAS 39 framework, even though some entities began to calculate their impairment provisions under the new standard from the second half of 2017.

[3] According to Autonomous Research estimates.

[4] The similarity is subject to nuances, for example in terms of the cut-off date for newly-non-performing loans: March 14th in the case of the EC and April 1st for the ECB. Moreover, the ECB deems any exposures newly classified as non-performing (regardless of when originated) as subject to the new requirements, whereas the EC requirements only apply to exposures originated after the date of adoption of the proposal.

[5] The maximum coverage ratio is 185% for secured exposures past due by less than 90 days between three and four years after classification as non-performing.

[6] Exposures had fallen again to 92.47 billion by February 2018.

[7] At present, some of the funds themselves are also sellers given where they are at in their own investment cycles.

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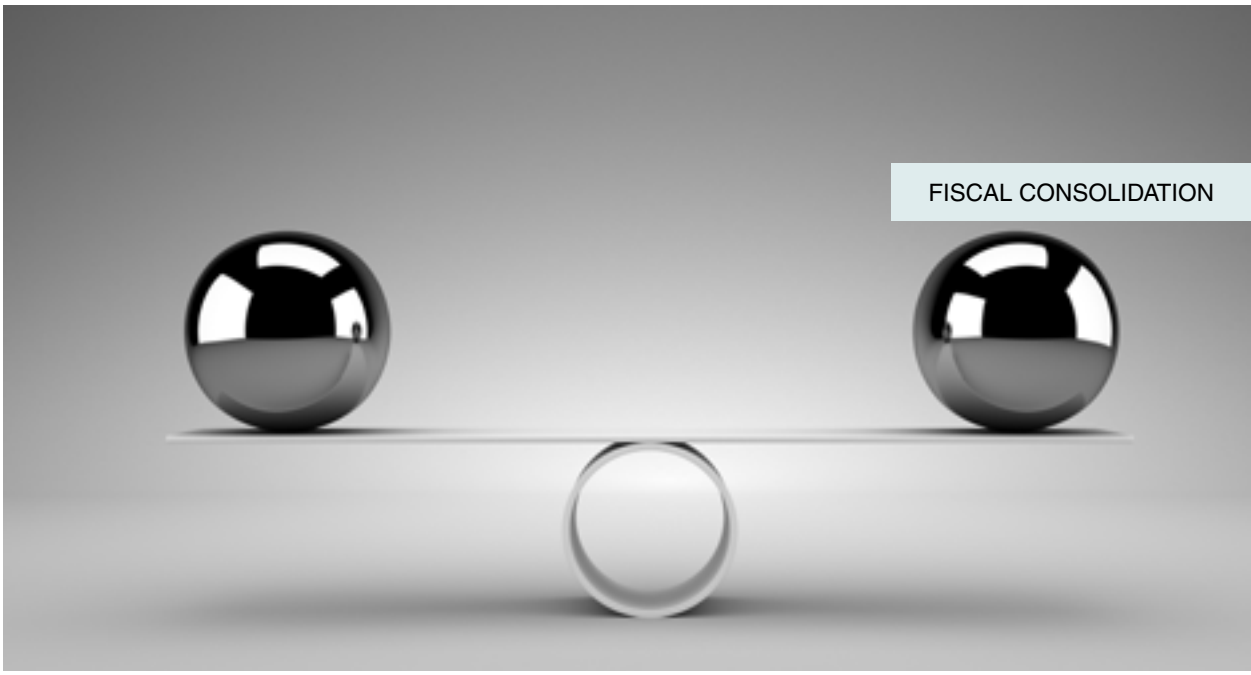


Progress on fiscal consolidation: Risk of non-compliance and complacency

The dichotomy of strong economic performance and political gridlock in Spain has resulted in fiscal consolidation in line with established targets, but below initial expectations as regards timing and ambition. Fiscal slippage over the years has led to an onerous debt to GDP burden that can only be reduced over the longer term through a stronger structural fiscal effort not only on the revenue, but also on the expenditure side.

Santiago Lago Peñas

Abstract: A favourable economic context has helped Spain meet EU fiscal objectives for 2017. This has been the case even in the face of political tensions at home stalling the budgetary process and any meaningful momentum on fiscal reform. On the basis of execution data for the first quarter of 2018, budgetary projections and possible amendments to further increase spending, compliance with fiscal targets for 2018 is far from guaranteed. Over the medium term, the latest Stability Programme envisions convergence to a balanced budget by 2021, but with little adjustment to reduce the structural deficit. Such a scenario raises concerns over the evolution and ultimate

sustainability of Spain's public debt, having increased significantly over the crisis to reach close to 100% of GDP. Under the baseline scenario, public debt to GDP would converge to just below 80% over the upcoming ten-year period, rising to a further 85% or more should the economy experience a growth or interest rate shock.

Introduction

Fiscal consolidation in Spain has taken place in the context of a contrasting environment during the last three years. On the one hand, the economic situation is clearly positive. Since 2015, Spanish GDP growth has been one of the most vigorous in the European Union. The economy has reached its pre-crisis level of GDP and in 2018 the output gap will be positive again, according to official estimates [1]. Interest rates are at historic lows, which dramatically reduces the public debt burden. In tandem with this, the European Commission has been flexible in its demands for deficit reduction targets. One only needs to compare the course set out in the Fiscal Stability Programme of the Kingdom of Spain for the four-year period 2015-2018 with the levels attained and the target for the current year: a relaxation of the figures of between one and a half and two percentage points of GDP.

In contrast, the political context is more complex than ever before. The General State Budget (PGE) for 2016 was approved a quarter earlier than usual, in anticipation that the general elections held in December 2016 would put a break on the budget cycle. The opposite has happened in the following two years. The first six months of 2017 and 2018 have been managed with an extended budget, which implies strategic inaction and provisionality. In the last two years, the Parliamentary fragmentation has made it impossible to discuss and approve important reforms on both the revenue side and the public expenditure side: the tax system, regional financing and pensions. These are pending key reforms with no prospect of a short-term solution.

In short, it is true that Spain has met public deficit targets, but this is largely because the targets have been substantially relaxed and the economic situation has been even better than expected. The effort on the part of the administration itself could be stronger.

The aim of this paper is precisely to review the targets and trends of the Spanish fiscal framework in the short, medium and long term, starting with a brief review of the budget execution in 2017 and the first months of 2018. There is then an assessment of the picture depicted in the General State Budget (PGE-2018) and its parliamentary procedure; next, the medium-term scenario of the 2018-2021 Fiscal Stability Programme; and, lastly, reference is made to projections for the evolution of the public debt until 2027.

2017 year-end and the start of 2018

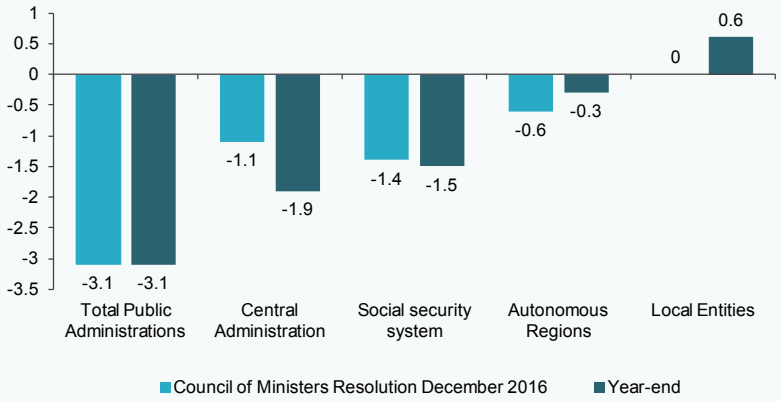
As shown in Exhibit 1, the Spanish Public Administrations met the target (-3.1%) at the end of 2017. The results should not be surprising. Already in the second half of 2017, most public and private organizations were forecasting the achievement of the overall target for the entire year (Lago-Peñas, 2017). Nor should it come as a surprise that there has been notable diversity in the degree of compliance by sub-sectors, although it is true that the year-end result for the Autonomous Regions was in line with the most favourable expectations. In any case, the systematic deviation from the targets of some sub-sectors that we have seen in the last three years (in particular, in the case of Local Corporations and the social security system) should cause one to reflect on how realistic the targets of

"Spain has met public deficit targets, but this is largely because the targets have been substantially relaxed and the economic situation has been even better than expected."

Exhibit 1

Initial and year-end deficit forecast for 2017 by sub-sector

(Percentage of GDP)



Source: AIReF (2018).

each sub-sector are. A systematically biased fiscal strategy ends up generating credibility problems and expectations of laxity in the compliance requirement [2]. Using the surplus of one level of government (local) to offset deviations from others is a possibility. The alternative is that each sub-sector is tied to its own targets and that possible positive deviations are used to accelerate the reduction of the combined deficit of the Public Administrations. As we will see in later sections of this article, the second possibility is a better response to the slowness characterising the fiscal consolidation process in Spain.

With regard to the current year, the information available on budget execution is limited to the first two months and disregards the Local Corporations. The target set for 2018 is to reduce the deficit by 0.9 percentage points, from -3.1% to -2.2%. In the first two months of 2018, the accumulated correction is slightly below one sixth (0.13 percentage points), a reduction that is shared almost equally between the Central Administration and the Autonomous Regions (Exhibit 2).

In May 2018, the Funcas' consensus forecasts panel (2018) forecasted a minor shortfall of 0.3 percentage points (-2.5%), although the range of values is broad, from -2.2% to -2.8%. Both the Bank of Spain (2018) projections made public in March and the *Fiscal Monitor* presented in April by the International Monetary Fund (IMF, 2018) coincide with the Funcas' consensus.

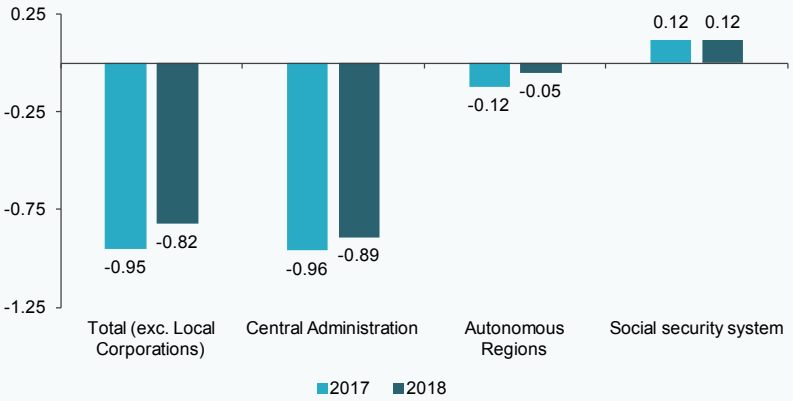
The recent evaluation by the Independent Authority for Fiscal Responsibility (AIReF) (2018), prior to the parliamentary debate of the 2018 General State Budget, considered compliance with the stability target to be "tight but feasible", with a probability of 40% and a confidence interval for its forecasts with a central point also around -2.5%. The projections of the AIReF point again to a surplus of the Local Corporations similar to that of 2017 [3], which would offset a very probable non-compliance by the social security system and a probable non-compliance by the Central Administration.

Elaborating on this rise in the forecasts over various months, in the first week of May the European Commission (2018b) criticised the tone of the budgetary measures contained in the draft 2018 General State Budget and forecasted a deficit of -2.6%, even before the rise in pensions to which we will refer in the following section, and a structural imbalance increasing from -3.0% to -3.3%.

Exhibit 2

Budget execution until February 28th, 2018

(Percentage of GDP)



Source: Ministry of Finance (2018a).

In short, with the partial information on execution for the first quarter and the projections, the budgets of the Autonomous Regions and Local Corporations and the draft 2018 General State Budget entering Parliament, compliance would not be guaranteed; in fact, it is not the most likely scenario. And the situation is complicated further because the draft 2018 General State Budget is being amended with measures that raise spending and that have not yet been considered in the previous projections. The upcoming section elaborates on this point as it refers to the Update of the 2018-2021 Stability Programme submitted to the European Commission on April 30th, 2018.

The impact of the parliamentary debate over the 2018 General State Budget

Parliamentary fragmentation has made the process of budgetary debate the key to the approval of the 2018 General State Budget. At the expense of additional changes, the extraordinary increase in pensions in 2018 (+ 1.6%) and 2019 (+ 1.5%) is clearly much higher than the 0.25% contained in the draft General State Budget presented to Parliament. The cost of the measure is 1,522 million euros in 2018 and 2,200 million euros in 2019 (Ministry of Finance, 2018b, Section 4.2.3).

This amendment gives rise to at least two problems. Firstly, it ignores the reform of the pension system approved by the Government in 2013. If at that point the urgency of the moment (in the middle of the European financial crisis, with the Spanish economy at risk of a bailout) could justify executive decisions being taken regardless of the so-called "Toledo Pact", the logical thing now would have been to transfer the possibility of flexibility in the revaluation of pensions to this area of political consensus. Secondly, it is difficult to accept that a decision involving an

> "In a context in which compliance with deficit targets and the credibility of the budget is at stake, the brief and vague explanation on financing sources could damage the reputation of the fiscal consolidation strategy."

Table 1

Targets for Financing Needs (-) or Capacity (+) of the Public Administrations (2017-2018)

(Percentage of GDP)

	2017	*2018*
Total	-3.1	-2.2
Central Government	-1.9	-0.7
Autonomous Regions	-0.3	-0.4
Local Corporations	0.6	0.0
Social security system	-1.5	-1.1

Source: Ministry of Finance (2018b).

accumulated growth in expenditure of 3 tenths of GDP is not accompanied by a complete and rigorous description of its financing. In a context in which compliance with deficit targets and the credibility of the budget is at stake, the brief and vague explanation on financing sources could damage the reputation of the fiscal consolidation strategy. Budgetary coherence requires further explanation, in additional to the 600 million euros already expected in 2018 arising from the European Directive presented at the end of March ("Proposal for a Council Directive laying down rules concerning the corporate taxation of a significant digital presence") and still being processed.

Medium-term outlook: The 2018-2021 Stability Programme

As shown in Table 2, the 2018-2021 Stability Programme sets out a convergent evolution of expenditures and revenues to achieve a balanced budget (+ 0.1%) by the final year. The 3.2 percentage point change consists of an increase in revenues of 0.8 percentage points and a cut in the expenditure burden of 2.4%; *i.e.* three quarters of the adjustment revolves around expenditure and one quarter around revenues. Moreover, the accumulated target delay is noteworthy. According to the 2015-2018 Fiscal Stability Programme, we would already be very close to balancing the budget (-0.3%), almost two points below the current target

Table 2

Output gap and budgetary balances (2017-2021)

(Percentage of GDP)

	2017	*2018*	*2019*	*2020*	*2021*
Total balance	-3.1	-2.2	-1.3	-0.5	0.1
Total non-financial revenues	37.9	38.3	38.5	38.6	38.7
Total non-financial expenditures	41.0	40.5	39.8	39.1	38.6
Pro-MEMO: Deficit forecast in the 2015-2018 Fiscal Stability Plan	-1.4	-0.3			

Source: Ministry of Finance and Civil Service (2018b).

> The deficit reduction in the 2017-2019 three-year period will be based almost exclusively on the improvement of the cyclical deficit, while the structural deficit appears to become entrenched.

for the current year. And this is despite the favourable economic backdrop in which GDP has systematically grown more than forecasted in the General State Budget of each year [4].

In fact, the main problem shown by the Stability Programme is the insufficient effort to reduce the structural deficit; *i.e.* the deficit excluding the impact of the economic cycle. Table 3 shows the estimates of the Ministry of Finance and the European Commission, both of the output gap and the structural deficit for the 2017-2019 three-year period. Two conclusions stand out. The first is that the European Commission considers that Spain is already in a positive cyclical position and, therefore, the structural deficit in 2018 exceeds the total, because the cycle is helping. In contrast, the Ministry estimates that the position in 2018 is practically neutral and, therefore, the observed deficit coincides almost exactly with the structural one. Given the uncertainty that accompanies the output gap calculations, it is difficult to know which of the two estimates is more accurate, although it is true that the independent calculations of the AIReF (2018) are closer to those of the Ministry. Where there is greater consensus is in regard to the second conclusion: the deficit reduction in the 2017-2019 three-year period will be based almost exclusively on the improvement of the cyclical deficit, while the structural deficit appears to become entrenched. This entails a shortfall in the annual reduction of at least half a point of the structural component of the deficit required by European regulations, and hinders the reduction of the debt stock, as shown in the following section.

Fiscal stability beyond 2021

The long-term fiscal stability projections are particularly complex, because in addition to the uncertainty regarding the evolution of macroeconomic aggregates, there is a lack of definition of political objectives. Beyond 2021, we have no documents to guide future political decisions with budgetary impact. In fact, even those that exist are subject to a significant margin of error due to the very dynamics of democratic systems. However, the objective becomes simpler if instead of talking about deficit, we focus on debt dynamics. This is a more easily simulated magnitude, because inertia and the weight of the past are substantially greater than in the deficit. In particular, Spain has accumulated

Table 3 **Output gap and structural budgetary balance (2017-2019)**

(Percentage of GDP)

	2017	*2018*	*2019*
Output gap (Ministry of Finance, 2018b)	-1.6	0.1	1.2
Output gap (European Commission, 2018a)	-0.1	1.4	2.3
Structural balance (Ministry of Finance, 2018b)	-2.2	-2.1	-1.9
Structural balance (European Commission, 2018b)	-3.0	-3.3	-3.2

Source: Ministry of Finance and Civil Service (2018b).

financial liabilities extraordinarily quickly: in 10 years it has gone from being one of the European economies with the lowest public debt to being one of the most indebted, with financial liabilities that by the end of 2017 were close to 100% of GDP.

Such a high level of debt to GDP is a cause for concern for five reasons. First, because of the interest charges that it entails. A normalization of rates in the euro area would quickly and substantially increase the interest bill, reducing the level of discretionary spending in the budget. Second, because of the instability it can generate in the event of a financial markets shock, as was demonstrated a few years ago through the resulting rise in the sovereign risk premium. Third, because it reduces the scope for fiscal stabilization policy in the face of future economic crises. Fourth, because the maximum benchmark for public debt in the euro area is 60%, almost forty points below the current figure. And fifth, because the progressive aging of the population represents a contingent liability that will progressively result in greater expenditure on pensions, health and care of dependent persons over the next three decades (Hernández de Cos *et al.,* 2018). Obviously, the lower the public debt and the less demanding the pending fiscal consolidation, the greater the capacity of public finances to face this future challenge.

Therefore, it is worth analysing the expected evolution of the public debt over the upcoming 10-year period under different scenarios (Exhibit 3, prepared using the interactive public debt observatory application provided by AIReF) [5]. Specifically, three scenarios have been simulated. The baseline scenario, the stressed scenario resulting from a slowdown in nominal GDP growth with respect to the baseline scenario, and another scenario in which the stress is caused by an interest rate shock [6]. Undoubtedly, the results depend on multiple assumptions. But the fundamental story holds true. Without a radical change in the structural deficit targets, a decade will be clearly insufficient not only to return to the debt level of ten years earlier (35.6% of GDP), but also to reach the 60% threshold. In the neutral scenario, in 2027 public debt would remain at 78% of GDP. And the figure would increase to 85% or more in the event that one of the simulated shocks materializes.

The recent European Commission simulations (European Commission, 2018a) show an even more worrying scenario. Projecting the current primary deficit (*i.e.* excluding interest payments), the debt ratio in the central scenario would not fall below 95% in 2028. A very similar message is that emanating from the projections of Hernández de Cos, López-Rodríguez and Pérez (2018). Even in a scenario of 3% average nominal growth, with implicit interest rates on the public debt that are low from a historical perspective (2.5%) and a significant primary surplus (0.8%), the debt would not fall below 85% of Spanish GDP in 2027.

In short, fiscal stability targets in Spain are not very ambitious, taking into account both the current and forecast objectives and the enormous amount of public debt accumulated over the last decade. Greater rigour is required, and the government must decide, responsibly and coherently, whether the adjustment will come from increasing revenues or cutting expenditures.

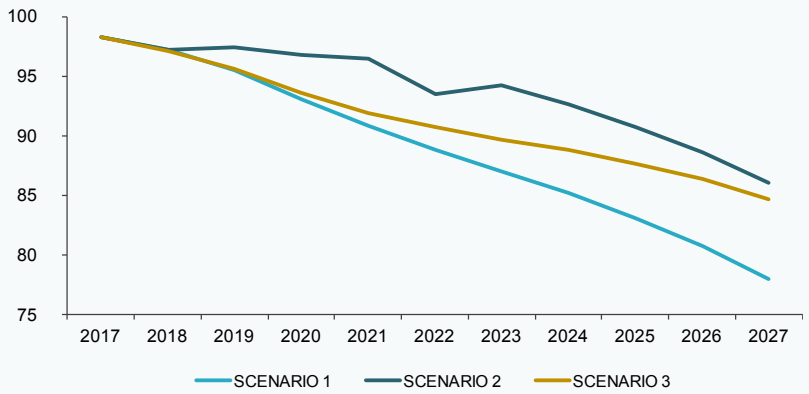
The reality is that, on both fronts, the margin for reforms and improvements is substantial. There is consensus on the weaknesses of the Spanish tax system and the recent report of the European Commission (2018) focuses on two of them: the low VAT collection due to

“ Without a radical change in the structural deficit targets, a decade will be clearly insufficient not only to return to the debt level of ten years earlier (35.6% of GDP), but also to reach the 60% threshold. ”

Exhibit 3

Evolution of Spanish public debt under three possible scenarios in 2017-2027

(Percentage of GDP)



Source: Funcas based on the AIReF debt observatory application (http://www.airef.es/observatorio-de-deuda).

tax fraud and the scope of reduced rates, and weak "green taxation" in comparative terms. But the list of challenges and opportunities is very long and covers almost all taxes, as shown in the recent Funcas document (2017).

On the expenditure side, the challenge is threefold. First, to advance in the culture of evaluating public policies, permitting an increase in the social return of investments and current expenditure programmes [7]. Second, to enhance coherency between the rights and the portfolio of public services that are embodied in the legislation and the resources that are used; between the welfare state that is desired and what people are collectively willing to really invest in it. Finally, there are areas in which the resource deficit is most notable from an international perspective (Lago-Peñas and Martínez-Vázquez, 2016). In particular, in investment in R&D+i, family policy, income programmes to fight social exclusion, and education.

Notes

[1] According to the European Commission (2018), the output gap reached -8.2% in the two-year period 2013-2014, and underwent a correction to -0.1% in 2017 and +1.4% in 2018. The Spanish government in the 2018-2021 Fiscal Stability Programme reduced these figures to -1.6% and +0.1%. The GDP growth observed in 2014 went from -0.2% to +3.4% in 2015, +3.3% in 2016 and +3.1% in 2017.

[2] AIReF (2018) gives a similar view.

[3] In March 2018, a decree-law was approved that makes the expenditure rule of the Local Corporations more flexible and allows an increase in their investments. However, AIReF estimates that the impact in 2018 will be only 200 million euros and that it will have little effect on the surplus due to the good performance of operating expenses.

[4] The change to the targets was agreed in the European Council of August 8th, 2016. The justifications given by the Government include a substantially lower than expected inflation rate; although real GDP grew more than expected, nominal GDP (the denominator of the ratios that are set as targets) grew less than expected.

[5] Available at: http://www.airef.es/observatorio-de-deuda

[6] According to the AIReF methodological note, in Scenario 1, the primary balance (balance

excluding interest on the debt) evolves gradually and in line with the achievement of the long-term debt target. During the convergence process, the annual change in the primary balance tends towards 0.25% of GDP per year. In addition, it is assumed that the GDP converges gradually from its current values to approximately its potential in 2018, and then its growth in nominal terms stabilizes around 3.3%, with long-term inflation of 1.8%. In Scenario 2, a reduction in the real growth of the economy of 1% and 0.5% in the GDP deflator for 2017 to 2019 is applied. From 2020, GDP gradually converges to its potential level. Finally, Scenario 3 assumes an increase in the interest rates applied to financing requirements, differentiating between the administrations that are indebted in the market (average increase of 0.5% in rates) and those that receive financing through government support mechanisms (average increase of 1%).

[7] There is scope for progress in the "Action Plan for Public Administration Subsidy Spending Review ("Spending review")" that the Government has entrusted to AIReF in compliance with the provisions of the 2017-2020 Stability Programme (http://www.airef.es/spending-review).

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Assessing the role of Spain's AIReF in the context of EU fiscal policy

The work of the AIReF has helped to support progress on budget stability and, by increasing the reputational costs of non-complying public administrations, it has enhanced fiscal governance in Spain. Going forward, among addressing other challenges, the AIReF should strive to preserve its independence.

Yulia Kasperskaya and Ramon Xifré

Abstract: In an effort to make progress on EU fiscal consolidation, the need for member states to have independent fiscal institutions (IFIs) is gaining acceptance. Spain's IFI, the AIReF, was created in 2013 with the mandate of guaranteeing government compliance with the principle of budget stability. The results of a review of its first years of operation, in line with the OECD's recent findings, show that the institution has consolidated its independence and credibility. The AIReF has helped to support progress on budget stability and, by increasing the reputational costs of non-compliance, enhanced fiscal governance within Spain and the EU. Nevertheless,

the AIReF still faces noteworthy challenges apart from preserving its independence, including accessing necessary information, improving the methodology of its projections, and increasing the impact of its recommendations.

Introduction

On the economic front, the European project is, for a range of reasons, in the midst of challenges and reassessment. A combination of three factors: (a) the impact of the economic crisis and its management from a political standpoint; (b) the UK referendum vote to leave the EU and the reaction by the remaining member states; and, (c) national economic policy preferences that are not always mutually compatible or synchronised are raising serious questions about the future of the European Union and of the eurozone.

As is often the case in crises, there is a certain amount of consensus regarding the facts, greater diversity of opinion regarding the causes, less agreement again about the responsibilities of the various parties and open confrontation regarding ideas and proposals as to how to fix the problem.

To organise the debate, the outstanding areas for improvement to enhance EU economic governance are usually grouped into three: i) reform of financial sector architecture; ii) reform of institutional architecture; and, iii) reform of fiscal architecture (Claeys, 2017; Wolff, 2017; Bénassy-Quéré *et al.* 2018; Jones, 2018).

This paper concentrates on the third aspect, the fiscal framework, and uses it to analyse the role of the first independent fiscal institution (IFI) created in Spain, the Independent Authority for Fiscal Responsibility (known as the AIReF for short) in helping to underpin fiscal discipline and the sustainability of public finances.

In the next section, we outline the current fiscal framework in the EU and the key factors determining the effectiveness of an IFI in helping to support sound fiscal policy. Then we analyse the AIReF's first years in operation. To this end, we examine a recent review of the institution by the OECD and analyse the recommendations made by the AIReF between 2014 and 2016. Lastly, we present a set of conclusions.

The EU's fiscal framework and the role of independent fiscal institutions

The EU's fiscal framework dates back to the Stability and Growth Pact (SGP) adopted in 1997. The pact included a preventative arm and a corrective arm, both of which were designed with the overriding goal of facilitating and injecting credibility into the excessive deficit principle enshrined in the Maastricht Treaty.

More specifically, the SGP set two fiscal rules for the member states: a deficit ceiling of 3% of GDP and a public borrowing limit of 60% of GDP (Claeys, Darvas and Leandro, 2016). However, as is well known, the pact has encountered serious enforcement issues. Indeed, nearly half of the member states were in breach of the borrowing rule for most years between 1999 and 2014, notably including France and Germany (Andrle *et al.* 2015).

In response to the SGP's lack of effectiveness, the EU's fiscal framework has been reformed several times. The Six-Pack (2011), Fiscal Compact (2012), the Two-Pack (2014) and the creation of the European Fiscal Board (EFB) in 2016 stand out in this respect (Claeys, Darvas and Leandro, 2016).

Assessments of the current state of the EU's fiscal framework are varied. There is an element of consensus that the successive rule changes have yielded a framework that is overly complicated, scantly transparent and poorly functioning. Against this backdrop, there are proposals calling for the modification of the current framework to address its lack of transparency and effectiveness (Andrle *et al.*, 2015; Claeys, Darvas and Leandro, 2016). Elsewhere, there are also calls for more radical overhaul of the existing framework in light of its complexity, ineffectiveness and in some

> "IFIs, acting independently, tend to curb the discretion with which policy makers manage their public finances, reducing their "bias towards deficit", as is well documented in empirical literature."

instances even counter-productive effects during the crisis (Manesse, 2014).

The official stance taken by the European institutions, expressed in the last major strategic document about the future of the EU, the Five Presidents' Report, is however silent on the advisability or need to modify the fiscal framework and rules (Juncker *et al.*, 2015).

Parallel to this rather low-profile official stance, debate on EU fiscal policy persists in a quest to strike a balance between two basic objectives (Bénassy-Quéré *et al.,* 2018):

- Taking measures designed to boost discipline in the member states; and,
- Pursuing reforms that have stabilising effects on the EU member states.

Within the first group of measures lies the idea of reforming the existing fiscal rules and the various agreements reached subsequently with the idea of simplifying them, making them more effective and enforceable. The second category of reforms includes new forms of temporary budgetary transfers among member states. As a corollary to this approach, the majority appears to be leaning towards finding a credible formula for the non-bailout principle, *i.e.*, the formal commitment that the states experiencing financial stress should not receive financial aid from the other member states unless they restructure their sovereign debt first.

From that perspective, in order to make progress on consolidation of the EU's fiscal framework, the need for the member states to have independent fiscal institutions is gaining acceptance. In fact, the 'Two Pack' stipulates that the eurozone member states put in place "independent bodies for monitoring compliance with numerical fiscal rules" (Regulation [EU] No. 473/2013 of the European Parliament and of the Council).

The arguments in favour of these bodies are clear-cut. IFIs, acting independently, tend to curb the discretion with which policy makers manage their public finances, reducing their "deficit bias", as is well documented in the empirical literature. Nevertheless, the institutional design, dimension and breadth of duties tasked to the nearly 40 IFIs in existence at present vary significantly from one country to the next, even within the EU.

According to the specialist literature (Beestma and Debrun, 2018), the attributes an IFI needs to make an effective contribution to the functioning of a fiscal framework are essentially three:

- Independence;
- Communication power; and,
- The degree to which the political system engages with the IFI, not just in theory but in practice, by embracing the budget stability objective and the IFI's specific mandate.

The first attribute, independence from political power, is crucial and enables an IFI to earn credibility vis-a-vis citizens and national and international economic agents. In fact, according to von Trapp and Nicol in Beetsma and Debrun (2018), it would appear that the IFIs and their respective governments are aligned on this principle as the level of independence of the OECD IFIs averages over 80% (in line with the estimated level of independence of the AIReF). As for the second attribute, optimum communication of the IFI's mission and recommendations, it is vital that the IFI's communication reach

expands so that the reputational cost for the political powers of adopting irresponsible fiscal conduct increases. Lastly, the third element, good-faith cooperation between the Executive and the IFI, is a prerequisite for enabling independence and communication.

It is important to remember that just as a state can set up an IFI, it may also, if the circumstances made so doing desirable, adjust it to suit its purposes, tweaking its mandate or circumscribing its responsibilities. For further insight into this matter, see the references to the Hungarian case in the contributions by Wren-Lewis, von Trapp and Nicol, Wyplosz, Wehner, Page and Kopits in the volume published by Beetsma and Debrun (2018).

Analysis of the AIReF's activities

Background

Spain's IFI, the AIReF, was created in 2013 with the mandate of guaranteeing compliance by the government – at all levels – with the principle of budget stability enshrined in Article 135 of the Spanish Constitution, amended in 2011. The AIReF's activities are governed mainly by Spanish Organic Law 2/2012 (April 27th, 2012) on Budget Stability and Financial Sustainability (the Stability Act).

The Stability Act establishes three fiscal rules, in keeping with the SGP and the EU's fiscal framework: (a) Spain's governments may not run a structural budget deficit; (b) growth in public spending may not exceed the economy's nominal growth (this is known as the "spending rule"); and, (c) the ratio of public borrowings to GDP may not exceed 60%. The transition period for application of these fiscal rules spans until 2020. The Stability Act also reinforced the mechanisms in place for preventing breaches and creates new ones (Hernández de Cos and Pérez, 2013 and Kasperskaya and Xifré, 2018).

The AIReF carries out its duties independently of the government even though formally it is attached to the Ministry of Finance and Civil Service. The AIReF's main source of financing is the supervisory fee that all of the governments covered by its reports are obliged to pay.

The AIReF's main activity is to issue the reports and recommendations legally-mandated to it, including assessment reports on macroeconomic forecasts; projects and key headings in the various governments' budgets; the governments' initial budgets; and compliance with the budget stability, public debt and spending rule targets. The AIReF's mandate includes the assessment and evaluation of the credibility of various economic forecasts and budgets.

The AIReF's oversight remit encompasses all levels of government in Spain: the central or state government, the regional governments, the local governments, including all of the bodies under their governance, and the Social Security administration. More recently, the AIReF has become involved in the development and monitoring of 'spending reviews', *i.e.*, analysis of the effectiveness of the spending programmes.

As a result of its analysis and oversight work, the AIReF draws up recommendations addressed to the various governments and ministries containing proposals for improving and flagging indications of the breach of the budget rules. The AIReF conducts this activity under the scope of the 'comply or explain' principle, as is customary at IFIs. This means that when an administration

> "The AIReF conducts activity under the scope of the customary 'comply or explain' principle – an administration receiving a recommendation from the AIReF must either comply with it or provide a reasoned explanation as to why it does not."

"The difficulties encountered in accessing the information needed and the quality of the data received have constituted the biggest challenge faced by AIReF in doing its work optimally."

receives a recommendation from the AIReF, that administration must either comply with it or provide a reasoned explanation as to why it does not. Every quarter the AIReF publishes the responses received from the administrations in question, which has the effect of increasing the 'reputation costs' for institutions that fail to adopt its recommendations.

The recommendations for which a 'comply or explain' response is mandatory are in turn divided between: (i) recommendations stemming from shortcomings in information ('scope recommendations'); and, (ii) recommendations stemming from matters of substance ('substantive recommendations'). The first include requests for additional information and access to the full data needed by the AIReF. The second set of recommendations inform the administrations of the initiatives and measures they need to take in order to comply with the principles of financial sustainability and budget stability, including the legally-stipulated preventative and corrective measures. Lastly, the AIReF also issues: (i) opinions and guidance on good practice that are not compulsory; (ii) studies about specific methodologies related to its field of intervention; and, (iii) a data lab.

Analysis of the AIReF's recommendations

This section analyses the recommendations issued by the AIReF distinguishing between the recipients, the type of recommendation issued and the contents of the recommendations, based on the institution's annual reports. At the time of writing, the annual reports available are those corresponding to 2014, 2015 and 2016, so that the analysis is limited to those three years.

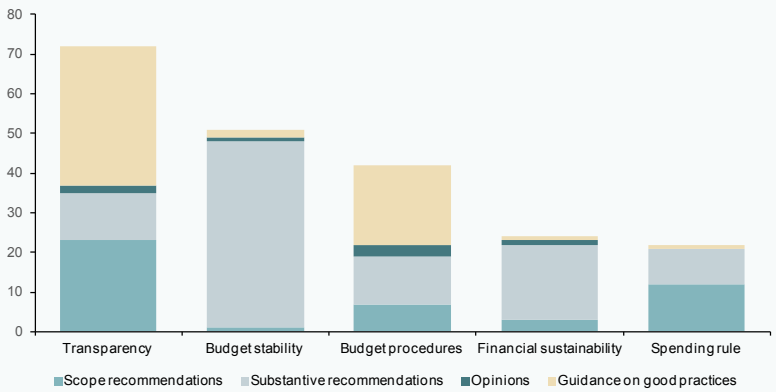
Exhibit 1 provides the breakdown of the recommendations, opinions and good practice guidance issued by the AIREF by topic and type of recommendation during its first three years in operation.

The matters concerning transparency are the most frequent. Within this heading, the two main types of recommendations issued correspond to (i) guidance on good practice, which are not considered binding in terms of the 'comply or explain' principle; and, (ii) 'scope recommendations'. Therefore, the difficulties encountered in accessing the information needed and the quality of the data received have constituted the biggest challenge faced by the AIReF in doing its work optimally. The AIReF even reached the point of a legal dispute with the Ministry of Finance, which had been requiring it to present information queries and data requests through a centralised information pool without directly engaging with the entities involved (von Trapp and Nicol, 2018). The European Commission got involved in this conflict (European Commission, 2017) taking the AIReF's side and, as a result, the ministry corrected its initial stance, facilitating access to the required information (Ministry of Finance, 2017).

The second most frequent type of recommendation relates to budget stability, with nearly all of the recommendations made in this area taking the form of 'substantive recommendations' and therefore subject to the 'comply or explain' principle. The fourth category by volume of recommendations – those addressing financial sustainability – similarly consists almost entirely of 'substantive recommendations'. The third most popular category relates to budgeting procedures; in this instance the most common type of recommendation takes the form of 'guidance on good practice', *i.e.*, recommendations that do not require the recipient administration to respond in

Exhibit 1

Summary of recommendations issued by the AIReF between 2014 and 2016 by topic and recommendation type



Source: The authors, based on the AIReF's annual reports (2014 - 2016).

'comply or explain' format. Lastly, the fifth category, which addresses the spending rule, mainly features 'scope recommendations', indicating that the AIReF has encountered shortcomings in the information provided in terms of adequately appraising the matter.

As for the recipients of these recommendations, Table 1 breaks down the recommendations, opinions and guidance issued by the AIReF between 2014 and 2016 by recipient and year.

As the Table shows, the main recipient of the recommendations, opinions and guidance issued by the AIReF is the Ministry of Finance and Civil Service, to which this IFI is attached, accounting for over half of all the observations made. This in turn reflects the fact that it is the ministry that dictates the regulations and methodology governing a good part of the budget items for which the various administrations are then responsible. As a result, recommendations regarding fundamental regulations that apply to all administrations have to be addressed to this ministry. The recipient of the next highest number of recommendations is the Ministry of the Economy and Competitiveness, which is responsible for preparing the macroeconomic forecasts and economic scenarios underpinning the general state budgets and other financial planning tools. It is followed by the Ministry of Employment and Social Security. In fact, the recommendations addressed exclusively to the various ministries (the three listed above plus the Ministry of Education and Health) represent over three-quarters (77%) of all the recommendations issued by the AIReF during the period analysed.

After the ministries, the entities receiving the highest volumes of recommendations from the AIReF are the IGAE, Spain's general state comptroller, and the regional governments as a whole. Here it is worth noting that in several instances, the recommendations issued by the AIReF are addressed simultaneously to more than one institution, usually a ministry and one or more regional administrations.

Table 2 rounds out the analysis by sorting the AIReF's recommendations by topic and year. This table reproduces a selection of the key topics addressed in the reports issued by the AIReF between 2014 and 2016. Note that this is a partial selection in an attempt to exemplify the issues receiving the greatest attention in the institution's first three years in existence. The table and subsequent

Table 1 **Breakdown of the recommendations issued by the AIReF by recipient, year and type of recommendation**

Recipient / Type of recommendation	A. Scope recommendations			B. Substantive recommendations			C. Opinion-based proposal			D. Guidance on good practice			Annual total				
	2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016	Total	%
Min. of Fin and Civil Service	8	18	10	3	20	29	1			16	6	4	28	44	43	115	54.2
Min. of Employment and Social Security		1		2	3	1		5		4			6	9	1	16	7.5
Min. of Economy, Industry and Competitiveness			1		5	3				3	8	2	3	13	6	22	10.4
Min. of Education and Health										1			1	0	0	1	0.5
Min. Fin. & Min. Empl.		1			1	2							0	2	2	4	1.9
Min. Fin. & Min. Econ.	1		1	1								2	2	0	3	5	2.4
Nat. Stat. Office (INE), Nat. Comptroller (IGAE), Bank of Spain					2					1			1	2	0	3	1.4
Nat Stat. Off. & Min. Econ.			1										0	0	1	1	0.5
Min. Fin. & Reg. Govts. (all or several)		2				3				2			2	2	3	7	3.3
Min. Fin., Min Econ. & Reg. Govts.					1								0	1	0	1	0.5
Fiscal and Financial Policy Council					1					1			1	1	0	2	0.9
Accounting and comptroller bodies	1			1			2			5			9	0	0	9	4.2
Regional Govts. as a whole		1		2	2					2	2		4	5	0	9	4.2
Local Govts. (Barcelona, Cordoba, Madrid)						1							0	0	1	1	0.5
Aragon				1	2								1	2	0	3	1.4
Cantabria				1									1	0	0	1	0.5
Castile-La Mancha				2									2	0	0	2	0.9
Catalonia				1	2								1	2	0	3	1.4
Extremadura					1								0	1	0	1	0.5
Madrid					1								0	1	0	1	0.5
Murcia				1	2								1	2	0	3	1.4
Valencia				1	1								1	1	0	2	0.9
Total	10	23	13	16	44	39	3	5	0	35	16	8	64	88	60	212	100

Source: The authors, based on the AIReF's annual reports (2014 - 2016).

Table 2 **Main recommendations issued by the AIReF by type of recommendation and year (selection)**

	2014	2015	2016
'Scope recommendations'	SCO1. Lack of individualised information about the key lines of the regional governments' budgets	SCO5. Shortfall of data in national accounting terms for calculating compliance with the spending rule	SCO9. Guaranteed access to Ministry of Finance information in due time and form
	SCO2. Absence of data necessary to calculate compliance with the spending rule and its suitability vis-a-vis the borrowings targets of the subsectors (state, reg. govt., local govt.)	SCO6. Need to draw up initial budgets and liquidity forecasts in national accounting terms	SCO10. Publication of the models used in macroeconomic forecasting exercises (Min. of Econ.)
	SCO3 Need for individual stability targets and funding estimates by region (reg. govt)	SCO 7. Request for more information and better access to the data pertaining to the local governments, including the six largest city councils	SCO11. Greater transparency on the part of the Ministry of Finance in setting borrowing targets to regional governments
	SCO4. Need to establish a transparent and verifiable borrowings target system	SCO8. Need to include information about the pension restatement index in state budgets	SCO12. Application of corrective mechanisms when local governments breach their information requirements
'Substantive recommendations'	SUB1. Supplementation of economic-financial plans to ensure delivery of stability targets (regional govts.)	SUB5. Need to analyse each sub-sector's financial capacity in accordance with services provided	SUB9. Adoption of the decisions needed to balance the Social Security system
	SUB2. Computation of all of the extraordinary financing mechanisms within the initial borrowing limit set for the regional governments	SUB6. Need to develop a detailed regulation addressing the spending rule's calculation, application and procedure	SUB10. Reiteration of the recommendation to establish a procedure covering budget outturn oversight and early correction of deviations at the regional govt. level
	SUB3. Monitoring of Social Security budget outturn figures	SUB7. Establishment of differentiated and realistic deficit targets for the various regional governments for 2016 and 2017	SUB11. Establishment and supervision of a common governance framework for local govt. bodies
	SUB4. Formulation and publication of multi-year scenarios for the budgets prepared by all levels of government	SUB8. Publication by the Ministry of the Economy of the methodologies, assumptions and parameters underpinning its macroeconomic projections	SUB12. Realistic review of the transition period granted for complying with the borrowing target stipulated in the Stability Act (60% of GDP in 2020)

Source: The authors, based on the AIReF's annual reports (2014 - 2016).

> "In 2017, most of the recommendations issued by the AIReF continued to emphasise the importance of implementing preventative and corrective measures and the need to reinforce the consistency of the fiscal rules contemplated in the Stability Act."

analysis is limited to the two types of recommendations covered by the 'comply or explain' requirement, *i.e.,* 'scope recommendations' (SCO) and 'substantive recommendations' (SUB).

The first topic that stands out relates to the numerous references to the gaps encountered by the AIReF in attempting to compile the information it needs. Warnings about the lack of information are continuous and affect virtually all levels and sub-sectors of government (see for example SCO1, SCO2, SCO5, SCO7, SCO8, SCO9, SCO11, SUB3).

Related with this issue, the analysis also reveals the requests addressed by the AIReF, mainly to the ministries, asking for better explanations of the methodologies used to prepare the forecasts, models, etc. that are in turn used as the basis for setting budget targets (SCO4, SCO10, SCO11, SUB8).

Here it is worth underscoring the emphasis placed by the AIReF on the 'spending rule' stipulated in the Stability Act, highlighting the difficulties encountered in making it work in practice. The AIReF has repeatedly alerted the Ministry of Finance about the need to develop a methodology and a practical manual for its calculation and the advisability of setting up dedicated taskforces to address this issue within the Fiscal and Financial Policy Council and National Local Government Committee (SCO2, SCO5, SUB6).

Another relevant and recurring issue during the AIReF's first years in operation, and an area in which it has defended a different stance to that taken by the government, is the need to set different deficit targets for the different regional governments (SCO2, SCO3, SCO11, SUB5, SUB7). The AIReF is of the opinion that, given the differences among the various regional governments in terms of starting positions and medium-term scenarios, it would be advisable to set different and specific targets for each region with the aim of rendering them more feasible and credible (refer to Escrivá, Janeba and Langenus in Beetsma and Debrun, 2018). Related with this point, the AIReF has also repeatedly manifested the need to design and effectively apply preventative measures in order to prevent target breaches, particularly at the regional and local government levels (SCO12, SUB10, SUB11).

Other topics often raised in the AIReF's reports include the need to revise the roadmap for delivering on the public borrowing target of 60% of GDP by 2020 in order to make it more feasible and credible (SUB12); the recommendation to have initial budgets and liquidity forecasts drawn up at the national accounting level (SCO6); the advisability of drawing up and publishing multi-year budget scenarios at all levels of government (SUB4); and the need to take measures designed to balance the Social Security system's finances (SUB9).

By way of a brief footer, note that in 2017, most of the recommendations issued by the AIReF continued to emphasise the importance of implementing preventative and corrective measures and the need to reinforce the consistency of the fiscal rules contemplated in the Stability Act.

Summary of the independent assessment of the AIReF: OECD report of 2017

In November 2017, the OECD published a review of the AIReF (von Trapp *et al.,* 2017). This assessment, committed to by the President of the AIReF, was undertaken by a group of five independent experts (two members

Table 3 **Level of compliance by the AIReF with the OECD's principles for IFIs**

(OECD, 2014)

OECD principle	Score	Maximum
1. Local ownership	2	2
2. Independence and non-partisanship	6.5	7
3. Mandate	3	3
4. Resources	0.5	3
5. Relationship with the legislature	2.5	3
6. Access to information	1	2
7. Transparency	3.5	4
8. Communication	1	1
9. External evaluation	1	1
Total	21 (80%)	26

Note: In the table above the following scores are assigned to the various assessment levels: Positive assessment ('Yes') = 1; negative assessment ('No') = 0; Partial assessment ('Partial') = 0.5.

Source: Adapted from Table 1.2 of von Trapp et al. *(2017).*

of the Budgeting and Public Expenditures Division of the OECD's Directorate for Public Governance, two experts on independent fiscal institutions from the Netherlands and the United States and one Spanish academic peer) following the OECD's own methodology (OECD, 2014).

In general terms, the assessment concludes that in the first years of operation the AIReF has consolidated its independence.

As for its structure, specifically the extent to which AIReF complies with the OECD's principles for the creation of independent fiscal institutions (IFIs), the review scores of the AIReF are shown in Table 3. The AIReF's level of compliance with the OECD's criteria is essentially high (total in some instances) and only below 50% in the area of resources. In the case of resources, the reasons for the low score are threefold, according to the OECD: (a) AIReF's already broad mandate is expanding with the risk of adding challenges to AIReF's limited resources; (b) the Ministry of Finance makes changes in AIReF's budget without consulting the agency; (c) there are no multiannual funding commitments, which might further enhance the independence of the AIReF.

Despite the AIReF's strong start, the report flags three major challenges facing the institution:

- The difficulties encountered in terms of access to the information needed to do its job. The review recommends, in line with international best practice, governing the relationship between the AIReF and the Spanish government by means of a memorandum of understanding.

- The need to balance its ambitions and stakeholder demands for new work (or extending the scope of its existing duties) against its budgetary and staff constraints. The OECD recommends that the AIReF avoid taking on additional tasks unless it is given commensurate resources to undertake these tasks.

- Only around one half of the AIReF's recommendations have been complied

with. Indeed, the OECD report observes a significant difference in the pattern of responses by the central government relative to the sub-national (regional and local) governments. Whereas the central government opts to explain its non-compliance more often (62% of the recommendations received) than it chooses to comply (38%), at the sub-national government level, the pattern is exactly the opposite. Here is worth noting that compliance levels vary by region (Cantabria, Andalusia, Aragon, Castile and Leon and Valencia being more inclined to 'comply' and Madrid, Navarre and Catalonia being more inclined to 'explain'). Refer to Figure 4.6 of the Review.

Beyond these key points, the Review makes 20 detailed recommendations grouped into four categories: inputs (6 recommendations); methodology and outputs (5); efforts at the sub-national level (3); and impact (6).

Regarding recommendations about inputs, the OECD suggests that AIReF "should avoid taking on additional tasks unless they are given commensurate resources to undertake these tasks with in-house staff" and that it "should use outside contractors sparingly". The OECD recommends that the AIReF, the ministries and other relevant public administrations "work collaboratively to develop a memorandum of understanding on access to information, establishing which information AIReF need to fulfil its mandate and a mutually agreeable and collaborative process for information requests".

In terms of methodology and outputs, the OECD report suggests that the AIReF could release projections for medium-term periods of three to five years; so far, the majority of AIReF documents are focused on the current and the upcoming year. It is also recommended that the AIReF releases more details about its economic and budgetary estimates and not only high-level summaries of the issues. Along the same lines, the OECD suggests the possibility that the AIReF examines the accuracy of its own projections and "whether there have been any significant biases in its own or the government's forecasts", as well as the possibility of analysing the reasons for these biases.

As far as subnational governments are concerned, the OECD recommends the AIReF "focus on improving the quality and deepening the reach of existing regional and local analysis". In terms of impact, the OECD report contains the recommendation that the "AIReF should pursue a strategy of increased selectivity regarding its comply-or-explain recommendations with the aim of emphasising and focusing on its most important messages in subsequent dialogue with relevant administrations and in its public follow-up". In this respect, the AIReF is also advised to "periodically undertake stakeholder satisfaction surveys for key stakeholders groups such as parliamentarians and academics".

Conclusions

The AIReF in its first years in operation has helped to support progress on budget stability and enhanced fiscal governance in Spain and the EU by increasing the reputational costs of those public administrations which are not fiscally responsible.

Judging by the criteria used most commonly to assess the effectiveness of independent fiscal institutions, the AIReF is endowed with an institutional design and mandate that are in line with international best practice. In terms of its performance, in its early years it has established a reputation for independence from the Executive. When it has considered it necessary, the AIReF has taken different positions to those of the Ministry of Finance to which it is attached, prompting the latter to alter its initial stance on occasion. This independence provides a good foundation for reinforcing the fiscal framework in Spain and, by extension, the EU.

Beyond this procedural matter, the AIReF's reports have highlighted two key matters of substance. Firstly, the need to find a better formulation, meaning a more user-friendly and effective one, of the spending rule stipulated in the 2012 Budget Stability Act.

Secondly, the recommendation that the one-target-fits-all strategy applied to the regional governments should be revised.

Indeed, it can be said that the first steps taken by the AIReF have helped unearth some of the limitations of the 2012 Act and provided strong arguments in favour of its reform (Kasperskaya and Xifré, 2018). In this respect, our conclusions highlight the necessary complementarity among all elements (laws, institutions, political will) to achieve fiscal sustainability.

Lastly, the AIReF still faces noteworthy challenges, including accessing the necessary information to do its job, as well as maintaining the independence and professionalism that have characterised its conduct during the initial years. It would be advisable to think carefully before expanding the scope of its activities if it is not possible to guarantee the provision of sufficient resources. It would also be useful for the wider public if the AIReF released more details on the methodology and assumptions under which it prepares its own estimates and assesses budgetary projections by public administrations and reported on their activity in a timely and more user-friendly way.

That said, the reputational capital and credibility earned by the institution since 2013 are an important asset for the good of fiscal stability in Spain and the broader EU.

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The potential impact on Spain from recent protectionist measures

Recent US trade measures raise the risk of heightened protectionism. Spain's increased integration into the global value chain leaves the country exposed to the potential impact from such measures in key sectors should their introduction bring about a slowdown in global trade.

Nereida González and Diana Posada

Abstract: The recently announced tariffs by the US and China exemplify a paradigm shift in the era of globalisation. Although Spain has not engaged in the protectionist rhetoric, at least for the time being, it is relevant to analyse its role in global production chains and the potential channels for economic contagion. Spain's integration in cross-border production processes is concentrated in the sectors of greatest importance for manufacturing exports, namely the automotive, agro-food, textile, machinery and chemicals industries. The impact of the mainstreaming of protectionist measures would come, mainly, via those sectors and could be meaningful in light of their importance in terms of job creation and investment.

Introduction

Globalisation has unquestionably been one of the driving forces behind global

> “Recent protectionist measures announced by the US further evidence the retreat from globalisation observable since the 2008 crisis.”

economic growth in recent decades, helping, among other things, to reduce the income gap between developed and developing economies. The elimination of international trade barriers gained traction from the 1950s following the signature in 1947 of the General Agreement on Tariffs and Trade (GATT), which would later become the World Trade Organisation (WTO). As a result, growth in global trade flows was twice that of GDP until 2008. The reduction of protectionist barriers also facilitated growth in cross-border ties between the various economies via the formation of global value chains, which also led to increased productive specialisation by these distinct economies.

Nevertheless, it remains necessary to make further progress on trade liberalisation, particularly in certain areas such as the agricultural sector, where the developed economies are highly protectionist. The manufacturing industries, meanwhile, are more liberalised, although those intensive in manpower continue to be protected by high barriers in many countries. Elsewhere, non-conventional protectionist measures (such as anti-dumping) have gained ground.

Despite the intense pace of liberalisation, the growth in global trade has slowed significantly in recent years. Since the economic-financial crisis of 2008-2009, annual growth in the volume of trade in goods and services has averaged 2%, well below the average of 6% observed during the two preceding decades. Among the factors that may be explaining this slowdown is the uptick in protectionist measures, coupled with a halt in trade liberalisation agreements, a slowdown in the formation of global value chains and low investment rates. This trend could accelerate if the steps towards greater trade restrictions being put in motion by the United States ultimately materialise. In recent months, the US has announced protectionist measures affecting different products of increasing relevance, prompting in-kind responses by the countries affected.

At the beginning of the year, the US announced the imposition of tariffs on solar panels and washing machines, with the goal of boosting national industry. It was a widespread measure, applicable to all countries, albeit of limited impact given the scant materiality of these products in US trade: they account for less than 1% of US imports.

One month later, the Trump administration announced fresh tariffs, this time on steel and aluminium imports. The announcement marked an important quantitative leap, insofar as these products represent around 2% of US imports. These measures initially implied a major impact for the exports from countries such as Canada, Brazil and the Eurozone, the US's key suppliers of these commodities.

However, the ultimate impact was reduced as all countries have been (temporarily) exempted except for China, to which the new tariffs have been in effect since March 23rd. That same day, China announced tariffs on US imports (products such as wine, fresh fruit, etc.) for an import value equivalent to that represented by the steel and aluminium imported by the US from China: 3 billion dollars.

In the following days, a series of threats of additional tariffs ensued: the US at one point was threatening tariffs on 150 billion dollars of Chinese imports, focused on intellectual property goods, with China responding in kind.

At the time of writing, the negotiations between the various countries (China and the US and the US and the rest of the countries that are, temporarily, exempt) remain ongoing. The outcome of these negotiations will tell whether the threat to foreign trade dissipates, remains a point of contention between China and the US only, or extends to other countries.

Table 1

Summary of the protectionist measures announced by the US in 2018 and the responses from China*

Tariff	*Solar panels (30%) and washing machines (50%)*	*Steel (25%) and aluminium (10%)*	*Intellectual property (25%)*	*Tariffs on $100bn of Chinesse imports*
Announcement	January 22nd	February 28th	March 23rd	April 6th
Justification	Stimulus to the national industry	National security	Copyright laws	China's response is unfair
Enforcement	February 7th	March 23rd	Period of negotiation extended to June 1st	Period of negotiation extended to June 1st
Exemptions	Emerging and elegible countries*	Temporary (due at the beginning of May): CAD, MXN, UE28, AUD, ARS, BRL and KRW	China as target	China as target
China's response	-	Announcement of equivalent tariffs ($3bn) on imports from USA such as wine, fruit, dried fruit… Complaint filed to WTO	Announcement of equivalent tariffs ($150bn) on imports from USA such as soy, automotives, airplanes...	China studies the possibility of guiding a gradual devaluation of the CNY

** For further information: https://ustr.gov/sites/default/files/gsp/Beneficiary%20countries%20March%202017.pdf*

Sources: Afi and other sources.

Against this backdrop, it is relevant to assess the vulnerability of the Spanish economy by analysing its role in the global production chains in a world in which economies have become increasingly integrated in recent years.

Spanish exports are highly concentrated in strategic sectors

The Spanish economy's goods trade deficit would appear to have stabilised at around 25 billion euros since the start of the economic recovery, although it is worth noting the sharp dependence on oil imports. In fact, the non-energy account is virtually balanced, in contrast to a deficit of over 60 billion euros in 2007. This correction was enabled by an extraordinary performance of the exports of goods (whose weight in the economy has increased by nearly six percentage points to 24% of GDP) compared with a more moderate growth in imports. As a result, the trade openness ratio (goods) has increased from 44% of GDP at the start of the crisis to almost 50% today. The significance of this increase lies with the fact that it has been driven essentially by the growth in trade.

> "One of the characteristic traits of Spanish exports of goods and services is their high concentration by sector and geography; although, Spanish exports have become more diversified in recent years."

Within exports, in 2017, it is worth highlighting the sale of machinery and equipment goods (20% of the total), food, beverage and tobacco products (16.5%), the automotive sector (16.3%) and chemical products (14%). However, a more detailed breakdown reveals how concentrated goods exports really are. Around 40% are distributed between a few sub-sectors: the automotive sector (vehicles and parts), which accounts for 16% of the total, followed by fruits and vegetables, at 6%, similar to the weight commanded by textiles. Lastly it is worth singling out exports of equipment for industry and transportation (almost 11% on aggregate).

As for imports, energy products represented 13.4% of the total. The energy sector is followed by the automotive sub-sector (13% of the total), textiles (7%) and industrial equipment (5.6%).

This relative symmetry between exports and imports of goods is one indicator of the extent of the Spanish economy's integration into the global value chains.

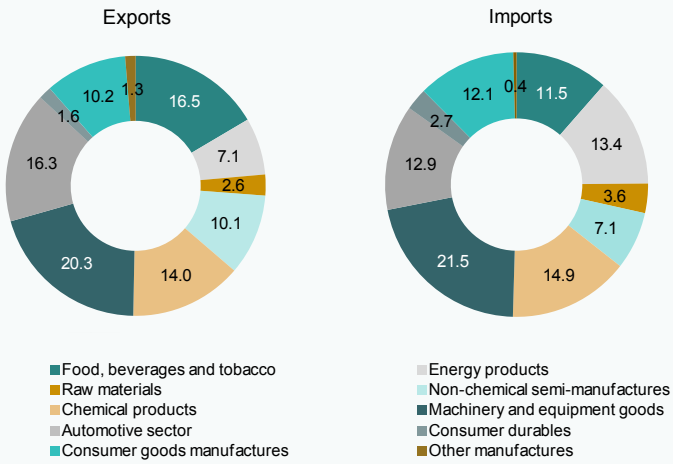
Elsewhere, the surplus in the trade of services has widened notably in recent years (from 3% of GDP in 2007 to nearly 5% in 2017). This increase is not only the result of a strong performance across tourism-related exports (around 50% of total) but also healthy momentum in non-tourism services. The burgeoning weight of non-tourism service exports represents one of the most significant changes in the Spanish economy since the economic crisis of 2008.

By class of activity, business services represent nearly one-third of all non-tourism service exports, led by technical services, related mostly to engineering activities but also trade-related (22%), professional and management consultancy services (9%) and R&D services (2%). Transportation, maintenance and repair services account for 29% of non-tourism service exports; telecommunications, computer and data services represent 17%; and financial, insurance and pension services account for 11%. Other sundry services, including construction-related services, account for the remaining 10%.

Another characteristic trait of Spanish trade is its significant exposure to certain markets. Over 65% of all exports go to economies within the European Union, the top destinations

Exhibit 1 **Exports and imports of goods**

(% of total, 2017)



Source: Ministry for Economy, Afi.

being France, Germany and Italy. The flip side of the coin is that the bulk of imports also come from this region. Outside the EU, Spain's main trading partners are the US, China and Morocco.

Spain's integration into global production chains is concentrated in manufacturing exports

Spain has not been apart from the growth in global value chains in recent decades. This is evident in the significant symmetry between the main exporting and importing sectors, as well as the significant percentages of intermediate goods in exports and imports, as noted above.

The advent of these value chains has permitted the fragmentation of the process of producing a given good or service among different economies. The rise of these chains has been facilitated by the drop in transportation costs, technological changes and the liberalisation of global trade. In many instances, the formation of these chains has segmented the more value-added tasks involving more highly skilled jobs, which remain in the more advanced economies, while the more labour intensive and less value-adding steps have been offshored to developing economies. Against this backdrop, bilateral trade relations have lost relevance in terms of analysing trade flows between countries, while analysis of the cross-border integration of countries in global production processes has become more important.

An analysis of the Spanish economy's participation in the global value chains can help us better understand the correlations between exports and imports. One way of measuring this integration is by means of the foreign value added (FVA) content of the goods and services exported. The higher the percentage of FVA embedded into these goods, the higher a country's integration into the global value chains. Another measure of trade in value added (TiVA) is the percentage of imported intermediate inputs used for exports (re-exports) [1], the larger the volume of re-exports the more integration in the GVC.

The Spanish economy's participation in global value chains has increased substantially in recent years, in line with the rest of the Eurozone member states. According to the OECD [2], the percentage of FVA embedded in exports increased by over five percentage points between 1995 and 2011 to 27% (Exhibit 2). In the case of the Eurozone, the trend is similar: from 19% in 1995 to 26% in 2011. In this same vein, re-exports of intermediate goods have been steadily increasing in recent decades (from 30% of all intermediate goods in 1995 to 41% in 2011).

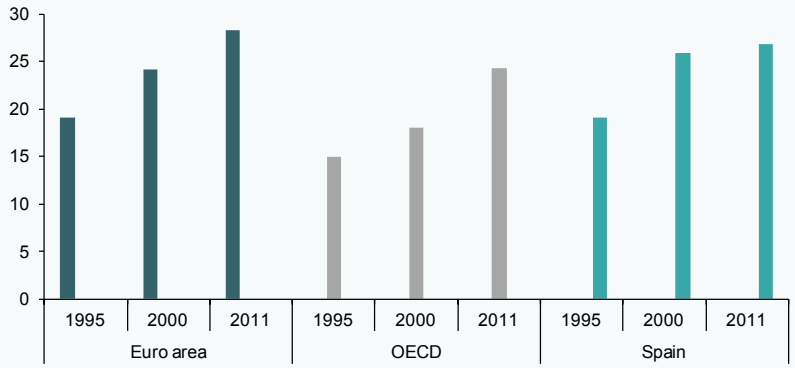
At the sector level, manufacturing goods exports are the most integrated in the global value chains, presenting a FVA of 37% and re-exports of 44%. Meanwhile, services tend to be far less tradable and those that are, are less fragmented. The FVA content in this sector stands at 14% (Exhibit 4).

It is worth highlighting the significant role played by the specialisation of the manufacturing industry in the economy's integration into the global value chains. Thus, the FVA content of automotive sector exports is over 40%, while the re-export of imported intermediate inputs stands at 65%. This sector and the chemicals industry (FVA content: 45%) are the most integrated in the cross-border production chains. The chemicals industry also stands out for the speed of its integration into these processes (the FVA content embedded in the sector's imports increased by nearly 10 percentage points

> "As in other countries, the liberalisation of global trade and the reduction in transport costs in Spain has led to greater fragmentation of production chains, which increasingly involve different countries."

Exhibit 2

Foreign value added content of exports from Spain, the Eurozone and the OECD



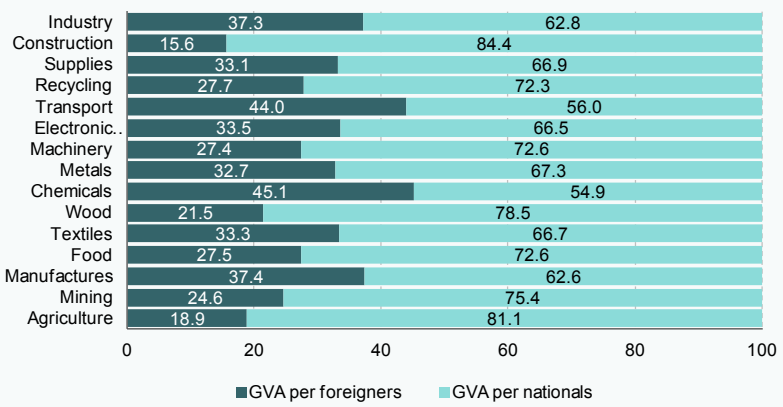
Source: OECD, Afi.

between 2000 and 2011). Other strategic sectors such as the food and textile sectors also present an increasing amount of FVA contents in their exports.

In short, the snapshot of the flows of goods traded by Spain suggests that not only are its exports highly concentrated sector-wise (recall that almost 40% of all exports correspond to vehicles and vehicle parts, fruits and vegetables, textiles and equipment) but that these exports are in many instances part of cross-border production processes. In contrast, the surge in the export of services –tourism and non-tourism services – has taken place with less involvement in the global value chains.

Exhibit 3

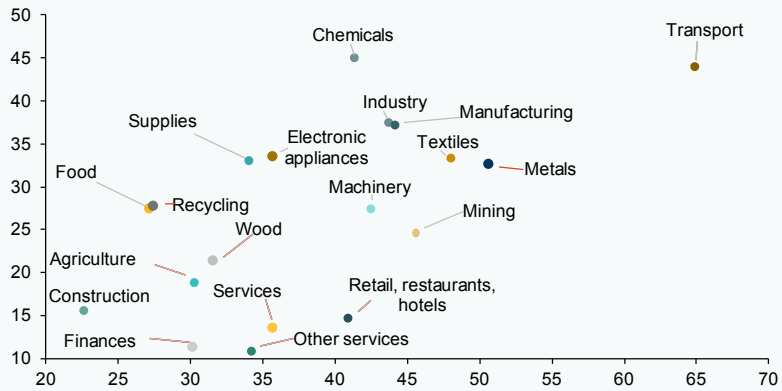
Origin of value added in Spanish exports by source country (2011)



Source: OECD, Afi.

Exhibit 4

FVA as a % of total exports and re-exports of intermediate inputs as a % of total sector exports (2011)



Source: OECD, Afi.

Increased restrictions on trade flows could adversely impact growth

In the current environment, it is particularly important to analyse the possible implications for the Spanish economy of an increase in restrictions on international trade flows. Any measure that ultimately impacts final consumer goods or the inputs used in the global value chains in which Spain is more integrated could have an adverse impact on the country's growth. The automotive industry, for example, generates nearly 10% of all industrial jobs (almost 250,000 jobs) and 10% of total value added; it also presents an investment ratio of close to 16%. In addition to the direct impact on activity, jobs and investment, there would be a knock-on effect as a result of the impact on the auxiliary sectors that depend to a large extent on the automotive industry.

In addition, the food industry (whose exports account for 16% of the total) generates nearly 19% of all industrial jobs and 15% of GVA, while its investment ratio is 21%. Lastly, the textile industry, another strategic sector, is responsible for 4% of industrial jobs and its investment ratio is 9%.

For now, the focus of the negotiations between the EU and the United States is on the automobile sector. The United States wants to improve the access its vehicles have to the EU common market. Currently, imports of American cars are subject to a tariff of 10% compared to 2.5% on European cars in the United States. It should also be remembered that the United States is the EU's main trading partner with 17% of total exports, of which almost half are linked to the automotive and transport equipment sector.

However, it is important to remember that the greater the integration of Spanish firms into the global value chains, the harder it is to implement protectionist trade measures on account of the difficulty in finding substitutes for the intermediate inputs used in them, among other things.

Conclusions

Protectionism has reared its head on the international policy agenda. After decades of progress on the liberalisation of trade and elimination of trade barriers up until the financial crisis of 2008, there is a risk of heightened protectionism which is being spearheaded by the US.

The Spanish economy is exposed to any increase in restrictions on trade flows in the event they materialise.

A glance at the export and import figures fails to reveal the complexity underpinning those flows. Indeed, in many sectors, the value chain is fragmented at the global level, which means that Spanish companies depend to a significant extent on the import of intermediate inputs produced abroad and, vice versa, the foreign exporters also embed intermediate products made in Spain into their final products. This so-called integration of the global value chains has gained importance in recent decades. As a result, the interruption of those production chains would harm foreign enterprises, domestic enterprises and end consumers. That being said, the greater the integration into the global value chains, the harder it will be to implement protectionist trade measures.

In Spain, the integration in cross-border production processes is concentrated in the sectors of greatest importance for manufacturing exports, namely the automotive, agro-food, textile, machinery and chemicals industries. On aggregate, these sectors account for nearly 40% of goods exports and 40% of industrial job generation. In addition, some of these sectors present high investment ratios.

As a result, the impact on the Spanish economy of widespread application of protectionist measures would be transmitted via these channels and could be significant in the event that the measures adopted bring about a slowdown in world trade.

Notes

[1] Re-exports of imports imply the export of an intermediate good that includes or transforms a previously imported intermediate input.

[2] Trade in value added reported by the OECD. Latest data as of 2011. http://stats.oecd.org/Index.aspx?DataSetCode=TIVA_2016_C1

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Spain's gender pay gap and gender bias in a reduced workweek

Despite recent progress, Spain continues to demonstrate a sizeable gender pay gap, albeit similar in magnitude to neighbouring countries. Further narrowing this gap will entail both a policy response, as well as likely reliance on emerging technologies.

Daniel Fernández Kranz

Abstract: Cyclical and structural factors (*i.e.,* uneven sharing of childcare responsibilities) underpin a continued gender pay gap in Spain – with women's salaries ranging between 19% and 30% less than their male counterparts, but in line with that of other neighbouring EU countries. Spanish Law 39/99 on Work-Life Balance was one of the most ambitious pieces of legislation on the global level in attempting to regulate work hour flexibility for family reasons, granting both male and female employees under this contract a high degree of flexibility and protection against dismissal. In practice, however, woman account for over 95% of employees taking advantage of such contracts. Thus, the law has failed to reduce the gender gap in terms of taking shorter and more flexible working hours, as well as created

a rift between women protected by this type of contract and those who are not, whether because they do not have children of qualifying age (under 12) or because they work under temporary contracts. Going forward, reducing the gender gap will entail: (1) an increase in male burden sharing in childcare responsibilities; and, (2) a reduction in the cost of offering working hour flexibility, possibly with the help of reliance on new technologies.

What we know about the gender gap: The evidence

The gender pay gap (the difference between what men and women earn) has been the recent focus of social and political debate. The gender pay gap in Spain is similar to that of other neighbouring countries. The estimates vary depending on the method and database used. For example, measured in terms of average gross annual earnings, women in Spain earn between 19% and 30% less than their male counterparts – Conde and Marra (2016), De la Rica (2012) and González (2017), among others. González (2017) uses data from the so-called Wage Structure Survey and estimates a gap between the median gross annual earnings of men and women of 19 points in 2006, narrowing to 13 points by 2014. The fact that the gender gap narrowed during the Great Recession is not exclusive to Spain. A similar trend is observable in other countries in the vicinity and may be attributable to the fact that the economic crisis destroyed many relatively unproductive male-dominated jobs, a phenomenon not fully offset by the entry of women into the workforce to replace their partners (Dolado *et al.,* 2017) [1].

Beyond the trend attributable to cyclical factors, the gender pay gap stems from a series of structural factors. There is a bounty of academic research into the causes of the differences between what men and women earn (Blau *et al.,* 2013). In general, the research finds that the gender pay gap cannot be fully explained by the characteristics of working women such as their level of education or experience. In Spain, for example, the higher average level of education presented by the women in the workforce should result in a lower pay gap but their reduced work experience has the opposite effect, such that these two factors cancel each other out (González, 2017). There is a growing body of opinion, underpinned by empirical evidence, that a significant portion of the pay gap is due to the fact that women are over-represented in jobs and companies offering low salaries, coupled with the fact that those companies offer more flexible working hours relative to the rest (Golding, 2014). The literature has not been able to demonstrate whether this unfavourable segregation of women is the result of a voluntary choice (preferences), the result of discrimination on the part of employers (*e.g.,* at the time of hiring) or the result of the different roles adopted by men and women in the home, perhaps pushed by social norms and prevailing traditions. What is certain is that there is a very high correlation between the advent of the gender pay gap and maternity (Goldin, 2014), which has given rise to the concept of the 'family pay gap'; indeed, there is even evidence that women earn more than men before the birth of their first child [2].

Thus, a significant aspect of the gender pay gap is the higher percentage of women in part-time work after the arrival of their first-borns. While it is true that part of the high rate of part-time work among women in Spain is involuntary (the inability to find full-time work) [3], it is similarly true that the percentage of people who take part-time work for family reasons is overwhelmingly female.

Several studies show that part-time work results in a penalty or handicap not only

> "This pernicious dynamic of part-time work, lower hourly wages and higher instability, ends up trapping women in this kind of work, making the transition to full-time work increasingly less likely."

in terms of gross annual salaries but also in terms of hourly wages. The latter component of the pay handicap is partly attributable to the relatively slower accumulation of work experience while working part-time which persists even if these women later return to full-time work [4]. Moreover, it has been estimated that part-time work is generally linked with higher job instability in terms of both contracts (temporary) and episodes of unemployment (higher in number). This pernicious dynamic ends up trapping women in this kind of work, making the transition to full-time work increasingly less likely.

However the gap between male and female pay cannot be explained solely by the fact that more women work part-time than men: even comparing male and female pay for full-time work there tends be a wage gap in favour of the men. Several studies have demonstrated that not all full-time jobs are equal and that women tend to focus on jobs that offer working hours that are more compatible with work-life balance objectives. In the United States it has been estimated that the concentration of women in jobs with lower salaries only explains 15% of the gender pay gap, while the concentration of women in companies with less demanding and more flexible working hours, but that pay less, explains a far higher percentage. This is to say that women and men with similar levels of education and even performing similar work end up earning very different amounts because the men work in companies with more demanding working hours that pay more per hour worked (Betrand *et al.,* 2010).

In a recent study into the difference between the hourly wages earned by male and female drivers at Uber in the United States (Cook *et al.,* 2018), the authors found that the female drivers earned approximately 7% less than their male counterparts. Although that difference may seem small, it is important to underscore that we are talking about the same company and the same job. Furthermore, the study focuses on hourly wages, correcting therefore for the differences in the number of hours men and women work. What's fascinating about this study is that it was conducted in a context in which the existence of discrimination against women can be ruled out with a high level of confidence as the formula used by Uber to remunerate its drivers is 'gender blind', *i.e.,* it does not take into consideration whether the driver is male or female but rather depends on purely objective criteria such as the distance travelled or the time taken to perform the service. In addition, on the consumer side of the equation, the authors demonstrated that the level of user acceptance of the service was the same whether it was to be provided by a man or a woman. The authors managed to explain the entire pay gap by three factors. Some fifty per cent was due to the fact that the women drove different routes and at different times of the day than the male drivers, both the routes and times of day in question being less lucrative. For example, there are fewer female drivers on one of the most profitable routes, early morning trips to the airport. The other 50% of the pay gap was explained in equal amount by the following two factors. Firstly, the female drivers are less experienced than their male counterparts because they work fewer hours a week than the men and also because they take more time off than the men [5]. Secondly, the women drive more slowly than the men, so that they complete fewer services than the men per hour. In short, two-thirds of the pay gap is explained by factors related to the women's working hours which differ from those of the male drivers and results, via different channels, in lower pay per hour.

> "Female participation in domestic chores, in particular childcare, prevents them from participating in the workplace under the same conditions as men, creating working hour restrictions that translate into a pay handicap."

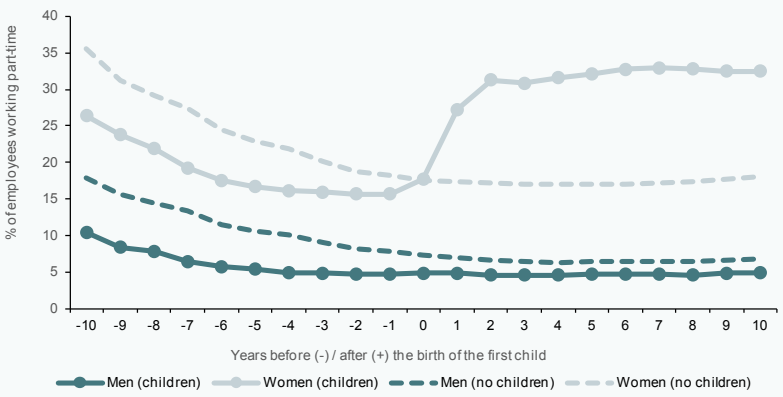
This recent study, therefore, suggests that female participation in domestic chores, in particular childcare, prevents them from participating in the workplace under the same conditions as men, creating working hour restrictions that translate into a pay handicap. The rest of this paper describes the incidence of flexible working hours on men and women in Spain before and after the birth of their first child, going on to focus on what is perhaps the most important piece of legislation in Spain in terms of facilitating work-life balance: Law 39/99 (November 5th, 1999), which regulates and protects the right of men and women to reduce their working hours to care for young children.

Part-time work in Spain and childcare

By way of an initial approximation of the relationship between part-time work and childcare, Exhibit 1 shows the percentage of men and women working part-time as a function of the number of years before and after the birth of their first child. And by way of comparison, we also show the percentages for men and women without children, measured using the same age intervals as for the men and women with children. The data comes from the Continuous Work History Sample (CWHS) and covers the years from 2005 to 2015 and individuals aged between 16 and 45. In all instances the percentage of men working part-time is lower than that of women. However, the difference between the two genders increases after the birth of their first child. The percentage of women working part-time doubles between year one and two after the birth of their first child, increasing from 15.7% one year before the arrival of their firstborns to 31.3% two years on. In contrast, the percentage of men working part-time remains steady at around 4.8%. The comparison with the series corresponding to individuals of the same age without children reveals a downward trend in the incidence of part-time work over time for both men and women. There is, however, a gap between men and women that is virtually constant at around 11 percentage points. Both the men and women with children initially present a lower incidence of part-time working arrangements than the men and women who are not going to have children. This gap continues to be observed over time, albeit narrowing, in the case of the men. But in the case of the women it inverts, with the percentage of mothers in part-time work outstripping the percentage of women without children. On the whole, although it is true that more women without children work part-time than men

Exhibit 1

Incidence of part-time work by years before and after the birth of the first child (CWHS, 2015)



Source: Authors own elaboration based on CWHS data (2015). From 2005-2015 for individuals aged between 16 and 45.

without children, the difference virtually triples after the birth of the first child, going from 11 percentage points one year before the arrival of the firstborn to 28 percentage points five years later.

In short, Exhibit 1 corroborates what we already know from other data sources: the women assume the primary role, relative to men, in caring for their young children and this has an evident impact on the labour market.

Reduced working hour contracts to care for young children (Spanish Law 39/99)

On November 5th, 1999, the Spanish government passed Law 39/1999 on the promotion of work-life balance, legislation still in effect today. This piece of legislation is one of the most ambitious in the world in attempting to legislate working hour flexibility for family reasons in terms of its scope and depth. This law permits all salaried employees with children under the age of 12 to reduce their full-time working hours by between one-eighth and one-half, with a proportionate reduction in salary (with the exception of additional pay benefits) [6]. The reduction in work day does not affect the number of days of vacation the person availing of the measure is entitled to, their jobless claims coverage or, during the first two years, their retirement, disability, widowhood or maternity benefits. After the first two years the last four benefits are reduced proportionately to the reduction in working hours. Employees can decide what hours they want to work and are entitled to change their working hours freely, including the total number worked, by giving two weeks' notice in writing. Even if it is the employer that usually determines the work shifts, the employee can choose his or her shift.

In order to prevent companies from turning down such requests, the law prohibits firing any worker who has previously applied to reduce their working hours on account of family responsibilities. Employers are obliged to rehire any such employees into their previous jobs, settle any back pay, lawyers' fees, expert witness fees and other court costs. Protection is, therefore, very high; indeed, it is even higher than that afforded under standard indefinite employment contracts. However, this protection applies *de facto* to employees on permanent contracts: if a company does not want to accept an application made by an employee on a temporary contract, all it has to do in practice is to not renew the contract when it terminates (or not transform it into an indefinite contract), an opportunity that generally presents itself in a relatively short period of time [7].

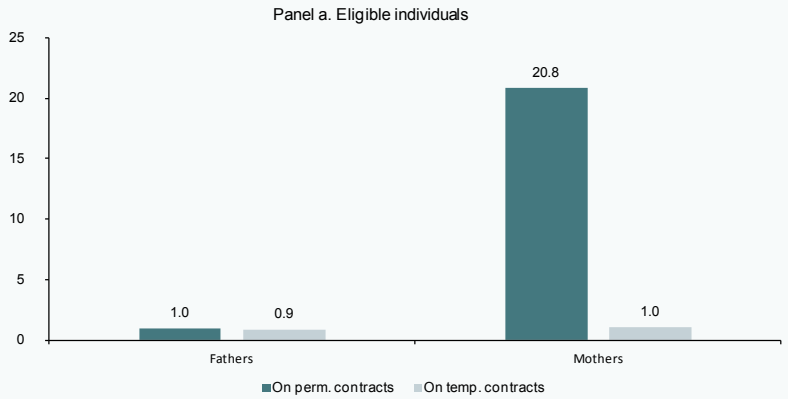
The law is worded to entitle both fathers and mothers to avail of the option of reducing their working hours for family reasons. In theory, it is designed to reduce the differences between men and women in working hours and work-life reconciliation, particularly considering the strong protection afforded employees availing of this contractual arrangement, whether male or female. However, Exhibit 2 illustrates how in practice virtually only women avail of this contractual option. Moreover, they only do so when they are protected by a permanent contract. Panel (a) of Exhibit 2 shows that 20.8% of all eligible mothers – *i.e.,* those with children under the age of 12 – in fixed employment are working under the reducing working hour contract regulated in Law 39/99 (47.6% measured as a percentage of all eligible mothers working part-time; Panel (b)). The incidence of eligible men availing of this formula is virtually nil, at just 1.0%. As remarked earlier, the guarantees provided under Law 39/99 are effective in practice only if the employee is protected by an indefinite contract. This is evident in the fact that less than 1% of eligible fathers and only 1% of eligible mothers avail of this contractual arrangement when they hold temporary contracts.

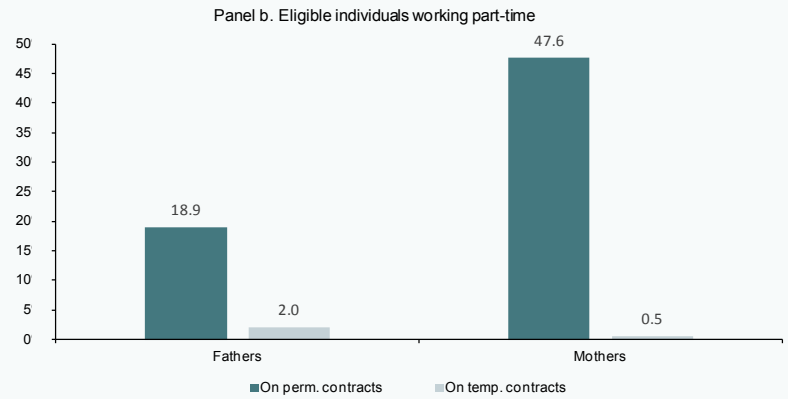
As for the minimum reduction in working hours (one-eighth of the total), shown in Panel (c), it is surprising that the men top this particular ranking, accounting for nearly half of all the working hour reductions in this category. In short, not only do men opt for the reduced working hour arrangement for family reasons far less often but when they do they tend to reduce their hours by the minimum amount. In the case of the women,

Exhibit 2

Individuals on reduced working hours for childcare purposes (CWHS, 2015)

Percentage





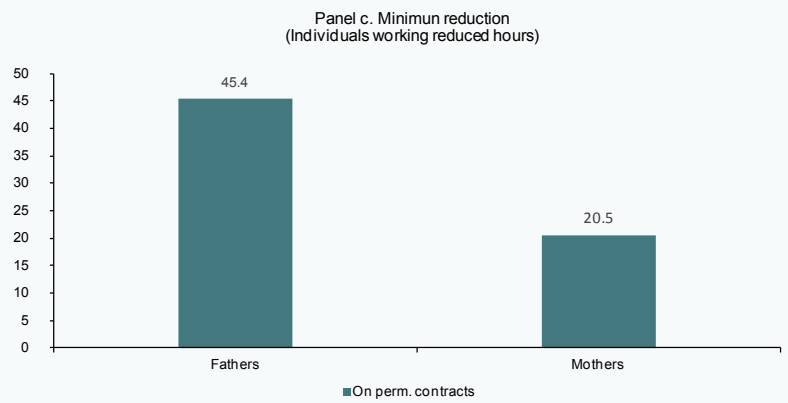
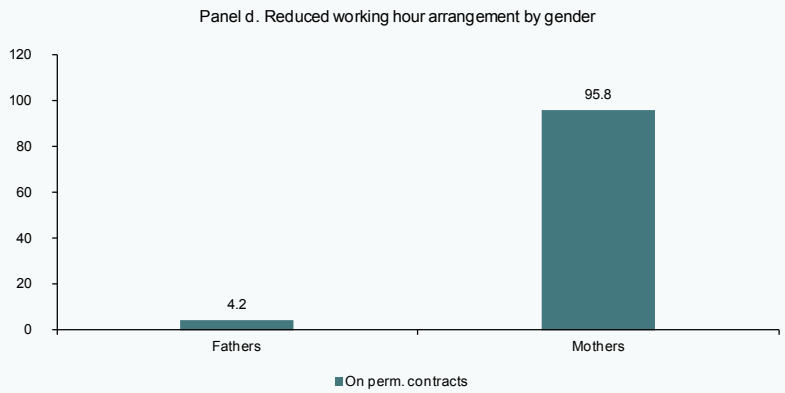


Exhibit 2

Individuals on reduced working hours for childcare purposes (CWHS, 2015)

Percentage

(continued)



Note: It is possible to identify the individuals working shorter working days for family reasons (Law 39/99) in the database as these individuals are identified as still on a full-time contract (under the contract field in the Social Security registers) but with a reduced working hour coefficient (under the partial field in the Social Security registers). Data corresponding to 2015 and for salaried employees in the private sector.

Source: Authors own elaboration based on CWHS data (2015).

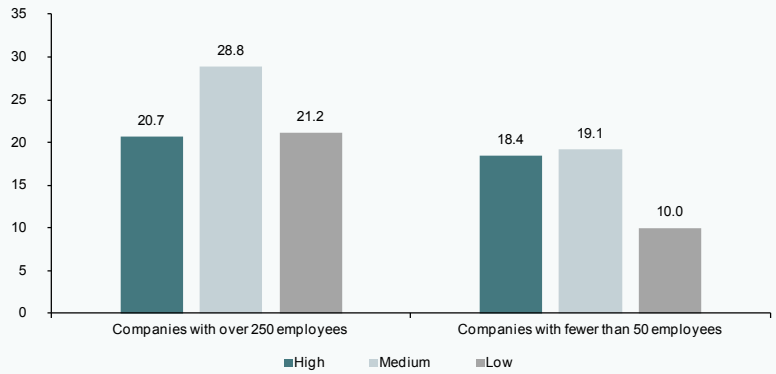
the minimum one-eighth reduction accounts for a by no means insignificant 20.5% of the total. Exhibit 3 shows that the percentage of women availing of the reduced hours formula is higher at larger-sized companies (measured by the number of employees) and in higher-skilled work.

In total, therefore, of all the reduced working hour contracts availed of for family reasons, 95.8% correspond to mothers and just 4.2% to fathers (Panel (d), Exhibit 2). It is therefore a contractual arrangement that brings into ultra sharp contrast the gender differences prevailing in relation to childcare and working hours. These stark gender differences are eye-catching in the context of Law 39/99, as the legislation offers clear incentives for not only mothers but also fathers to opt for this contractual arrangement: almost bullet-proof protection against unfair dismissal coupled with the option of reducing working hours by a minimum amount with a similarly minimal corresponding pay cut.

The high level of protection against dismissal offered by this contractual arrangement is illustrated in Exhibit 4. This exhibit analyses company-employee separation rates in a given year. It is also based on the CWHS database, but this time measures the percentage of individuals who remain in the employment of the same firm from one year to another [8]. The focus is on the women with indefinite contracts, dividing them into two groups: those that have availed of the reduced working hour measure (Law 39/99 contract) compared with other women with similar socio-economic backgrounds who were not eligible for the shorter working day on account of not having children under the age of 12. Panels (a), (b) and (c) of Exhibit 4 provide the separation rates for these groups of women for all companies; companies with more than 250 employees; and companies with fewer than 20 employees, respectively. As shown in the exhibits, the women on reduced working hours (Law 39/99 contracts) report significantly lower separation rates than women of similar characteristics who have

Exhibit 3

Reduced working hours (% of eligible mothers) by job skill level and company size (CWHS, 2015)



Note: Eligible women with permanent contracts at private sector companies. The highly skilled jobs correspond to medium- to high-grade management work. The medium skilled jobs correspond to non-manual work of medium to low complexity such as supervisory and administrative work. The low skilled jobs correspond to manual work.

Source: Authors own elaboration based on CWHS data (2015).

not reduced their hours. These differences are higher at larger enterprises (>250 employees) and when comparing women working reduced hours and non-eligible women in part-time work and with children aged over 12. The gap in separation rates is particularly high in 2008-2009, the year of the Great Recession in which job destruction was at its highest. For example, in Panel (a), the women on reduced hours present a separation rate 14.5 percentage points (or 61.7%) lower than that presented by non-eligible women with

Exhibit 4

Separation rates - employees who do not hold the same job from one year to the next. Women on reduced working hours for childcare purposes versus non-eligible women: 2008-2015

Percentage

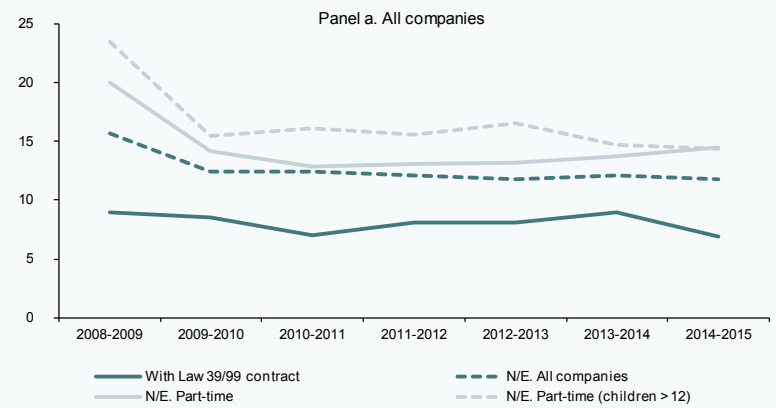
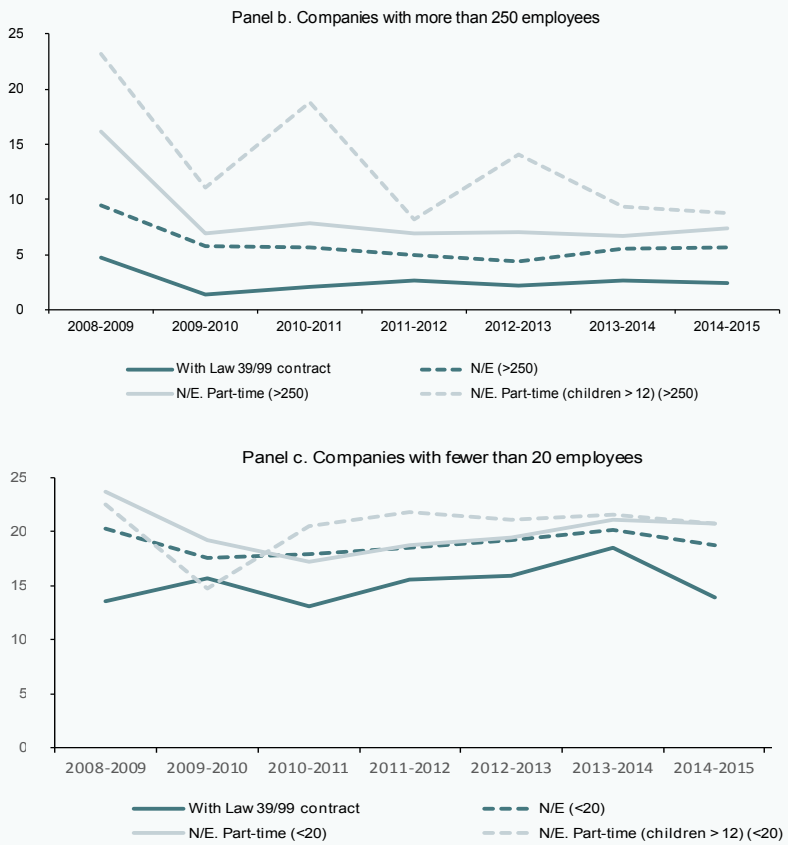


Exhibit 4

Separation rates - employees who do not hold the same job from one year to the next. Women on reduced working hours for childcare purposes versus non-eligible women: 2008-2015

Percentage

(continued)



Note: The exhibit shows the separation rates for women on reduced working hours (Law 39/99 contracts) and non-eligible women. For the case of the non-eligible (N/E) women, the readings correspond to the coefficients estimated in regression analysis controlling for the age of the woman, year and sector of employment.

Source: Authors own elaboration based on CWHS data.

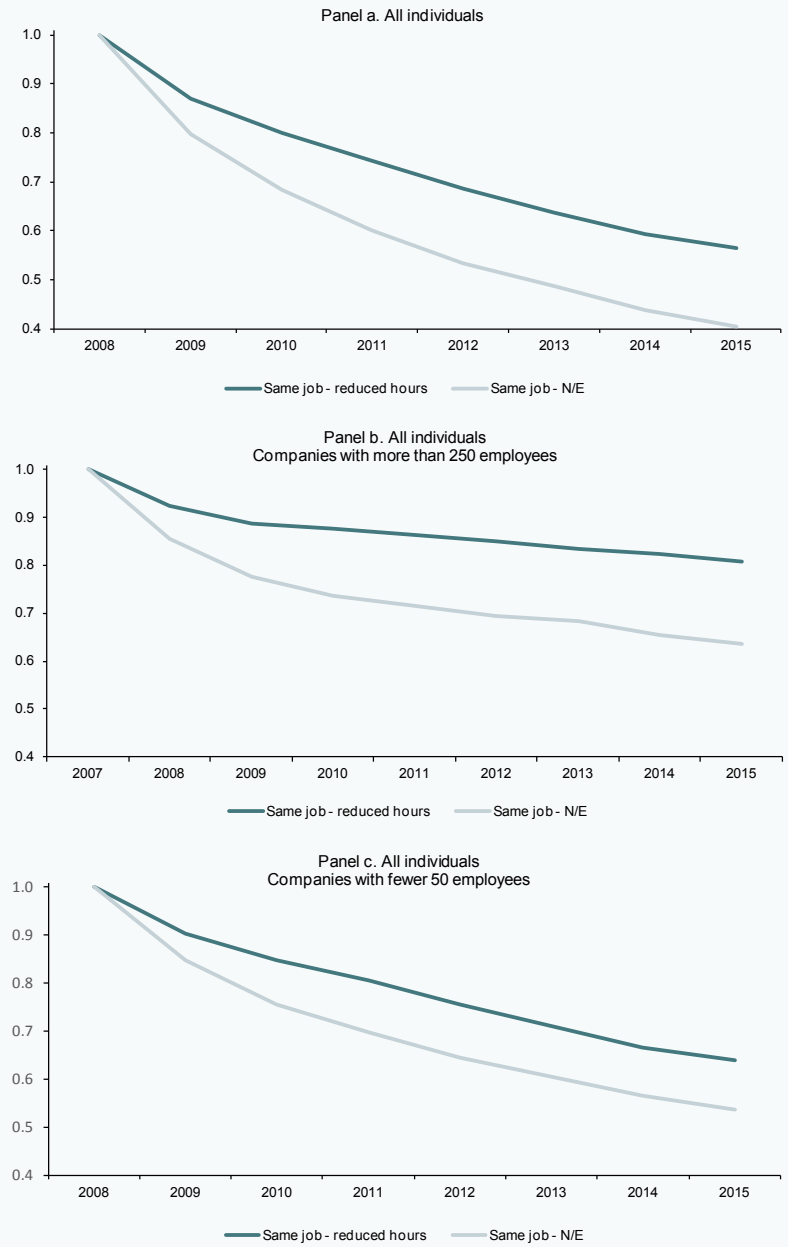
older children and working part-time (8.9% for the former versus 23.4% for the latter). It is hard to know whether the job stability of the women availing of the reduced working hours is attributable to the higher cost of laying these women off or the fact that these women are not willing to abandon a permanent position with reduced hours for fear of losing the benefits associated with this type of contract. However, the fact that the differences between the two groups of women were higher during the years of peak job destruction points to the high cost of dismissal as the main culprit.

To illustrate the cumulative effects of this protection, Exhibits 5 to 7 show the employment trajectories of the two groups of women described above but this time focusing on the percentage of women who in 2015 still had the same job as in 2008. As expected,

Exhibit 5

Employees in the same job since 2008. Women on reduced working hours for childcare purposes versus non-eligible (N/E) women: 2008-2015

Percentage



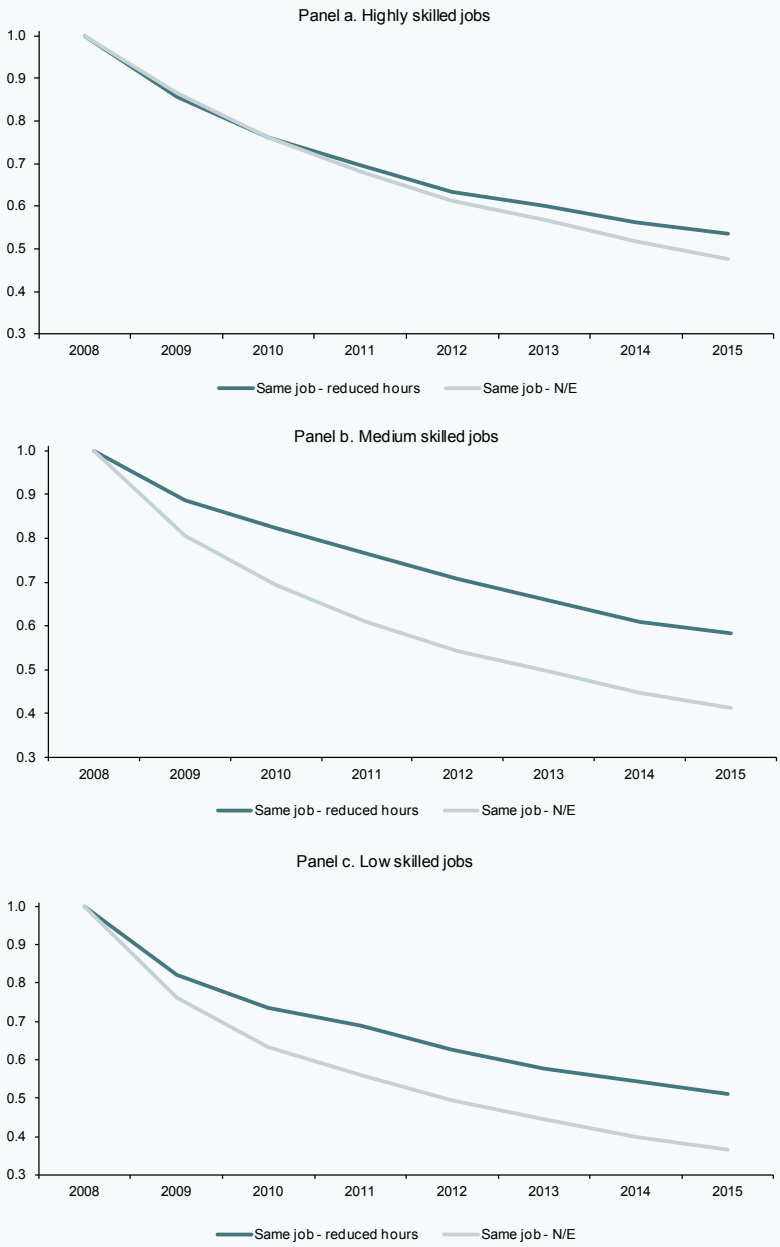
Note: Women who at some point between 2008 and 2015 availed of the reduced hours contract (Law 39/99) compared with women that were not eligible at any time between 2008 and 2015. Results of regression analysis controlling for the age of the woman, year and sector of employment. All of the women who had an indefinite contract in 2008, were earning a salary in the private sector and were working part-time. The size of the company and skill level correspond to the job held in 2008.

Source: Authors own elaboration based on CWHS data (2015).

Exhibit 6

Employees in the same job since 2008. Women on reduced working hours for childcare purposes versus non-eligible (N/E) women, by skill level: 2008-2015

Percentage



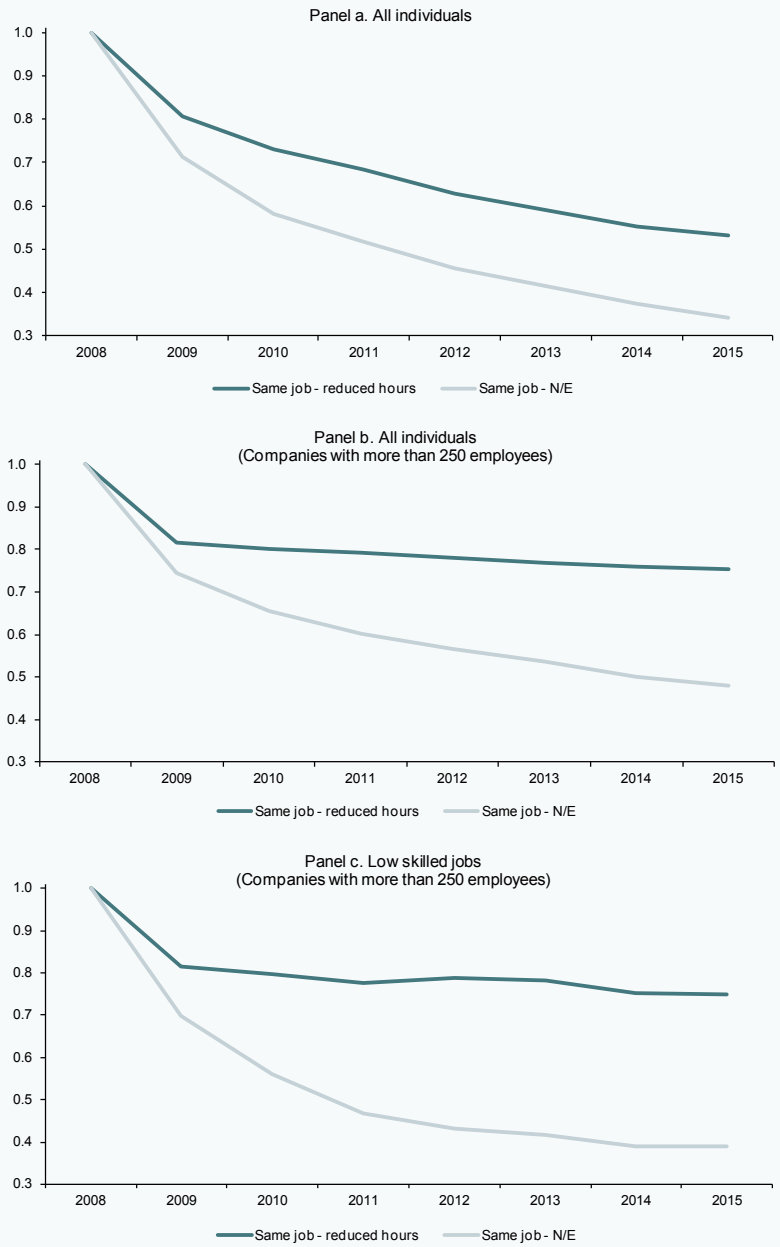
Note: Women who at some point between 2008 and 2015 availed of the reduced hours contract (Law 39/99) compared with women that were not eligible at any time between 2008 and 2015. Results of regression analysis controlling for the age of the woman, year and sector of employment. All of the women who had an indefinite contract in 2008 and were earning a salary in the private sector. The skill level corresponds to the job held in 2008.

Source: Authors own elaboration based on CWHS data (2015).

Exhibit 7

Employees in the same job since 2008. Women on reduced working hours for childcare purposes versus non-eligible (N/E) women, 2008-2015. Women working part-time in 2008

Percentage



Note: Women who at some point between 2008 and 2015 availed of the reduced hours contract (Law 39/99) compared with women that were not eligible at any time between 2008 and 2015. Results of regression analysis controlling for the age of the woman, year and sector of employment. All of the women who had an indefinite contract in 2008, were earning a salary in the private sector and were working part-time. The size of the company and skill level correspond to the job held in 2008.

Source: Authors own elaboration based on CWHS data (2015).

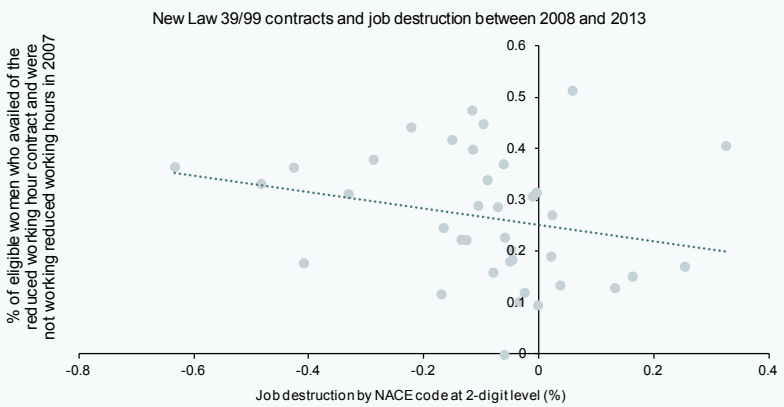
> "Specifically, during the Great Recession, the reduced working hours contract covered by Law 39/99 would appear to have benefitted the women who were able to avail of it by affording them additional protection against dismissal."

the women availing of the Law 39/99 contract still held the same job as in 2008 in a higher percentage than their non-eligible counterparts. Once again, the differences are higher in the case of large enterprises and in comparison with women working part-time but without children under the age of 12. For example, in the case of women working part-time at large companies and in relatively unskilled jobs (Panel C of Exhibit 7), the probability of losing their original jobs during the crisis was more than 50% lower in the case of women on reduced working hours relative to their non-eligible counterparts. Specifically, in 2015, 61.1% of non-eligible women were either not working or were working at a different company than in 2008, compared to just 25.2% in the case of women on reduced working hours for childcare reasons.

It has been shown that the labour costs of the Great Recession were much higher for employees who had to leave their jobs and cope with new contracts offering far lower salaries [9]. In this respect, the reduced working hours contract covered by Law 39/99 would appear to have

Exhibit 8

Percentage of eligible women who availed of the reduced working hours contract (Law 39/99) at some point between 2008 and 2013 and who in 2007 were not working reduced hours, mapped against the level of job destruction in their sectors of employment



Notes: A sample of private sector salary-earning women with indefinite contracts in 2008 who remained in the employment of the same company between 2008 and 2013 and who were not working reduced hours in early 2008. Business activities classified by NACE-99 codes at the 2-digit level. Sample of individuals in NACE activities with more than 100,000 employees in 2009. All of the women in the sample were eligible at some point between 2008 and 2013. The job destruction rate is the percentage difference between the number of job holders between 2008 and 2014. NACE-99 codes at 2-digit level. The exhibit only presents the NACE activities employing at least 100,000 people in 2009.

Source: Authors own elaboration based on CWHS data.

Table 1

Probability of availing of reduced working hours (Law 39/99) and rate of job destruction

	Panel a. Probability of a reduced hours contract			
	All companies (1)	All companies (2)	Companies with more than 75 employees (3)	Companies with fewer than 75 employees (4)
Job destruction (%)	-.053 (.042)	-.091** (.040)	-.133 (.088)	-.102** (.046)
Average probability	.2614	.2614	.3080	.2243
Impact of 10% increase in job destruction	+2.03%	+3.48%	+4.32%	+4.55%
Controls	NO	YES	YES	YES
No. of individuals	12.064	12.064	5.354	6,710
R-squared	.001	.146	.154	.145
	Panel b. Probability of minimum reduction (1/8)			
	All companies (1)	All companies (2)	Companies with more than 75 employees (3)	Companies with fewer than 75 employees (4)
Job destruction (%)	-.029 (.020)	-.024 (.020)	-.073 (.058)	-.035* (.021)
Average probability	.056	.056	.080	.037
Impact of 10% increase in job destruction	+5.18%	+4.29%	+9.13%	+9.46%
Controls	NO	YES	YES	YES
No. of individuals	12,064	12,064	5,354	6,710
R-squared	.002	.041	.061	.040

*Notes: ***p < 0.01; **p < 0.05; *p < 0.10. A sample of private sector salary-earning women with indefinite contracts in 2008 who remained in the employment of the same company between 2008 and 2013 and who were not working reduced hours in early 2008. Business activities classified by NACE-99 codes at the 2-digit level. Sample of individuals in NACE activities with more than 100,000 employees in 2009. All of the women in the sample were eligible at some point between 2008 and 2013. The dependent variable in Panel a (Panel b) is the probability of having availed of the reduced working hours contract (minimum permitted reduction) at some point between 2008 and 2013. A negative sign in the 'Job destruction' row indicates that the higher the pace of job destruction, the higher the probability of reduced hours contracts.*

Source: Authors own elaboration.

benefitted the women who were able to avail of it by affording them additional protection against dismissal. Exhibit 8 shows the correlation between working hour reductions and the rate of job destruction at the economic activity level (NACE-99 codes at the 2-digit level). This analysis focuses on the female employees who between 2008 and 2015 kept the same job at the same company and who in 2007 had not reduced their working hours but had been eligible at some subsequent point. As shown in the exhibit, the percentage of eligible women who availed of this contractual arrangement at some point between 2008 and 2015 was highest when the pace of job destruction in their sector of activity was higher [10]. When controlled for the age of the individual, job category, province, company size and age of the child in the regression analysis, the results show that for every 10% of additional job destruction there is a 3.48% increase in the probability that an eligible woman will avail of the reduced hour formula (Table 1); this percentage increases when zooming in on the percent of minimum working hour reductions, rising as high as 9.46% in the case of companies with fewer than 75 employees.

Conclusions

Despite the progress made on gender equality in Spain in recent decades, women continue to take more responsibility for childcare than men. These family responsibilities limit many women's ability to enjoy the same pay conditions as men, all the more so in a labour market such as Spain's, which is still dominated by inflexible working hours and long work days. Law 39/99 on Work-Life Balance regulated the reduction of working hours for family reasons, granting the employees availing of this contract a high level of working hour flexibility and protection against dismissal. Despite this level of protection and the fact that the law grants men the same rights as women, in practice only women have availed of this arrangement, accounting for over 95% of all such contracts. The law has therefore failed to deliver its goal of reducing the gap between men and women in terms of taking shorter and more flexible working hours in order to reconcile their work and private lives. Moreover, even though it is true that the women availing of this contractual arrangement have enjoyed a higher level of job protection and stability than other women of similar characteristics, it is also true that only those enjoying permanent contracts have been able to avail of the arrangement in practice. As a result, the law has opened up a new gap, between women protected by this type of contract and those who are not, whether because they do not have children under the age of 12 or because they are working under a temporary contract. Lastly, it cannot be ruled out that this regulation may be having unintended adverse effects on the universe of women of child-bearing age, such as a lower probability of finding work, or at least a permanent contract [11].

Reducing the gender gap requires two strategies: (1) getting men more involved in caring for their children; and, (2) reducing the cost of offering working hour flexibility.

As for the first strategy, progress is being made on the policy front, such as the concept of non-transferable paternity leave (Farré and González, 2017) [12]. However, policies of this type do not reduce the cost to the company of offering flexibility; they simply distribute them more equitably between men and women. Moreover, their impact will remain limited as long as there continue to be major differences by gender, such as in the case of paternity leave in Spain, which at four weeks is just one-quarter of maternity leave [13]. As for the second strategy, Goldin (2014) has demonstrated that emerging technology is reducing the costs of flexible working hours with possibly greater effectiveness than most existing public policies.

Notes

[1] Olivetti and Petrongolo (2008) demonstrate that correcting for the bias introduced by the low participation of women in the workplace, the gender pay gap is substantially higher than the unadjusted estimate (*i.e.,* without correcting for this bias) in the South of Europe, including Spain.

[2] Refer, for example to Fernández *et al.* (2013) in relation to Spain and to Waldfogel (1998) for a review of the research focused on the United States.

[3] Refer, for example, to De la Rica, S. *"A vueltas con la jornada parcial en España"* [Revisiting part-time working arrangements in Spain] *nadaesgratis.es,* 2014.

[4] Refer, for example, to Connolly and Gregory (2009), Manning and Petrongolo (2008) for the United Kingdom, Hirsch (2005) for the United States and Fernández-Kranz and Rodríguez-Planas (2011) for Spain.

[5] The authors find that the male and female drivers learn at the same pace, *i.e.,* the number of hours at the wheel in an Uber car results in a similar performance by gender; it is simply that the women work fewer hours and that leads them to earn less per hour than the men.

[6] The maximum age of a child for qualifying for this measure was increased to eight years of age in 2007 and then to 12 in 2012. In addition, the minimum reduction in weekly working hours was set at one-eighth in 2007, having been one-third before that. Applications to reduce working hours to care for children under this age must be made in writing with two weeks' notice.

[7] According to Spain's national statistics office, the INE, in 2017, 32% of the people working under temporary contracts in Spain had contracts with a duration of less than six months. It is important to note that the law does not address the conversion of finite-duration contracts into permanent contracts.

[8] This analysis uses the 2015 wave of the CWHS. Given the nature of this data, it is possible that the estimated separation rates falls short of the actual rates. That is because the 2015 wave only features female employees that had a relationship with the Social Security in 2015, whether via employment or the collection of benefits (such as unemployment benefits). What this means is that if, for example, a woman was employed in 2008 but lost her job in 2009 and subsequently depleted her entitlement to claims in the ensuring years, she would not be included in the 2015 wave. Given that the analysis focuses on female employees with indefinite contracts in 2008, this issue is presumably relatively minor. At any rate, the analysis should be understood as more representative of female employees with a strong attachment to the job market.

[9] Refer, for example, to the post by José I. García, Marcel Jansen and Sergi Jiménez on September 29th, 2014, on nadaesgratis.es, titled El derrumbre de los salarios inciales [The collapse in starting salaries].

[10] De la Rica and Gorjón (2016) find the opposite in an analysis which compares the incidence of reduced working hour contracts in 2004-2007 with the economic crisis of 2008-2011. The contrasting findings may be attributable to the different methodology used or the different years of analysis. Also, in March 2007, Law 39/99 was amended to reduce the minimum reduction (from 1/3 to 1/8), and increase the child age limit from 6 to 8). These changes mean that it is particularly difficult to conduct an analysis that compares the level of adoption of the working day reduction contract before and after 2007.

[11] De la Rica and Gorjón (2016) find evidence of these unintended effects using the 2004 CWHS. In a piece of research in progress (Fernández-Kranz and Rodríguez-Planas, 2013), we are analysing the effects of the legislation over a longer timeframe, using the 2010 CWHS, and we have found evidence that following the approval of Law 39/99, companies may have become more reluctant to hire women of child-bearing age or offer them an indefinite contract, an unintended adverse effect that is gaining traction over time.

[12] Farré and González (2017) analyse the impact of the introduction of non-transferable paternity leave in Spain in 2007. The authors find that this policy has had a limited impact in the long-run, offering by way of possible explanation the still-short duration of this leave, particularly in comparison with maternity leave.

[13] Non-transferable paternity leave was introduced for the first time in 2007 and was set at two weeks. In January 2017, it was extended to four weeks. Mothers currently have 16 weeks' leave, 10 of which can be transferred to the father. However, less than 2% of fathers take any of this potential time off.

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Recent key developments in the area of Spanish financial regulation

Prepared by the Regulation and Research Department of the Spanish Confederation of Savings Banks (CECA)

CNMV Circular on financial instrument warnings (Circular 1/2018, published in the *Official State Journal* on March 27th, 2018)

With this Circular, Spain's securities market regulator, the CNMV, aims to step up the 'informed consent' requirement when retail clients invest in certain products, particularly complex ones. To this end, it standardises the manner in which financial intermediaries must warn their retail customers of the risks associated with the products they wish to invest in.

It applies to entities that provide investment services other than discretionary and individualised portfolio management for retail clients in Spain, thus applying specifically to: (i) investment service firms (including the natural persons with the status of financial advisory firms); (ii) credit institutions and collective investment scheme management companies authorised to provide certain investment and ancillary services; and, (iii) certain foreign entities: branches in Spain; entities authorised to operate in another European Union Member State (when they operate in Spain through an agent established in Spain) and entities authorised in a non-EU Member State (when they operate in Spain without a branch).

The Circular establishes three kinds of standard warnings:

- Warnings concerning particularly complex financial instruments that are generally not appropriate for retail clients: The Circular stipulates the content of the warnings for certain financial instruments that are, in the opinion of the CNMV, not apt for retail clients on account of their particular complexity. Shares deemed non-complex financial instruments are excluded.

  Entities must have their retail clients sign the warning and provide a hand-written statement saying: *"Product that is difficult to understand. The CNMV considers that, in general, it is not appropriate for retail investors."*

  In the event that the entity deems the retail clients should also be warned that the product or service is inappropriate or that a lack of information has prevented it from establishing whether or not the investment product or service is appropriate, both warnings should be provided together.

  In the event of services provided by phone, entities must keep a recording of the corresponding retail clients' oral consent.

  In the case of services provided online, entities are obliged to put the means in place to ensure that their retail clients can type in the corresponding handwritten statement prior to processing the order; the entities must also be capable of certifying that consent has been provided.

- Warnings concerning financial instruments that are also eligible bail-inable liabilities: Entities must provide this warning, which must form part of the contractual documentation, as well as obtaining the retail customer's signature. They must also provide an additional warning in tandem if they deem that the service or product is not apt or that they do not have the information needed to make that determination.

- Warnings concerning the existence of a significant difference with respect to the estimated current value of certain financial instruments: For certain financial instruments, entities must warn retail clients of the existence of a significant difference between the cash value at which a transaction is to be carried out (including fees and commissions) and their estimate of the instruments' current realisable value.

The requirements introduced under this Circular apply to all products purchased prior to its effectiveness that would qualify for a warning under the new rules; the related warnings must be provided to retail clients in the next statement they are due to receive.

CNMV Technical Guide on related-party transactions of collective investment schemes and other transactions performed by collective investment scheme management companies (Technical Guide 1/2018, published on the CNMV's website on February 27th, 2018)

The goal of the Technical Guide is to provide criteria regarding:

- The definition of related parties and related-party transactions (specifically including the collective investment scheme (CIS) depositary and any depositary group company); and,

- When related-party transactions require prior authorisation in light of the specific conflicts of interest to which they may give rise and which transactions must be carried out in the sole interest of the CISs and on an arm's length basis (at prices or under conditions that are the same as or better than those of the market).

It also itemises the activities the CIS management companies may carry out that are not expressly deemed related-party transactions but should be conducted under the general regime for handling potential conflicts of interest:

- The provision of discretionary portfolio management services;

- The provision of investment advice; and,

- Any transactions they may perform with the sponsors of the CISs they manage.

Spanish economic forecasts panel: May 2018*

Funcas Economic Trends and Statistics Department

GDP growth in 2018 has been revised upwards by 0.1 percentage points to 2.8%

In the first quarter of 2018, GDP grew by 0.7%, according to advanced data, in line with what was expected by the consensus forecast. The indicators available for the start of the second quarter point to a slight slowdown. Consumer and sector confidence indices for April have deteriorated with respect to the average for the first quarter, except for industry. Meanwhile, the manufacturing and services PMIs have moderated, and the increase in Social Security contributor numbers has slowed.

The consensus forecast for GDP growth for 2018 is 2.8%, up 0.1 percentage points on the last Panel. Rates of 0.7% in the second quarter and 0.6% in the remaining quarters of the year are expected.

Domestic demand is set to contribute 2.5 percentage points to this growth, up 0.1 percentage points on the last consensus forecast. The forecast for growth in investment has risen again, especially investment in construction. As for the foreign sector, its expected contribution remains at 0.3 percentage points.

The forecast for 2019 remains unchanged at 2.4%

The consensus forecast for GDP growth in 2019 remains at 2.4% due to the slight slowdown that will begin in the third quarter of 2018. This expected rate is in line with the forecasts of the Spanish Government and the European Commission. The slowdown is attributable mainly to a weakening of private consumption and investment, which explains a reduction of 0.3 percentage points in the contribution of domestic demand to growth. As for the foreign sector, its contribution is down by 0.1 percentage points, as a result of a slight acceleration in the growth of imports.

Inflation on the rise in 2019

Inflation up to April was contained despite the rise in oil prices, thanks to a drop in electricity prices. In recent weeks, the price of crude oil has risen to around 75 dollars, the highest level since the end of 2014, while the euro depreciated against the dollar.

Nevertheless, there have been no changes in the inflation forecast. It is expected to continue increasing until the third quarter, and then decrease to end the year with a year-on-year rate of 1.5% in December, the same as the average annual rate. As for 2019, a slight acceleration is expected up to an average rate of 1.6%, with a year-on-year rate of 1.5% in December. Core inflation, on the other hand, will be 1.2% and 1.4%, respectively, in 2018 and 2019.

The unemployment rate continues to decline

According to the Labour Force Survey, seasonally adjusted employment increased by 0.5% in the first quarter of the year. The unemployment rate stood at 16.7%, down 2.1 percentage points on one year ago.

Social Security contributor numbers, however, grew in that period at a noticeably more intense rate than indicated by the Labour Force Survey figures, which had already occurred in the previous quarter. However, in March and April progress slowed, as did the rate of decline in registered unemployment, which points to a more moderate job growth in the second quarter.

According to consensus forecasts, job creation will grow 2.4% in 2018 and 2% in 2019, unchanged from the last Panel. Using the forecasts for growth in GDP, job creation and wage remuneration yields implied forecasts for growth in labour productivity and ULCs: the former is to grow by 0.4% in 2018 (up 0.1 percentage points with respect to the last Panel) and 0.4% in 2019, while ULCs will increase by 0.7% in 2018 (down 0.1 percentage points on the last Panel) and 1.1% in 2019 (up 0.1 percentage points on the last Panel).

The average annual unemployment rate will continue to fall to 15.3% in 2018, and to 13.6% in

2019 (the latter being down 0.1 percentage points on the previous consensus forecast).

In 2018, the current account will remain in comfortable surplus

According to revised figures, the current account balance recorded a surplus of 22.1 billion euros in 2018, somewhat higher than the 2017 balance. In the first two months of 2018, the trade surplus increased slightly compared to the surplus for the year-ago period, while the income deficit narrowed, so that the current account balance improved.

The consensus forecast for the current account balance remains at 1.6% of GDP in 2018, and 1.5% in 2019. Therefore, the external strength of the Spanish economy will continue.

The public deficit will narrow, but without meeting the targets

The Public Administrations recorded a deficit of 3.1% of GDP in 2017, compared to 4.3% in the previous year. The improvement was the result of an increase in revenue higher than that of expenditures, and came basically from the Autonomous Regions, whose deficit was below the target, while the State failed to meet its target. In the first months of 2018, both the State and the Autonomous Regions have improved their balance compared with the year-ago period, while the Social Security System deteriorated slightly.

The Panel foresees a reduction of the deficit of the Public Administrations in the next two years to 2.5% of GDP in 2018 and 1.9% of GDP in 2019, up 0.1 percentage points on the March forecast in both cases. Failure to hit the deficit target in both years is therefore expected – even bearing in mind that some analysts could not fully reflect in their forecasts the latest measures to increase expenditure and reduce taxes announced in the General State Budget.

External tail winds are subsiding

The Spring round of forecasts of the main international organizations points to continued vigorous growth for the world economy. The IMF forecasted that world GDP will increase by 3.9% in both 2018 and 2019, unchanged from January forecasts. In addition, the expansion does not appear to create excessive pressure on prices, even in countries that are approaching full employment, such as Germany, the US and Japan.

However, there have been recent signs of a weakening external boost for the Spanish economy. Oil has become more expensive, exceeding 77 dollars per barrel, *i.e.,* around 10 dollars more than at the beginning of the year. On the other hand, the eurozone has seen slower growth during the first quarter. The slowdown is especially pronounced in Italy, one of the main export markets. Finally, the withdrawal of monetary stimuli by the Federal Reserve has triggered a return of capital to the United States, attracted by the prospect of an increase in yields. The impact on the most vulnerable economies, such as Argentina (an important trading partner for Spanish companies) and Turkey, followed shortly.

All in all, most panellists believe that the international context is favourable, both in the EU and beyond. However, a number of analysts believe that the current environment is neutral. Moreover, while most analysts believe that the favourable environment will continue, a growing number of them believe that the climate will deteriorate in the coming months.

Interest rates will rise

The normalization of the Federal Reserve's monetary policy has begun to put pressure on interest rates in Europe. Thus, German bond yields have picked up and the trend is expected to continue as the ECB follows in the footsteps of its American counterpart.

The majority opinion among the panellists is that ECB benchmark rates will rise from the third quarter of 2019. Several panellists anticipate that this shift will occur even earlier, during the first part of next year. An anticipated benchmark rate rise would impact on markets. Thus, according to the majority of the panellists, 12-month Euribor, which has remained negative in recent months, would begin an upward path from the second half of this year to end 2019 in clearly positive figures.

Also, the Panel anticipates a change in trend of 10-year government bond yields, reflecting expectations of short-term interest rates. By the

end of 2019, the majority of analysts foresee a yield of 2%, 65 basis points above the average values recorded during the first quarter of 2018. However, this is a level that most panellists consider relatively low and appropriate for the current situation.

The euro could appreciate slightly against the dollar

Since mid-April, the dollar has appreciated against the euro, reflecting the adjustment to expectations with respect to US monetary policy. Currently, the euro is trading at around 1.20 dollars, slightly less than in the last Panel. However, the majority of the panellists anticipate that the euro will recover the ground lost during the coming months and that it will appreciate to above 1.25 dollars in 2019.

Change in assessment with respect to fiscal policy

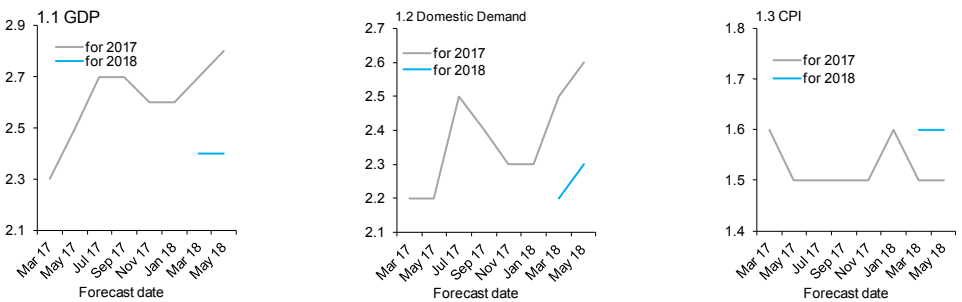
The panellists maintain their opinion on monetary policy. All continue to believe that it is expansionary and none of them foresee a restrictive monetary policy for the coming months, as was the case in the last Panel.

However, there is a change in assessment with respect to fiscal policy. More panellists consider that this policy is expansionary, while it should be neutral or even restrictive, taking into account the cycle and the persistence of high public debt.

Exhibit 1

Change in forecasts (Consensus values)

Percentage annual change



Source: Funcas Panel of forecasts.

** The Spanish economic forecasts panel is a survey run by Funcas which consults the 17 research departments listed in Table 1. The survey, which dates back to 1999, is published bi-monthly in the first fortnights of January, March, May, July, September and November. The responses to the survey are used to produce a "consensus" forecast, which is calculated as the arithmetic mean of the 17 individual contributions. The forecasts of the Spanish Government, the Bank of Spain, and the main international organisations are also included for comparison, but do not form part of the consensus forecast.*

Spanish economic forecasts panel: May 2018*

Funcas Economic Trends and Statistics Department

Table 1

Economic Forecasts for Spain – May 2018

Average year-on-year change, as a percentage, unless otherwise stated

	GDP		Household consumption		Public consumption		Gross fixed capital formation		GFCF machinery and capital goods		GFCF construction		Domestic demand	
	2018	2019	2018	2019	2018	2019	2018	2019	2018	2019	2018	2019	2018	2019
Analistas Financieros Internacionales (AFI)	2.8	2.3	2.1	1.8	1.4	2.0	4.6	4.1	5.6	4.7	4.2	4.0	2.5	2.3
Axesor	2.8	2.4	2.3	1.8	1.8	1.7	3.8	3.5	5.1	4.1	3.7	3.4	2.5	2.2
BBVA	2.9	2.5	2.2	2.0	1.7	1.9	4.8	5.4	5.2	5.3	4.7	5.4	2.6	2.6
Bankia	2.9	2.3	2.4	2.0	1.4	1.1	4.4	3.9	4.8	4.0	4.2	3.9	2.6	2.3
CaixaBank	2.8	2.4	2.6	2.0	1.2	0.8	3.3	3.0	3.8	2.6	3.1	3.2	2.5	2.0
Cámara de Comercio de España	2.7	2.4	2.3	1.8	1.2	1.4	5.2	4.5	5.6	4.9	5.0	4.2	2.8	2.4
Cemex	2.7	2.3	2.4	2.1	1.4	1.2	4.1	3.8	4.4	3.8	4.2	4.0	2.5	2.2
Centro de Estudios Economía de Madrid (CEEM-URJC)	2.7	2.3	2.2	1.6	1.4	1.3	4.3	4.2	4.4	3.5	4.8	5.0	2.4	2.1
Centro de Predicción Económica (CEPREDE-UAM)	2.7	2.4	2.4	2.1	2.0	1.6	4.7	3.8	6.0	4.1	4.7	4.0	2.7	2.3
CEOE	2.8	2.6	2.4	2.2	1.3	1.7	4.7	4.1	5.9	4.4	4.3	4.2	2.6	2.4
Funcas	2.8	2.4	2.2	2.0	1.2	1.0	5.5	4.5	5.8	4.3	5.6	4.7	2.6	2.3
Instituto Complutense de Análisis Económico (ICAE-UCM)	2.8	2.7	2.7	2.6	1.2	1.4	4.0	4.0	6.4	5.9	4.5	3.5	2.6	2.6
Instituto de Estudios Económicos (IEE)	2.8	2.3	2.5	2.0	1.4	1.4	4.2	3.4	6.0	4.7	3.2	2.0	2.8	2.2
Intermoney	2.8	2.4	2.2	2.0	1.6	1.6	4.8	4.1	4.9	4.3	4.8	4.0	2.6	2.3
Repsol	2.6	2.4	2.2	1.9	1.4	1.5	4.9	3.9	6.0	3.8	4.7	4.1	2.4	2.2
Santander	2.9	2.4	2.4	2.0	1.7	1.6	4.5	4.0	5.5	3.6	4.1	4.3	2.8	2.4
Solchaga Recio & asociados	2.8	2.4	2.2	1.9	1.3	1.2	4.3	3.9	4.8	4.0	4.3	4.5	2.5	2.3
CONSENSUS (AVERAGE)	2.8	2.4	2.3	2.0	1.4	1.4	4.5	4.0	5.3	4.2	4.4	4.0	2.6	2.3
Maximum	2.9	2.7	2.7	2.6	2.0	2.0	5.5	5.4	6.4	5.9	5.6	5.4	2.8	2.6
Minimum	2.6	2.3	2.1	1.6	1.2	0.8	3.3	3.0	3.8	2.6	3.1	2.0	2.4	2.0
Change on 2 months earlier[1]	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.2	0.0	0.3	0.2	0.1	0.1
- Rise[2]	5	4	2	2	4	5	7	4	5	4	6	3	6	6
- Drop[2]	1	0	0	0	2	0	1	1	2	1	1	0	0	0
Change on 6 months earlier[1]	0.2	--	0.1	--	0.3	--	0.8	--	1.3	--	0.7	--	0.3	--
Memorandum items:														
Government (April 2018)	2.7	2.4	2.0	1.8	1.1	1.2	4.7	4.4	--	--	--	--	--	--
Bank of Spain (March 2018)	2.7	2.3	2.1	1.6	1.4	1.2	4.3	4.1	5.0	4.1	4.0	4.4	--	--
EC (May 2018)	2.9	2.4	2.3	1.9	1.9	1.3	4.6	3.9	5.0	4.3	--	--	--	--
IMF (April 2018)	2.8	2.2	2.3	2.0	1.0	0.7	4.5	3.6	--	--	--	--	2.5	2.1
OECD (November 2017)	2.3	2.1	2.0	1.7	0.8	0.7	3.4	4.0	--	--	--	--	2.1	2.0

[1] *Difference in percentage points between the current month's average and that of two months earlier (or six months earlier).*

[2] *Number of panellists revising their forecast upwards (or downwards) since two months earlier.*

Table 1 (continued)

Economic Forecasts for Spain – May 2018

Average year-on-year change, as a percentage, unless otherwise stated

	Exports of goods & services		Imports of goods & services		CPI (annual av.)		Core CPI (annual av.)		Labour costs[3]		Jobs[4]		Unempl. (% labour force)		C/A bal. of payments (% of GDP)[5]		Gen. gov. bal. (% of GDP)[7]	
	2018	2019	2018	2019	2018	2019	2018	2019	2018	2019	2018	2019	2018	2019	2018	2019	2018	2019
Analistas Financieros Internacionales (AFI)	4.5	3.8	4.2	2.5	1.5	1.7	1.2	1.4	1.4	1.6	2.4	2.0	15.1	13.6	1.6	1.6	-2.6	-2.0
Axesor	3.3	4.1	2.5	3.6	1.5	2.0	1.2	1.5	1.0	1.3	2.3	1.9	15.1	13.3	1.2	0.7	-2.6	-2.1
BBVA	4.8	6.1	4.2	6.9	1.5	1.6	1.1	1.3	1.1	2.1	2.6	2.2	15.3	13.7	1.5	1.1	-2.4	-1.7
Bankia	4.9	3.6	4.2	3.6	1.5	1.8	1.1	1.5	1.1	1.5	2.5	1.8	15.3	13.9	1.8	1.6	--	--
CaixaBank	3.5	4.2	2.8	3.2	1.6	2.0	1.2	1.7	1.3	2.2	2.4	2.1	15.5	13.7	1.7	1.7	-2.4	-1.7
Cámara de Comercio de España	4.2	4.3	4.3	4.3	1.7	1.4	1.4	1.1	--	--	2.4	2.0	15.5	13.8	1.3	1.5	-2.2	-1.3
Cemex	4.4	3.8	4.2	4.0	1.5	1.7	1.3	1.3	--	--	2.5	1.8	15.4	14.0	1.5	1.5	-2.5	-2.0
Centro de Estudios Economía de Madrid (CEEM-URJC)	4.6	4.5	4.2	4.1	1.5	1.6	1.1	1.8	--	--	2.4	1.9	15.0	13.3	1.8	1.9	-2.6	-2.4
Centro de Predicción Económica (CEPREDE-UAM)	4.7	4.8	5.0	4.7	1.8	1.6	--	--	1.0	1.4	2.4	2.0	15.5	14.1	1.3	1.5	-2.5	-2.1
CEOE	4.9	4.2	4.7	4.0	1.4	1.3	1.0	1.1	0.8	1.2	2.6	2.4	15.1	13.1	1.3	1.1	-2.5	-2.0
Funcas	5.0	4.8	4.9	4.8	1.5	1.5	1.3	1.3	1.0	1.0	2.4	2.1	15.1	13.2	1.4	1.6	-2.2	-1.8
Instituto Complutense de Análisis Económico (ICAE-UCM)	3.7	4.4	4.1	5.0	1.6	1.6	1.3	1.4	--	--	2.6	2.3	15.2	13.6	1.8	1.8	-2.4	-1.8
Instituto de Estudios Económicos (IEE)	3.9	4.6	4.0	4.5	1.5	1.2	1.2	1.2	--	--	2.4	1.9	15.8	14.7	1.7	1.9	-2.3	-1.8
Intermoney	4.6	4.1	4.3	4.2	1.5	1.6	1.3	1.5	--	--	2.3	1.9	15.2	13.5	1.5	1.4	-2.6	-2.1
Repsol	3.2	3.2	2.8	2.9	1.5	1.6	1.1	1.2	1.0	0.8	2.4	2.3	14.9	12.6	1.6	1.5	-2.2	-1.3
Santander	3.8	3.6	3.4	3.5	1.3	1.5	1.2	1.7	1.3	1.5	2.4	1.8	15.3	13.8	1.8	2.0	-2.8	-1.5
Solchaga Recio & asociados	4.7	4.3	4.0	4.1	1.3	1.5	1.5	1.6	--	--	2.3	2.0	15.3	13.6	1.8	1.7	-2.7	-2.1
CONSENSUS (AVERAGE)	4.3	4.3	4.0	4.1	1.5	1.6	1.2	1.4	1.1	1.5	2.4	2.0	15.3	13.6	1.6	1.5	-2.5	-1.9
Maximum	5.0	6.1	5.0	6.9	1.8	2.0	1.5	1.8	1.4	2.2	2.6	2.4	15.8	14.7	1.8	2.0	-2.2	-1.3
Minimum	3.2	3.2	2.5	2.5	1.3	1.2	1.0	1.1	0.8	0.8	2.3	1.8	14.9	12.6	1.2	0.7	-2.8	-2.4
Change on 2 months earlier[1]	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	-0.1	0.0	0.0	-0.1	-0.1
- Rise[2]	4	2	2	4	4	4	5	4	2	2	4	4	2	2	3	3	1	1
- Drop[2]	2	3	2	0	5	4	4	4	1	1	0	0	3	5	5	3	7	6
Change on 6 months earlier[1]	-0.3	--	0.1	--	0.0	--	-0.2	--	0.0	--	0.2	--	0.0	--	0.0	--	-0.1	--
Memorandum items:																		
Government (April 2018)	4.8	4.6	4.1	4.2	--	--	--	--	--	--	2.5	2.3	15.5	13.8	1.7	1.6	-2.2	-1.3
Bank of Spain (March 2018)	4.9	4.8	4.2	4.5	1.2	1.4	1.2	1.7	--	--	2.7	2.0	15.1	13.3	1.8 [6]	1.8 [6]	-2.5	-2.1
EC (May 2018)	5.0	4.7	4.7	4.5	1.4	1.4	--	--	1.1	1.6	2.6	2.3	15.3	13.8	1.5	1.6	-2.6	-1.9
IMF (April 2018)	4.7	4.2	4.3	4.1	1.7	1.6	--	--	--	--	2.0	0.8	15.5	14.8	1.6	1.7	-2.5	-2.1
OECD (November 2017)	4.6	4.3	4.0	4.2	1.3	1.6	1.5	1.6	--	--	2.3	1.9	15.4	14.0	1.6	1.6	-2.4	-1.5

[1] *Difference in percentage points between the current month's average and that of two months earlier (or six months earlier).*

[2] *Number of panellists revising their forecast upwards (or downwards) since two months earlier.*

[3] *Average earnings per full-time equivalent job.*

[4] *In National Accounts terms: full-time equivalent jobs.*

[5] *Current account balance, according to Bank of Spain estimates.*

[6] *Net lending position vis-à-vis rest of world.*

[7] *Excluding financial entities bail-out expenditures.*

Table 2

Quarterly Forecasts – May 2018[1]

	Quarterly forecasts (percentage)							
	18-I Q	18-IIQ	18-IIIQ	18-IVQ	19-IQ	19-IIQ	19-IIIQ	19-IVQ
GDP[1]	0.7	0.7	0.6	0.6	0.6	0.6	0.6	0.6
Euribor 1 yr[2]	-0.19	-0.18	-0.14	-0.08	0.01	0.12	0.25	0.36
Government Bond yield 10 yr[2]	1.35	1.43	1.54	1.64	1.74	1.84	1.94	2.03
ECB main refinancing operations interest rate[2]	0.00	0.00	0.00	0.00	0.02	0.08	0.19	0.29
Dollar / Euro exchange rate[2]	1.23	1.22	1.23	1.23	1.24	1.25	1.26	1.27

[1] *Qr-on-qr growth rates.*
[2] *End of period.*

Table 3

CPI Forecasts – May 2018

Monthly change (%)				Year-on-year change (%)	
Apr-18	May-18	Jun-18	Jul-18	Dec-18	Dec-19
0.7	0.2	0.2	-0.4	1.5	1.5

Table 4

Opinions – May 2018

Number of responses

	Currently			Trend for next six months		
	Favourable	Neutral	Unfavourable	Improving	Unchanged	Worsening
International context: EU	13	4	0	0	15	2
International context: Non-EU	12	5	0	0	14	3
	Is being			**Should be**		
	Restrictive	Neutral	Expansionary	Restrictive	Neutral	Expansionary
Fiscal policy assessment[1]	0	9	8	5	12	0
Monetary policy assessment[1]	0	0	17	0	4	13

[1] *In relation to the current state of the Spanish economy.*

Key Facts

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Economic Indicators

Table 1

National accounts: GDP and main expenditure components SWDA* (ESA 2010, Base 2010)

Forecasts in yellow

		GDP	Private consumption	Public consumption	Gross fixed capital formation				Equipment & others products	Exports	Imports	Domestic demand (a)	Net exports (a)
					Total	Construction							
						Total	Housing	Other constructions					
Chain-linked volumes, quarter-on-quarter percentage changes, at annual rate													
2011		-1.0	-2.4	-0.3	-6.9	-11.7	-13.3	-10.2	0.9	7.4	-0.8	-3.1	2.1
2012		-2.9	-3.5	-4.7	-8.6	-12.3	-10.3	-13.9	-3.5	1.1	-6.4	-5.1	2.2
2013		-1.7	-3.1	-2.1	-3.4	-8.6	-10.2	-7.3	2.8	4.3	-0.5	-3.2	1.5
2014		1.4	1.5	-0.3	4.7	4.2	11.3	-1.1	5.2	4.3	6.6	1.9	-0.5
2015		3.4	3.0	2.1	6.5	3.8	-1.0	7.9	9.4	4.2	5.9	3.9	-0.4
2016		3.3	3.0	0.8	3.3	2.4	4.4	0.9	4.2	4.8	2.7	2.5	0.7
2017		3.1	2.4	1.6	5.0	4.6	8.3	1.5	5.4	5.0	4.7	2.8	0.3
2018		2.8	2.2	1.2	5.5	5.6	8.3	3.1	5.4	5.0	4.9	2.6	0.2
2019		2.4	2.0	1.0	4.5	4.7	7.2	2.1	4.3	4.8	4.8	2.3	0.1
2017	I	3.0	2.2	1.0	4.9	4.5	6.1	3.0	5.4	5.6	4.5	2.5	0.5
	II	3.1	2.4	1.5	3.9	4.3	8.4	0.7	3.6	4.5	3.1	2.5	0.6
	III	3.1	2.4	1.4	5.6	5.1	9.2	1.6	6.2	5.6	5.9	3.0	0.1
	IV	3.1	2.5	2.4	5.6	4.8	9.5	0.5	6.4	4.4	5.2	3.2	-0.1
2018	I	2.9	2.6	1.4	4.7	4.3	7.8	1.1	5.1	3.2	2.8	2.7	0.2
	II	2.7	2.2	1.2	5.6	5.1	8.2	2.1	6.1	4.0	4.1	2.7	0.1
	III	2.7	2.0	1.1	5.6	6.4	9.2	3.8	4.8	5.5	5.2	2.5	0.2
	IV	2.6	1.9	0.8	6.1	6.7	8.0	5.5	5.5	7.4	7.4	2.4	0.2
2019	I	2.5	1.9	0.9	5.2	5.7	7.2	4.1	4.7	6.2	6.1	2.3	0.2
	II	2.4	1.9	0.9	4.6	4.9	7.0	2.8	4.3	5.5	5.4	2.3	0.1
	III	2.3	2.0	0.9	4.3	4.3	7.1	1.5	4.2	4.1	4.2	2.3	0.1
	IV	2.3	2.1	1.1	4.0	3.9	7.5	0.1	4.1	3.3	3.5	2.3	0.0
Chain-linked volumes, quarter-on-quarter percentage changes, at annual rate													
2017	I	3.2	1.8	4.4	11.5	10.3	18.5	3.3	12.8	10.1	15.7	4.4	-1.2
	II	3.5	3.3	1.9	2.5	3.9	7.1	1.1	1.1	4.2	1.8	2.6	0.9
	III	2.8	2.8	1.7	5.6	1.0	3.2	-1.0	10.4	2.3	4.1	3.3	-0.5
	IV	2.7	2.2	1.7	2.9	4.0	9.9	-1.2	1.9	1.1	0.0	2.4	0.3
2018	I	2.7	2.0	0.5	7.7	8.3	11.0	5.5	7.1	5.4	5.3	2.6	0.1
	II	2.7	1.9	1.0	6.2	7.2	9.0	5.5	5.1	7.3	7.0	2.5	0.3
	III	2.6	1.8	1.2	5.6	6.2	7.0	5.5	5.0	8.6	8.7	2.4	0.2
	IV	2.5	1.8	0.7	5.1	5.2	5.0	5.5	5.0	8.5	8.7	2.3	0.2
2019	I	2.3	2.0	0.9	3.9	4.1	8.0	0.1	3.7	0.8	0.4	2.1	0.1
	II	2.3	2.0	1.0	3.9	4.1	8.0	0.1	3.7	4.1	4.2	2.2	0.1
	III	2.3	2.2	1.2	4.2	3.9	7.5	0.1	4.5	3.3	3.8	2.4	-0.1
	IV	2.4	2.2	1.5	4.0	3.4	6.5	0.1	4.5	5.2	5.6	2.4	0.0
		Current prices (EUR billions)	Percentage of GDP at current prices										
2010		1,080.9	57.2	20.5	23.0	14.3	6.9	7.4	8.7	25.5	26.8	101.3	-1.3
2011		1,070.4	57.8	20.5	21.5	12.5	5.7	6.8	9.0	28.9	29.2	100.2	-0.2
2012		1,039.8	58.8	19.7	19.8	10.9	4.9	6.0	8.9	30.7	29.2	98.5	1.5
2013		1,025.7	58.3	19.7	18.8	9.7	4.1	5.6	9.0	32.2	29.0	96.7	2.2
2014		1,037.8	58.6	19.5	19.3	9.9	4.5	5.4	9.4	32.7	30.3	97.6	2.4
2015		1,080.0	58.0	19.3	19.8	10.0	4.4	5.5	9.9	32.9	30.7	97.7	2.3
2016		1,118.5	57.6	18.9	20.0	10.0	4.6	5.3	10.0	32.9	29.9	97.0	3.0
2017		1,163.7	57.7	18.5	20.6	10.4	5.1	5.3	10.2	34.1	31.4	97.3	2.7
2018		1,212.7	57.4	18.1	21.3	10.9	5.5	5.3	10.5	34.9	32.3	97.4	2.6
2019		1,258.3	57.2	17.8	21.8	11.2	5.9	5.3	10.6	35.5	32.9	97.4	2.6

** Seasonally and Working Day Adjusted.*

(a) Contribution to GDP growth.

Source: INE (Quarterly National Accounts) and Funcas (Forecasts).

Chart 1.1 - GDP

Percentage change

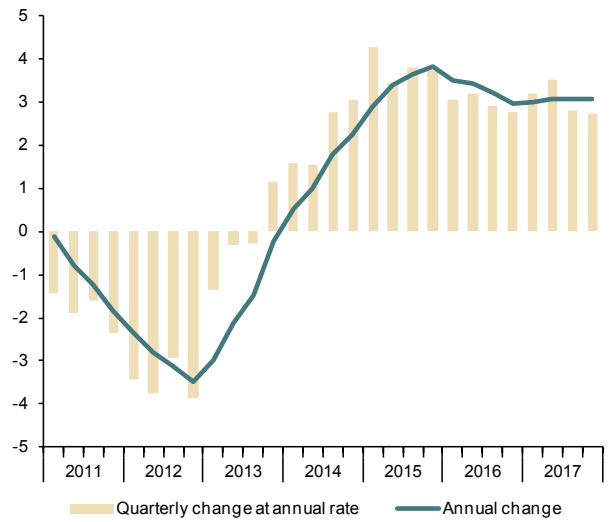


Chart 1.2 - Contribution to GDP annual growth

Percentage points

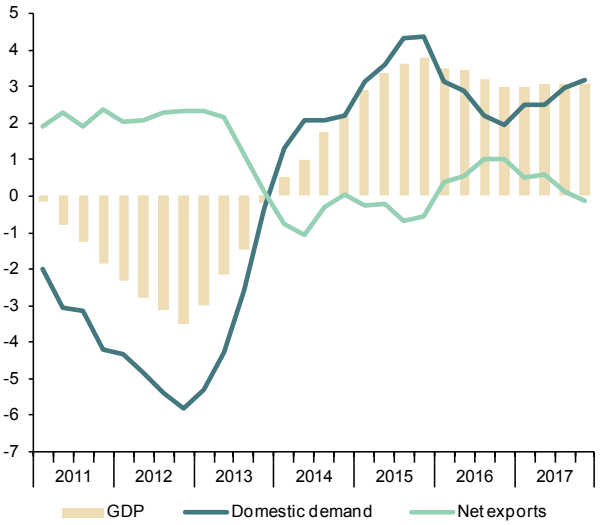


Chart 1.3 - Final consumption

Percentage change

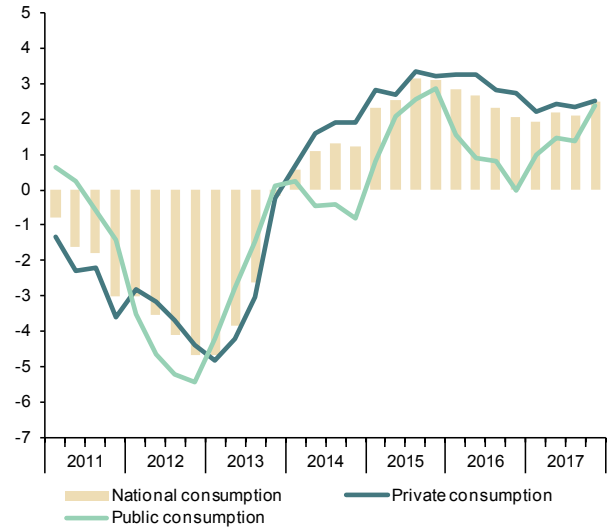


Chart 1.4 - Gross fixed capital formation

Percentage change

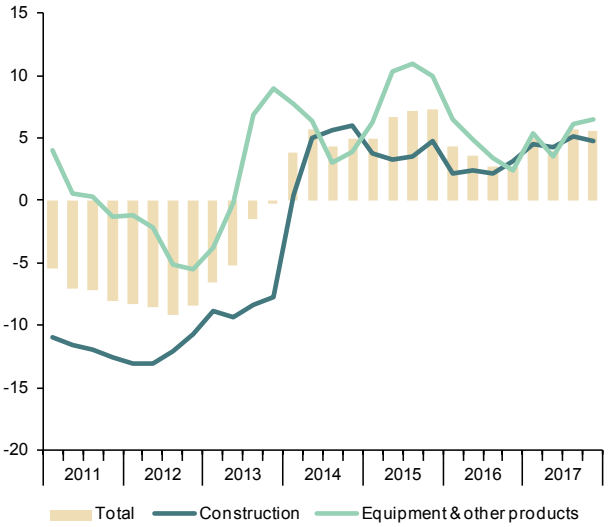


Table 2

National accounts: Gross value added by economic activity SWDA* (ESA 2010, Base 2010)

		Gross value added at basic prices								
				Industry			Services			
		Total	Agriculture, forestry and fishing	Total	Manufacturing	Construction	Total	Public administration, health, education	Other services	Taxes less subsidies on products
		Chain-linked volumes, annual percentage changes								
2015		2.9	-2.4	5.4	7.8	2.4	2.6	2.2	2.7	8.6
2016		3.2	6.9	3.6	3.5	1.9	3.0	2.0	3.4	4.4
2017		2.9	3.7	3.7	3.8	4.9	2.6	1.4	3.0	4.2
2016	I	3.3	7.9	4.0	5.2	1.2	3.0	2.4	3.3	5.9
	II	3.3	7.3	4.1	4.0	1.2	3.2	2.3	3.5	4.5
	III	3.2	7.4	3.1	2.7	2.3	3.1	2.0	3.4	3.7
	IV	2.9	5.2	3.0	2.3	2.8	2.8	1.3	3.3	3.6
2017	I	2.9	5.0	3.0	2.6	4.5	2.7	1.3	3.2	4.1
	II	2.9	3.7	3.4	3.5	4.9	2.6	1.2	3.1	4.6
	III	2.9	4.2	3.9	4.3	4.9	2.5	1.3	2.9	4.2
	IV	3.0	2.0	4.6	4.7	5.4	2.5	1.6	2.8	3.7
		Chain-linked volumes, quarter-on-quarter percentage changes, at annual rate								
2016	I	3.3	11.0	3.6	1.8	-0.1	3.1	1.9	3.6	0.8
	II	3.0	3.8	2.9	1.4	2.8	3.1	1.3	3.7	4.6
	III	2.7	2.5	0.8	0.5	4.7	3.1	1.2	3.7	4.4
	IV	2.6	3.8	4.9	5.4	4.2	1.9	0.9	2.2	4.5
2017	I	3.2	9.9	3.3	3.0	6.4	2.7	1.7	3.1	2.8
	II	3.2	-1.3	4.8	5.0	4.5	2.8	1.2	3.4	7.0
	III	2.8	4.5	2.6	3.9	4.6	2.7	1.5	3.1	2.6
	IV	2.7	-4.4	7.6	6.9	6.2	1.6	2.1	1.4	2.6
		Current prices EUR billions)	Percentage of value added at basic prices							
2011		972.9	2.5	17.5	13.5	7.5	72.5	18.7	53.8	8.8
2012		1,025.6	2.5	17.4	13.2	6.7	73.5	18.5	54.9	9.0
2013		1,006.1	2.8	17.5	13.4	5.8	74.0	19.0	55.0	9.6
2014		989.9	2.7	17.6	13.7	5.6	74.1	18.8	55.4	9.9
2015		983.7	2.8	18.0	14.2	5.6	73.6	18.8	54.8	10.2
2016		954.0	2.8	17.9	14.2	5.6	73.8	18.7	55.0	10.2
2017		935.6	2.9	18.1	14.4	5.8	73.3	18.3	55.0	10.3

* *Seasonally and Working Day Adjusted.*

Source: INE (Quarterly National Accounts) *and Funcas* (Forecasts).

Chart 2.1 - GVA by sectors

Annual percentage change

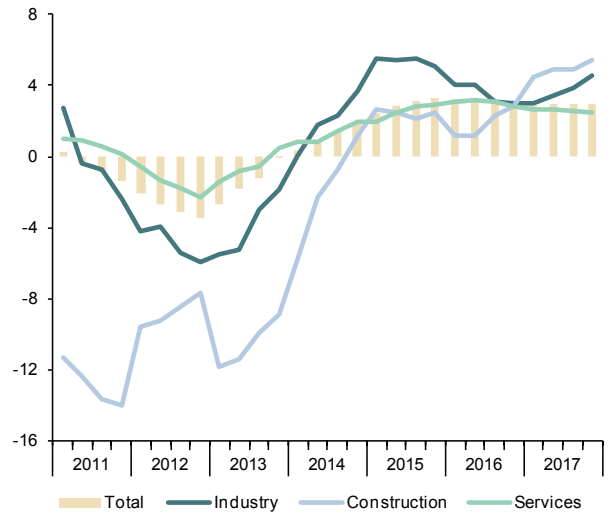


Chart 2.2 - GVA, Industry

Annual percentage change

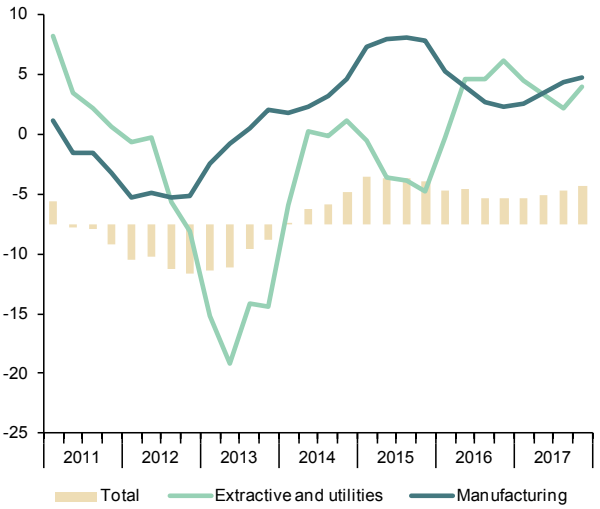


Chart 2.3 - GVA, services

Annual percentage change

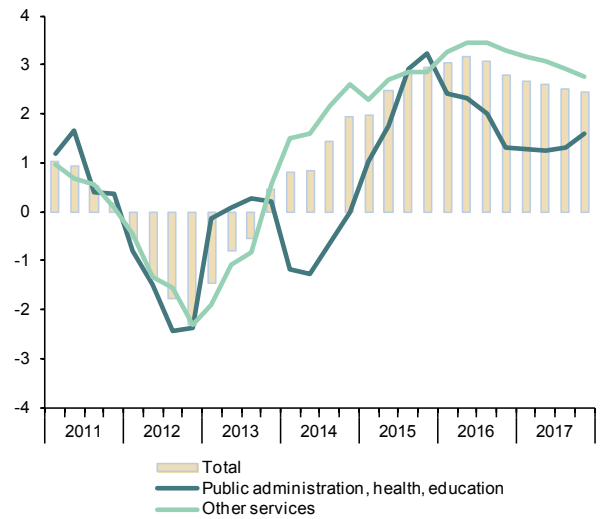


Chart 2.4 - GVA, structure by sectors

Percentage of value added at basic prices

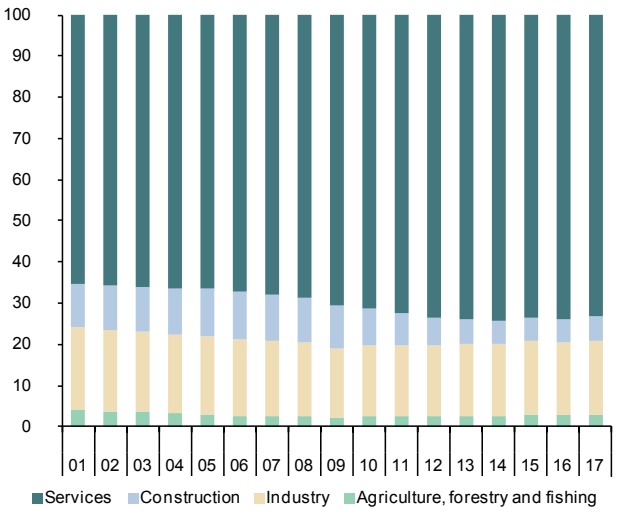


Table 3

National accounts: Productivity and labour costs (ESA 2010, Base 2010)

Forecasts in yellow

		Total economy						Manufacturing Industry					
		GDP, constant prices	Employment (jobs, full time equivalent)	Employment productivity	Compensation per job	Nominal unit labour cost	Real unit labour cost (a)	Gross value added, constant prices	Employment (jobs, full time equivalent)	Employment productivity	Compensation per job	Nominal unit labour cost	Real unit labour cost (a)
		1	2	3=1/2	4	5=4/3	6	7	8	9=7/8	10	11=10/9	12
		Indexes, 2000 = 100, SWDA											
2011		123.3	110.8	111.3	147.1	132.2	98.4	98.8	75.9	130.1	159.0	122.1	95.3
2012		119.7	105.5	113.5	146.2	128.9	95.9	93.7	70.3	133.2	161.6	121.4	94.4
2013		117.6	101.9	115.5	148.2	128.4	95.2	93.5	67.0	139.6	164.2	117.6	91.5
2014		119.3	103.0	115.9	148.4	128.1	95.1	96.2	66.1	145.5	165.1	113.5	88.1
2015		123.4	106.2	116.2	150.8	129.8	95.8	103.7	68.0	152.5	167.3	109.7	85.4
2016		127.4	109.4	116.5	150.3	129.0	95.0	107.4	70.2	152.9	167.6	109.6	85.5
2017		131.3	112.5	116.7	150.5	128.9	94.0	111.4	72.5	153.7	168.5	109.7	84.1
2018		134.9	115.2	117.1	152.0	129.8	93.3	--	--	--	--	--	--
2019		138.1	117.6	117.5	153.5	130.7	92.7	--	--	--	--	--	--
2016	I	126.0	108.3	116.3	150.1	129.0	95.3	106.7	69.5	153.6	167.3	108.9	85.2
	II	127.0	109.0	116.5	150.5	129.2	95.3	107.0	69.8	153.3	167.5	109.2	85.4
	III	127.9	109.9	116.4	150.1	128.9	94.9	107.2	70.4	152.1	167.7	110.2	85.9
	IV	128.8	110.4	116.7	150.6	129.0	94.5	108.6	71.2	152.6	167.9	110.0	85.3
2017	I	129.8	111.1	116.8	150.6	128.9	94.6	109.4	71.6	152.8	168.4	110.2	84.7
	II	130.9	112.2	116.7	150.2	128.7	94.0	110.8	72.2	153.5	168.3	109.6	84.0
	III	131.8	113.0	116.6	150.5	129.0	94.0	111.8	72.8	153.7	168.5	109.7	84.3
	IV	132.7	113.5	116.9	150.8	129.0	93.4	113.7	73.5	154.7	168.8	109.1	83.3
		Annual percentage changes											
2011		3.8	-2.8	6.7	0.9	-5.5	-5.5	1.9	-3.8	5.9	2.2	-3.5	-5.5
2012		-2.9	-4.8	2.0	-0.6	-2.5	-2.6	-5.2	-7.4	2.3	1.7	-0.6	-1.0
2013		-1.7	-3.4	1.8	1.4	-0.4	-0.7	-0.2	-4.8	4.8	1.6	-3.1	-3.0
2014		1.4	1.0	0.3	0.1	-0.2	0.0	3.0	-1.3	4.3	0.6	-3.5	-3.8
2015		3.4	3.2	0.3	1.6	1.4	0.7	7.8	2.8	4.8	1.3	-3.4	-3.0
2016		3.3	3.0	0.3	-0.3	-0.6	-0.9	3.5	3.3	0.2	0.2	-0.1	0.1
2017		3.1	2.8	0.2	0.1	-0.1	-1.0	3.8	3.3	0.5	0.6	0.1	-1.6
2018		2.8	2.4	0.3	1.0	0.7	-0.7	--	--	--	--	--	--
2019		2.4	2.1	0.3	1.0	0.7	-0.7	--	--	--	--	--	--
2016	I	6.5	3.4	3.0	-0.4	-3.3	-3.3	5.2	3.5	1.7	0.4	-1.3	-0.1
	II	6.9	2.8	4.0	-0.1	-3.9	-4.2	4.0	2.8	1.1	0.1	-1.0	-0.6
	III	7.0	3.1	3.8	-0.4	-4.1	-4.4	2.7	3.1	-0.3	0.2	0.6	0.3
	IV	6.9	2.7	4.1	-0.5	-4.3	-4.8	2.3	3.8	-1.4	0.0	1.5	0.6
2017	I	3.0	2.6	0.4	0.3	0.0	-0.8	2.6	3.1	-0.5	0.7	1.2	-0.7
	II	3.1	2.9	0.2	-0.2	-0.3	-1.3	3.5	3.4	0.1	0.5	0.4	-1.7
	III	3.1	2.9	0.2	0.3	0.0	-0.9	4.3	3.3	1.0	0.5	-0.5	-1.9
	IV	3.1	2.9	0.2	0.2	0.0	-1.2	4.7	3.3	1.4	0.6	-0.8	-2.2

(a) Nominal ULC deflated by GDP/GVA deflator.

Source: INE (Quarterly National Accounts) *and Funcas* (Forecasts).

Chart 3.1 - Nominal ULC, total economy

Index, 2000=100

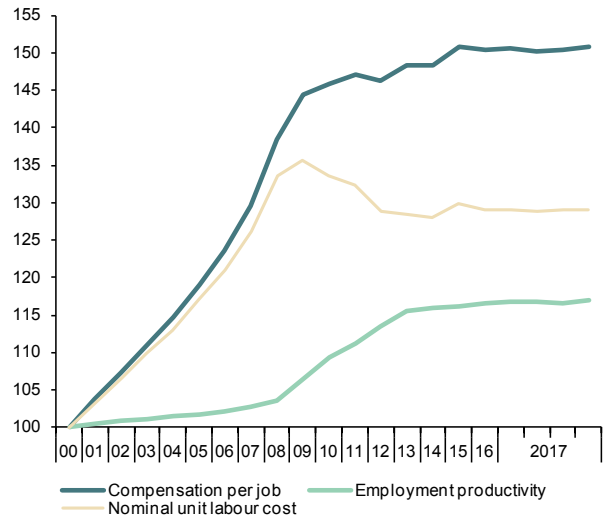
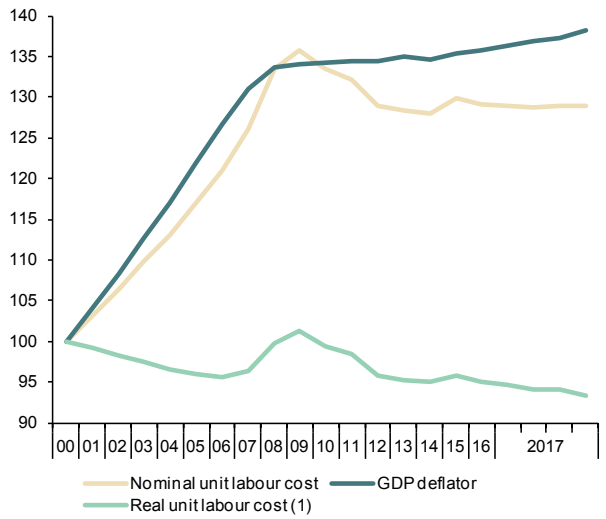


Chart 3.2 - Real ULC, total economy

Index, 2000=100



(1) Nominal ULC deflated by GDP deflator.

Chart 3.3 - Nominal ULC, manufacturing industry

Index, 2000=100

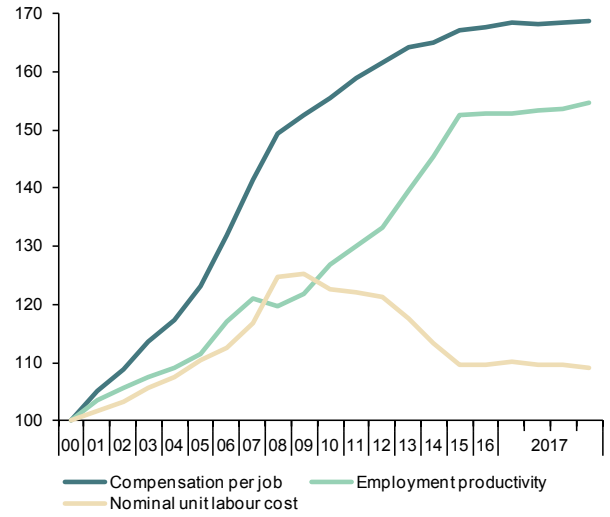
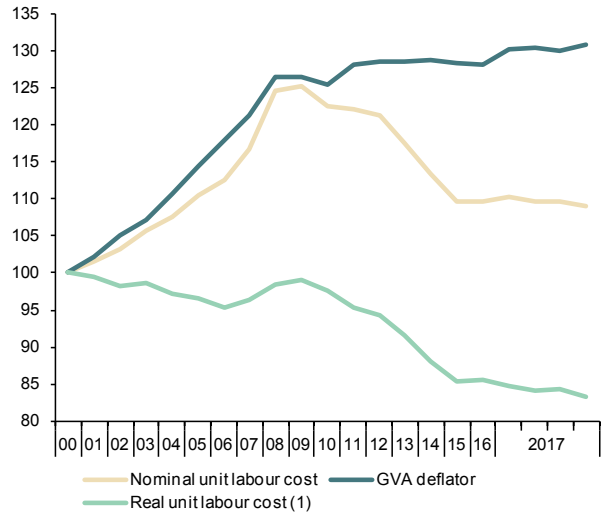


Chart 3.4 - Real ULC, manufacturing industry

Index, 2000=100



(1) Nominal ULC deflated by GDP deflator.

Table 4

National accounts: National income, distribution and disposition (ESA 2010, Base 2010)

Forecasts in yellow

		Gross domestic product	Compen-sation of employees	Gross operating surplus	Gross national product	Gross national income	Final national consumption	Gross national saving (a)	Gross capital formation	Compen-sation of employees	Gross operating surplus	Saving rate	Investment rate	Current account balance
		EUR Billions, 4-quarter cumulated transactions								Percentage of GDP				
2010		1,080.9	541.5	445.8	1,065.8	1,053.1	840.5	212.6	254.5	50.1	41.2	19.7	23.5	-3.9
2011		1,070.4	531.0	449.3	1,051.9	1,037.7	838.6	199.2	234.5	49.6	42.0	18.6	21.9	-3.3
2012		1,039.8	498.8	446.7	1,032.5	1,019.9	816.6	203.3	207.9	48.0	43.0	19.5	20.0	-0.4
2013		1,025.7	485.3	440.4	1,020.4	1,007.3	800.4	206.9	191.9	47.3	42.9	20.2	18.7	1.5
2014		1,037.8	491.6	441.8	1,034.4	1,023.0	810.7	212.2	201.9	47.4	42.6	20.4	19.5	1.0
2015		1,080.0	517.8	449.1	1,077.7	1,066.5	835.3	231.2	220.2	47.9	41.6	21.4	20.4	1.0
2016		1,118.5	532.9	471.0	1,118.3	1,105.9	855.6	250.3	229.2	47.6	42.1	22.4	20.5	1.9
2017		1,163.7	550.3	493.6	1,163.5	1,153.1	886.6	266.5	246.1	47.3	42.4	22.9	21.1	1.8
2018		1,212.7	570.7	515.3	1,214.4	1,203.2	915.7	287.4	265.3	47.1	42.5	23.7	21.9	1.8
2019		1,258.3	589.6	535.7	1,260.0	1,248.8	943.5	305.3	281.6	46.9	42.6	24.3	22.4	1.9
2016	I	1,088.5	521.7	454.7	1,086.8	1,075.9	840.0	235.9	223.3	47.9	41.8	21.7	20.5	1.2
	II	1,099.6	525.7	460.4	1,097.0	1,086.8	844.9	241.9	226.3	47.8	41.9	22.0	20.6	1.4
	III	1,109.4	529.7	465.1	1,108.0	1,096.4	850.0	246.4	227.7	47.7	41.9	22.2	20.5	1.7
	IV	1,118.5	532.9	471.0	1,118.3	1,105.9	855.6	250.3	229.2	47.6	42.1	22.4	20.5	1.9
2017	I	1,129.5	536.6	476.3	1,130.1	1,118.9	864.5	254.4	232.9	47.5	42.2	22.5	20.6	1.9
	II	1,140.6	540.5	482.1	1,140.9	1,129.1	871.8	257.3	236.1	47.4	42.3	22.6	20.7	1.9
	III	1,151.1	545.4	486.6	1,151.5	1,139.8	878.4	261.4	240.7	47.4	42.3	22.7	20.9	1.8
	IV	1,163.7	550.3	493.6	1,163.5	1,153.1	886.6	266.5	246.1	47.3	42.4	22.9	21.1	1.8
		Annual percentage changes								Difference from one year ago				
2010		0.2	-1.4	-2.0	0.6	0.8	1.7	-2.8	-4.0	-0.8	-0.9	-0.6	-1.0	0.4
2011		-1.0	-1.9	0.8	-1.3	-1.5	-0.2	-6.3	-7.9	-0.5	0.7	-1.1	-1.6	0.6
2012		-2.9	-6.1	-0.6	-1.8	-1.7	-2.6	2.1	-11.3	-1.6	1.0	0.9	-1.9	2.9
2013		-1.4	-2.7	-1.4	-1.2	-1.2	-2.0	1.8	-7.7	-0.7	0.0	0.6	-1.3	1.9
2014		1.2	1.3	0.3	1.4	1.6	1.3	2.6	5.2	0.1	-0.4	0.3	0.7	-0.5
2015		4.1	5.3	1.7	4.2	4.3	3.0	8.9	9.1	0.6	-1.0	1.0	0.9	0.0
2016		3.6	2.9	4.9	3.8	3.7	2.4	8.3	4.1	-0.3	0.5	1.0	0.1	0.9
2017		4.0	3.3	4.8	4.0	4.3	3.6	6.5	7.4	-0.4	0.3	0.5	0.7	-0.1
2018		4.2	3.7	4.4	4.4	4.3	3.3	7.9	7.8	-0.2	0.1	0.8	0.7	0.1
2019		3.8	3.3	4.0	3.8	3.8	3.0	6.2	6.1	-0.2	0.1	0.6	0.5	0.1
2016	I	4.0	4.9	2.4	4.1	4.2	3.0	8.8	8.6	0.4	-0.6	1.0	0.9	0.1
	II	4.0	4.4	3.3	3.8	4.0	2.8	8.1	7.8	0.2	-0.3	0.8	0.7	0.1
	III	3.9	3.8	3.7	3.8	3.8	2.6	8.1	6.1	0.0	-0.1	0.9	0.4	0.4
	IV	3.6	2.9	4.9	3.8	3.7	2.4	8.3	4.1	-0.3	0.5	1.0	0.1	0.9
2017	I	3.8	2.9	4.8	4.0	4.0	2.9	7.8	4.3	-0.4	0.4	0.8	0.1	0.7
	II	3.7	2.8	4.7	4.0	3.9	3.2	6.4	4.3	-0.4	0.4	0.6	0.1	0.4
	III	3.8	3.0	4.6	3.9	4.0	3.3	6.1	5.7	-0.4	0.4	0.5	0.4	0.1
	IV	4.0	3.3	4.8	4.0	4.3	3.6	6.5	7.4	-0.4	0.3	0.5	0.7	-0.1

(a) Including change in net equity in pension funds reserves.

Source: INE (Quarterly National Accounts) *and Funcas* (Forecasts).

Chart 4.1 - National income, consumption and saving

EUR Billions, 4-quarter cumulated

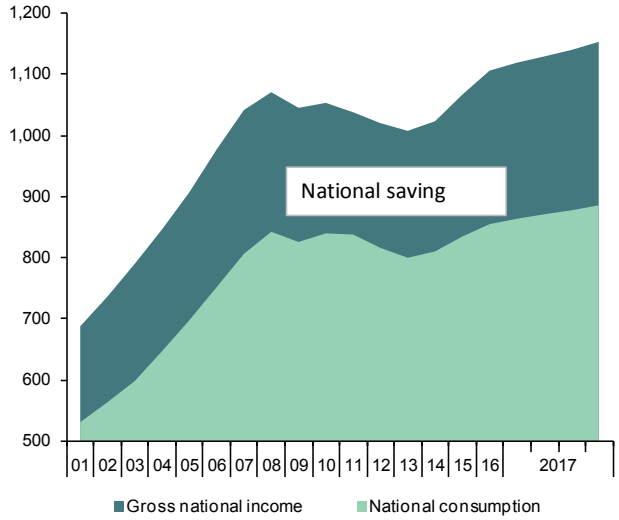


Chart 4.2 - National income, consumption and saving rate

Annual percentage change and percentage of GDP, 4-quarter moving averages

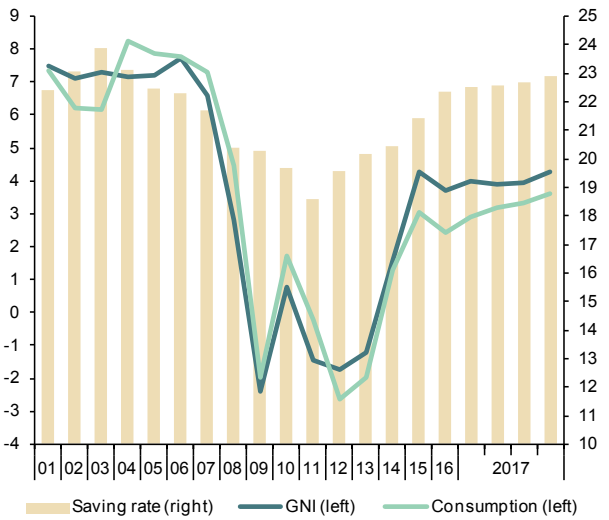


Chart 4.3 - Components of National Income

Percentage of GDP, 4-quarter moving averages

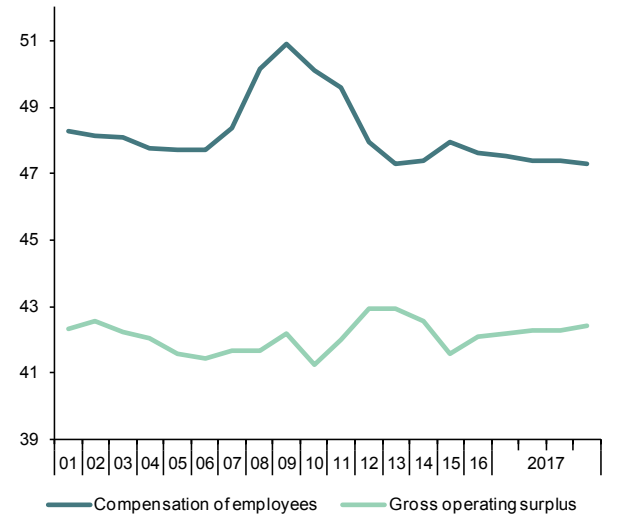


Chart 4.4 - Saving, Investment and Current Account Balance

Percentage of GDP, 4-quarter moving averages

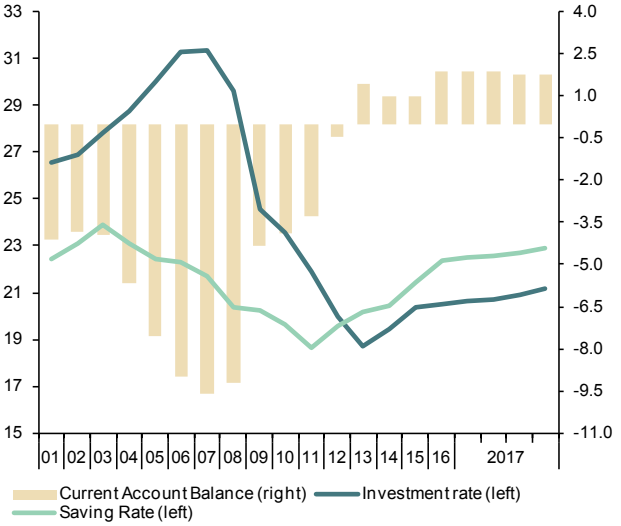


Table 5

National accounts: Household and non-finantial corporations accounts (ESA 2010, Base 2010)

Forecasts in yellow

		Households							Non-finantial corporations					
		Gross disposable income (GDI)	Final consumption expenditure	Gross saving	Gross capital formation	Saving rate (gross saving as a percentage of GDI)	Gross capital formation as a percentage of GDP	Net lending or borrowing as a percentage of GDP	Gross operating surplus	Gross saving	Gross capital formation	Saving rate (gross saving as a percentage of GDP)	Gross capital formation as a percentage of GDP	Net lending or borrowing as a percentage of GDP
		EUR Billions, 4-quarter cumulated operations												
2011		694.2	618.9	74.7	52.2	10.8	4.9	2.6	232.8	144.8	131.4	13.5	12.3	2.1
2012		670.6	611.3	57.2	38.8	8.5	3.7	2.2	234.6	144.8	136.5	13.9	13.1	1.4
2013		664.4	598.5	63.9	25.7	9.6	2.5	4.0	235.0	160.5	136.2	15.7	13.3	2.9
2014		671.8	608.7	62.1	27.0	9.2	2.6	3.4	236.9	158.8	148.5	15.3	14.3	1.8
2015		686.6	626.3	58.9	33.6	8.6	3.1	2.3	243.6	175.4	153.0	16.2	14.2	2.9
2016		700.1	644.7	54.0	35.8	7.7	3.2	1.6	258.3	194.2	166.2	17.4	14.9	3.1
2017		714.1	671.7	40.9	42.4	5.7	3.6	-0.3	272.5	205.1	176.1	17.6	15.1	2.9
2018		741.4	696.2	43.8	46.2	5.9	3.8	-0.2	282.8	215.7	190.2	17.8	15.7	2.7
2019		766.4	719.5	45.5	51.3	5.9	4.1	-0.5	293.6	225.4	200.2	17.9	15.9	2.5
2016	I	690.5	630.7	58.7	33.3	8.5	3.1	2.3	245.8	179.7	157.2	16.5	14.4	2.8
	II	694.9	634.6	59.0	34.7	8.5	3.2	2.2	250.7	187.5	158.6	17.1	14.4	3.3
	III	696.6	639.0	56.4	35.1	8.1	3.2	1.9	254.6	193.0	163.3	17.4	14.7	3.3
	IV	700.1	644.7	54.0	35.8	7.7	3.2	1.6	258.3	194.2	166.2	17.4	14.9	3.1
2017	I	702.4	652.4	48.7	37.9	6.9	3.4	0.9	261.7	199.6	168.4	17.7	14.9	3.3
	II	707.2	659.4	46.6	38.8	6.6	3.4	0.6	265.7	198.3	171.6	17.4	15.0	2.8
	III	709.5	665.0	43.3	40.4	6.1	3.5	0.1	267.9	198.9	173.0	17.3	15.0	2.7
	IV	714.1	671.7	40.9	42.4	5.7	3.6	-0.3	272.5	205.1	176.1	17.6	15.1	2.9
		Annual percentage changes				Difference from one year ago			Annual percentage changes			Difference from one year ago		
2011		0.8	0.0	7.5	-17.1	0.7	-0.9	1.3	-1.3	-10.5	-0.5	-1.4	0.1	-1.6
2012		-3.4	-1.2	-23.4	-25.6	-2.2	-1.1	-0.3	0.8	0.0	3.9	0.4	0.9	-0.7
2013		-0.9	-2.1	11.7	-33.9	1.1	-1.2	1.8	0.1	10.9	-0.2	1.7	0.2	1.4
2014		1.1	1.7	-2.9	5.1	-0.4	0.1	-0.6	0.8	-1.1	9.0	-0.3	1.0	-1.1
2015		2.2	2.9	-5.0	24.5	-0.7	0.5	-1.1	2.8	10.4	3.0	0.9	-0.1	1.1
2016		2.0	2.9	-8.4	6.5	-0.9	0.1	-0.7	6.0	10.8	8.7	1.1	0.7	0.2
2017		2.0	4.2	-24.2	18.5	-2.0	0.4	-1.8	5.5	5.6	6.0	0.3	0.3	-0.1
2018		3.8	3.6	6.9	8.9	0.2	0.2	0.0	3.8	5.2	8.0	0.2	0.5	-0.3
2019		3.4	3.3	4.0	10.9	0.0	0.3	-0.3	3.8	4.5	5.3	0.1	0.2	-0.2
2016	I	2.0	3.0	-7.7	16.4	-0.9	0.3	-1.0	2.8	9.2	4.9	0.8	0.1	0.6
	II	1.7	3.0	-10.1	17.9	-1.1	0.4	-1.2	4.2	13.2	3.0	1.4	-0.1	1.4
	III	1.3	2.8	-12.1	12.7	-1.2	0.2	-1.1	4.9	14.4	6.9	1.6	0.4	0.9
	IV	2.0	2.9	-8.4	6.5	-0.9	0.1	-0.7	6.0	10.8	8.7	1.1	0.7	0.2
2017	I	1.7	3.4	-17.0	13.9	-1.6	0.3	-1.4	6.4	11.1	7.1	1.2	0.5	0.5
	II	1.8	3.9	-21.1	12.0	-1.9	0.3	-1.6	6.0	5.7	8.2	0.3	0.6	-0.5
	III	1.8	4.1	-23.2	15.2	-2.0	0.3	-1.8	5.2	3.1	5.9	-0.1	0.3	-0.6
	IV	2.0	4.2	-24.2	18.5	-2.0	0.4	-1.8	5.5	5.6	6.0	0.3	0.3	-0.1

Source: INE (Quarterly National Accounts) *and Funcas* (Forecasts).

Chart 5.1 - Households: Net lending or borrowing

Percentage of GDP, 4-quarter moving averages

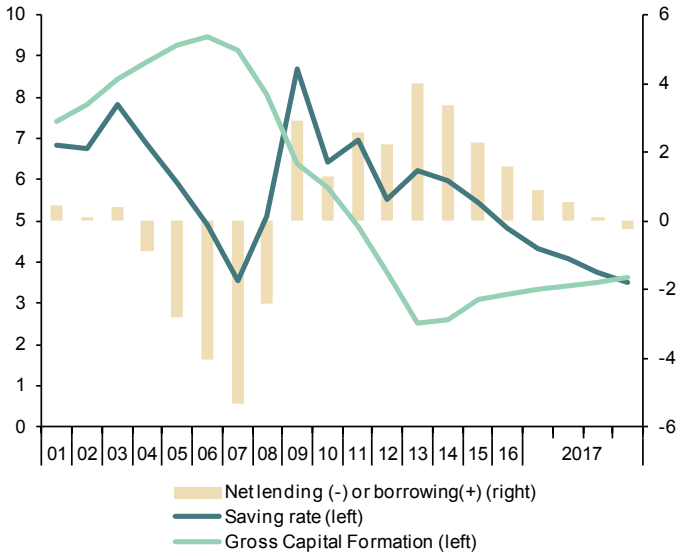


Chart 5.2 - Non-finantial corporations: Net lending or borrowing

Percentage of GDP, 4-quarter moving averages

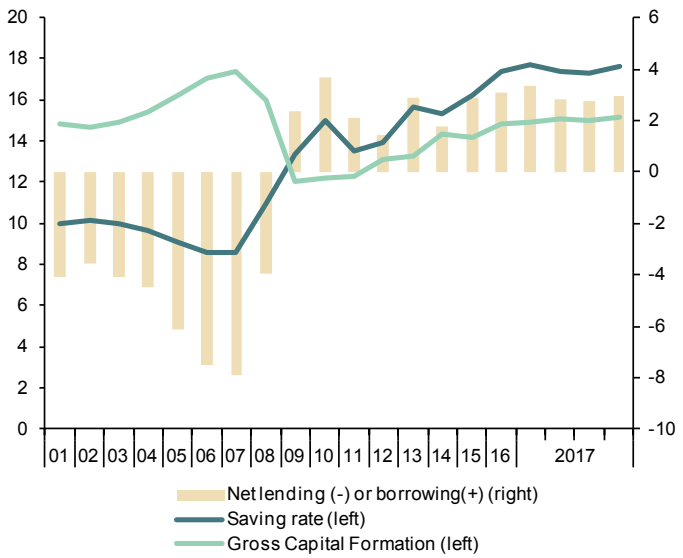


Table 6

National accounts: Public revenue, expenditure and deficit (ESA 2010, Base 2010)

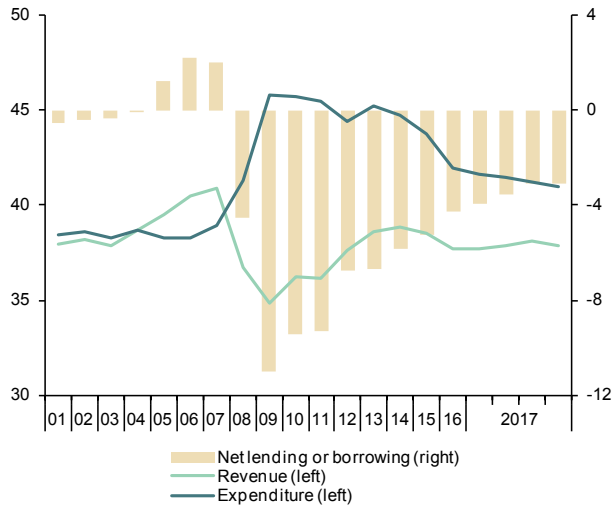
Forecasts in yellow

		Gross value added	Taxes on production and imports receivable	Taxes on income and weath receivable	Social contribu-tions receivable	Compen-sation of employees	Interests and other capital incomes payable (net)	Social bene-fits payable	Subsidies and net current transfers payable	Gross disposable income	Final consump-tion expendi-ture	Gross saving	Net capital expenditure	Net lending(+)/ net borrowing(-)	Net lending(+)/ net borrowing (-) excluding financial entities bail-out expenditures
		1	2	3	4	5	6	7	8	9=1+2+3+4-5-6-7-8	10	11=9-10	12	13=11-12	14
		EUR Billions, 4-quarter cumulated operations													
2011		150.3	106.2	102.0	137.8	122.6	16.2	164.2	22.5	170.8	219.7	-48.9	54.3	-103.2	-99.7
2012		142.2	108.2	106.4	131.9	113.9	20.3	168.6	18.6	167.2	205.3	-38.1	70.8	-108.8	-70.6
2013		143.0	114.6	105.2	128.2	114.7	24.1	170.8	20.6	160.8	201.9	-41.1	30.6	-71.7	-68.4
2014		143.4	119.2	105.6	130.1	115.2	25.7	171.1	20.6	165.7	202.0	-36.3	25.6	-61.9	-60.6
2015		147.5	127.0	109.2	132.3	119.4	24.4	170.6	21.3	180.3	208.9	-28.6	28.4	-57.0	-56.5
2016		149.4	128.8	110.8	136.2	121.3	23.1	173.8	20.8	186.2	210.9	-24.7	25.7	-50.4	-48.0
2017		151.4	134.4	118.8	142.9	122.8	22.6	177.9	19.9	204.3	214.8	-10.6	25.7	-36.2	-35.8
2018		154.4	143.0	120.5	147.7	126.3	19.1	180.4	21.7	218.2	219.5	-1.3	25.2	-26.5	-26.5
2019		157.1	150.0	124.6	152.3	128.9	20.0	185.3	22.3	227.4	224.0	3.4	26.0	-22.6	-22.6
2016	I	147.4	126.2	106.9	132.9	119.3	23.9	171.1	20.7	178.5	209.4	-30.9	26.9	-57.8	-57.4
	II	148.4	127.3	105.0	134.1	120.4	23.5	172.5	19.3	179.1	210.3	-31.2	26.9	-58.1	-56.1
	III	149.2	128.4	107.0	135.2	121.1	23.2	173.1	20.7	181.7	211.1	-29.4	24.7	-54.1	-51.8
	IV	149.4	128.8	110.8	136.2	121.3	23.1	173.8	20.8	186.2	210.9	-24.7	25.7	-50.4	-48.0
2017	I	150.0	130.6	111.9	137.9	121.8	23.0	174.3	19.4	191.9	212.1	-20.2	26.9	-47.1	-44.5
	II	149.9	132.4	115.0	139.6	121.6	22.8	175.3	20.3	196.8	212.5	-15.6	26.0	-41.6	-40.6
	III	150.6	133.7	118.6	141.3	122.2	22.6	176.2	20.3	203.0	213.5	-10.5	25.8	-36.3	-35.7
	IV	151.4	134.4	118.8	142.9	122.8	22.6	177.9	19.9	204.3	214.8	-10.6	25.7	-36.2	-35.8
		Percentage of GDP, 4-quarter cumulated operations													
2011		14.0	9.9	9.5	12.9	11.5	1.5	15.3	2.1	16.0	20.5	-4.6	5.1	-9.6	-9.3
2012		13.7	10.4	10.2	12.7	11.0	2.0	16.2	1.8	16.1	19.7	-3.7	6.8	-10.5	-6.8
2013		13.9	11.2	10.3	12.5	11.2	2.3	16.6	2.0	15.7	19.7	-4.0	3.0	-7.0	-6.7
2014		13.8	11.5	10.2	12.5	11.1	2.5	16.5	2.0	16.0	19.5	-3.5	2.5	-6.0	-5.8
2015		13.7	11.8	10.1	12.3	11.1	2.3	15.8	2.0	16.7	19.3	-2.6	2.6	-5.3	-5.2
2016		13.4	11.5	9.9	12.2	10.8	2.1	15.5	1.9	16.6	18.9	-2.2	2.3	-4.5	-4.3
2017		13.0	11.5	10.2	12.3	10.6	1.9	15.3	1.7	17.6	18.5	-0.9	2.2	-3.1	-3.1
2018		12.7	11.8	9.9	12.2	10.4	1.6	14.9	1.8	18.0	18.1	-0.1	2.1	-2.2	-2.2
2019		12.5	11.9	9.9	12.1	10.2	1.6	14.7	1.8	18.1	17.8	0.3	2.1	-1.8	-1.8
2016	I	13.5	11.6	9.8	12.2	11.0	2.2	15.7	1.9	16.4	19.2	-2.8	2.5	-5.3	-5.3
	II	13.5	11.6	9.5	12.2	11.0	2.1	15.7	1.8	16.3	19.1	-2.8	2.4	-5.3	-5.1
	III	13.4	11.6	9.6	12.2	10.9	2.1	15.6	1.9	16.4	19.0	-2.7	2.2	-4.9	-4.7
	IV	13.4	11.5	9.9	12.2	10.8	2.1	15.5	1.9	16.6	18.9	-2.2	2.3	-4.5	-4.3
2017	I	13.3	11.6	9.9	12.2	10.8	2.0	15.4	1.7	17.0	18.8	-1.8	2.4	-4.2	-3.9
	II	13.1	11.6	10.1	12.2	10.7	2.0	15.4	1.8	17.3	18.6	-1.4	2.3	-3.6	-3.6
	III	13.1	11.6	10.3	12.3	10.6	2.0	15.3	1.8	17.6	18.5	-0.9	2.2	-3.2	-3.1
	IV	13.0	11.5	10.2	12.3	10.6	1.9	15.3	1.7	17.6	18.5	-0.9	2.2	-3.1	-3.1

Source: INE (Quarterly National Accounts) *and Funcas* (Forecasts).

Chart 6.1 - Public sector: Revenue, expenditure and deficit (a)

Percentage of GDP, 4-quarter moving averages



(a) Excluding financial entities bail-out expenditures

Chart 6.2 - Public sector: Main revenues

Percentage of GDP, 4-quarter moving averages

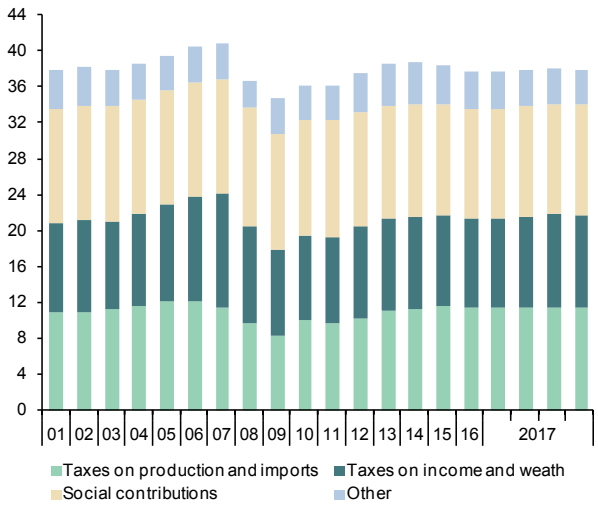


Chart 6.3.- Public sector: Main expenditures

Percentage of GDP, 4-quarter moving averages

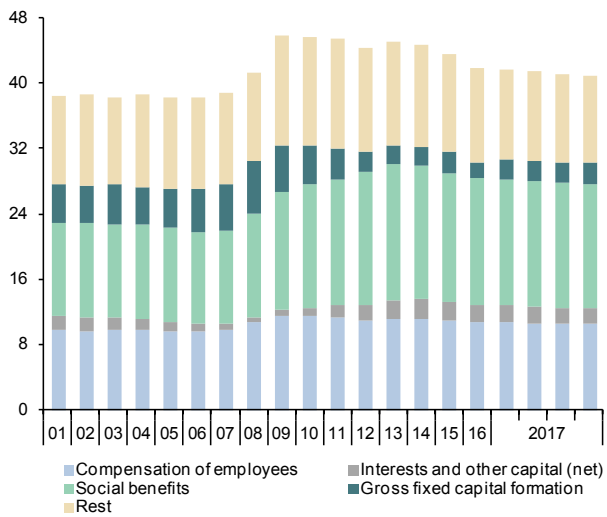
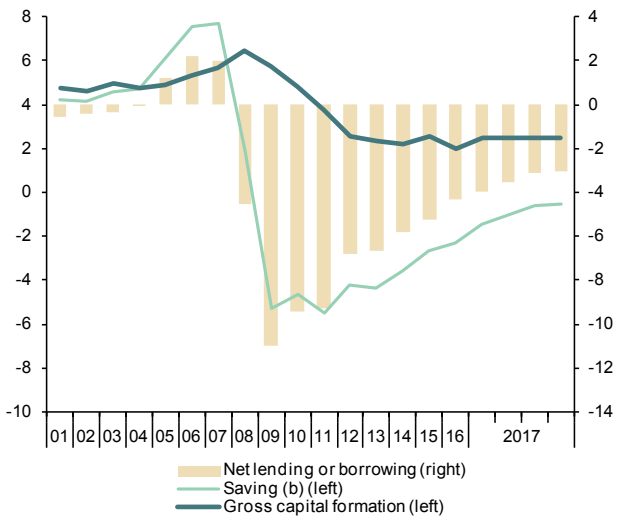


Chart 6.4 - Public sector: Saving, investment and deficit (a)

Percentage of GDP, 4-quarter moving averages



(a) Excluding financial entities bail-out expenditures
(b) Including net capital transfers

Table 7

Public sector balances, by level of Government

Forecasts in yellow

		Net lending (+)/ net borrowing (-) (a)					Debt				
		Central Government	Regional Governments	Local Governments	Social Security	TOTAL Government	Central Government	Regional Governments	Local Governments	Social Security	Total Government (consolidated)
		EUR Billions, 4-quarter cumulated operations					EUR Billions, end of period				
2011		-35.3	-54.8	-8.5	-1.1	-99.7	624.2	145.9	36.8	17.2	744.3
2012		-44.3	-19.4	3.3	-10.2	-70.6	761.9	189.2	44.0	17.2	891.5
2013		-46.4	-16.2	5.7	-11.5	-68.4	850.2	210.5	42.1	17.2	979.0
2014		-36.8	-18.5	5.5	-10.8	-60.6	902.5	237.9	38.3	17.2	1,041.6
2015		-29.3	-18.7	4.6	-13.0	-56.5	940.4	263.3	35.2	17.2	1,073.9
2016		-27.8	-9.3	6.8	-17.8	-48.0	969.6	277.0	32.2	17.2	1,107.2
2017		-21.7	-3.7	6.8	-17.2	-35.8	1,010.8	288.1	29.0	27.4	1,144.3
2018		-13.2	-1.2	6.1	-18.2	-26.5	--	--	--	--	1,171.1
2019		-10.9	-0.4	5.0	-16.4	-22.6	--	--	--	--	1,192.7
2016	I	-29.7	-17.9	4.2	-14.0	-57.4	962.1	266.0	35.1	17.2	1,096.9
	II	-28.3	-16.9	4.5	-15.4	-56.1	964.7	273.5	35.1	17.2	1,107.1
	III	-33.1	-9.1	6.9	-16.6	-51.8	968.8	272.7	34.7	17.2	1,108.4
	IV	-27.8	-9.3	6.8	-17.8	-48.0	969.6	277.0	32.2	17.2	1,107.2
2017	I	-23.1	-10.4	7.1	-18.1	-44.5	986.6	279.4	31.7	17.2	1,126.3
	II	-20.4	-10.3	7.2	-17.2	-40.6	994.9	285.9	32.4	17.2	1,135.1
	III	-18.3	-6.5	7.3	-18.2	-35.7	998.8	284.4	30.5	23.2	1,133.4
	IV	-21.7	-3.7	6.8	-17.2	-35.8	1,010.8	288.1	29.0	27.4	1,144.3
		Percentage of GDP, 4-quarter cumulated operations					Percentage of GDP				
2011		-3.3	-5.1	-0.8	-0.1	-9.3	58.3	13.6	3.4	1.6	69.5
2012		-4.3	-1.9	0.3	-1.0	-6.8	73.3	18.2	4.2	1.7	85.7
2013		-4.5	-1.6	0.6	-1.1	-6.7	82.9	20.5	4.1	1.7	95.5
2014		-3.5	-1.8	0.5	-1.0	-5.8	87.0	22.9	3.7	1.7	100.4
2015		-2.7	-1.7	0.4	-1.2	-5.2	87.1	24.4	3.3	1.6	99.4
2016		-2.5	-0.8	0.6	-1.6	-4.3	86.7	24.8	2.9	1.5	99.0
2017		-1.9	-0.3	0.6	-1.5	-3.1	86.9	24.8	2.5	2.4	98.3
2018		-1.1	-0.1	0.5	-1.5	-2.2	--	--	--	--	96.6
2019		-0.9	0.0	0.4	-1.3	-1.8	--	--	--	--	94.8
2016	I	-2.7	-1.6	0.4	-1.3	-5.3	88.4	24.4	3.2	1.6	100.8
	II	-2.6	-1.5	0.4	-1.4	-5.1	87.7	24.9	3.2	1.6	100.7
	III	-3.0	-0.8	0.6	-1.5	-4.7	87.3	24.6	3.1	1.5	99.9
	IV	-2.5	-0.8	0.6	-1.6	-4.3	86.7	24.8	2.9	1.5	99.0
2017	I	-2.0	-0.9	0.6	-1.6	-3.9	87.3	24.7	2.8	1.5	99.7
	II	-1.8	-0.9	0.6	-1.5	-3.6	87.2	25.1	2.8	1.5	99.5
	III	-1.6	-0.6	0.6	-1.6	-3.1	86.8	24.7	2.7	2.0	98.5
	IV	-1.9	-0.3	0.6	-1.5	-3.1	86.9	24.8	2.5	2.4	98.3

(a) Excluding financial entities bail-out expenditures.

Sources: National Statistics Institute, Bank of Spain (Financial Accounts of the Spanish Economy), *and Funcas* (Forecasts).

Chart 7.1 - Government deficit

Percent of GDP, 4-quarter cumulated operations

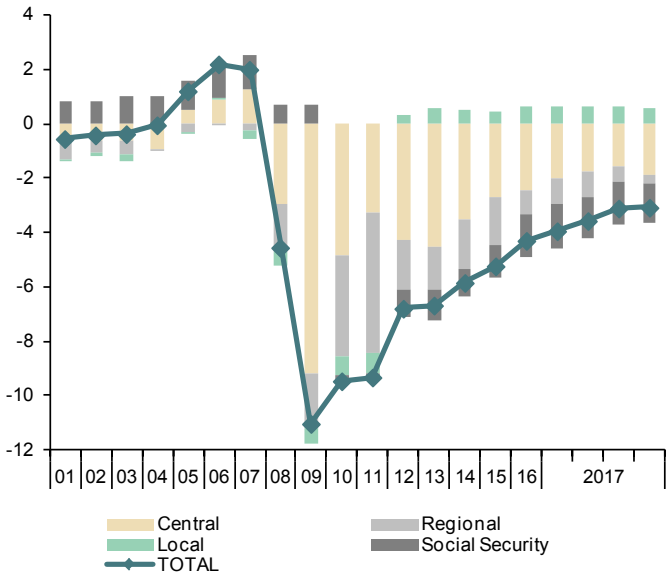


Chart 7.2 - Government debt

Percent of GDP

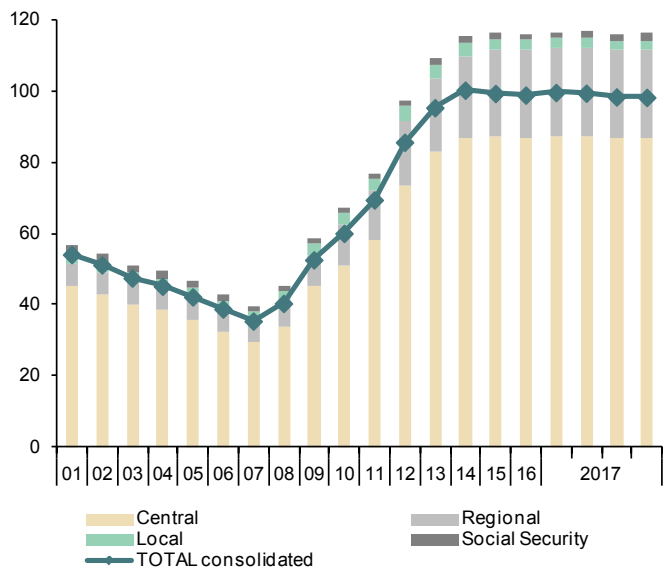


Table 8

General activity and industrial sector indicators (a)

	General activity indicators				Industrial sector indicators					
	Economic Sentiment Index	Composite PMI index	Social Security Affiliates (f)	Electricity consumption (temperature adjusted)	Industrial production index	Social Security Affiliates in industry	Manufac turing PMI index	Industrial confidence index	Manufacturing Turnover index deflated	Industrial orders
	Index	Index	Thousands	1,000 GWH (smoothed)	2010=100	Thousands	Index	Balance of responses	2010=100 (smoothed)	Balance of responses
2011	92.3	46.6	16,970.3	261.1	104.0	2,231.9	47.3	-12.5	104.7	-30.8
2012	87.6	43.1	16,335.3	255.7	97.1	2,113.9	43.8	-17.6	100.5	-37.1
2013	91.7	48.3	15,855.2	250.2	95.5	2,021.6	48.5	-14.0	97.2	-30.7
2014	101.8	55.1	16,111.1	249.7	96.8	2,022.8	53.2	-7.1	98.5	-16.3
2015	108.3	56.7	16,641.8	254.0	100.0	2,067.3	53.6	-0.3	100.0	-5.4
2016	106.0	54.9	17,157.5	254.1	101.8	2,124.7	53.1	-2.3	101.3	-5.4
2017	108.6	56.2	17,789.6	258.4	105.0	2,191.0	54.8	1.0	106.9	2.3
2018 (b)	110.2	56.3	18,028.9	92.2	107.4	2,224.2	55.1	3.0	102.5	1.1
2016 III	104.6	54.2	17,233.8	63.8	101.8	2,132.5	51.4	-3.8	101.6	-6.7
IV	106.9	55.0	17,387.6	63.9	102.6	2,147.7	54.4	-0.6	103.1	-4.2
2017 I	107.3	56.2	17,542.0	64.0	103.8	2,164.3	54.8	0.3	104.6	-3.1
II	108.1	57.4	17,726.9	64.3	104.2	2,182.7	54.9	-0.5	106.0	6.1
III	108.7	56.1	17,868.2	64.7	104.9	2,200.6	53.5	-0.1	107.3	0.5
IV	110.1	55.2	18,021.2	65.1	107.4	2,218.0	55.9	4.3	108.5	5.6
2018 I	110.0	56.6	18,158.1	65.6	106.9	2,234.3	55.3	2.8	109.3	1.1
II (b)	110.6	55.4	18,231.8	21.9	--	2,240.8	54.4	3.3	--	1.2
2018 Feb	110.2	57.1	18,161.7	21.9	106.9	2,234.6	56.0	2.4	109.5	0.0
Mar	109.0	55.8	18,199.4	21.9	108.2	2,238.8	54.8	1.9	--	4.5
Apr	110.6	55.4	18,231.8	21.9	--	2,240.8	54.4	3.3	--	1.2
					Percentage changes (c)					
2011	--	--	-1.6	-1.0	-1.6	-2.7	--	--	1.2	--
2012	--	--	-3.7	-2.1	-6.7	-5.3	--	--	-4.0	--
2013	--	--	-2.9	-2.2	-1.6	-4.4	--	--	-3.3	--
2014	--	--	1.6	-0.2	1.3	0.1	--	--	1.4	--
2015	--	--	3.3	1.7	3.4	2.2	--	--	1.5	--
2016	--	--	3.1	0.0	1.8	2.8	--	--	1.3	--
2017	--	--	3.7	1.7	3.2	3.1	--	--	5.5	--
2018 (d)	--	--	3.5	2.0	2.8	3.2	--	--	3.1	--
2016 III	--	--	4.1	0.3	2.6	3.1	--	--	4.3	--
IV	--	--	3.6	0.0	3.5	2.9	--	--	6.0	--
2017 I	--	--	3.6	1.8	4.6	3.1	--	--	6.1	--
II	--	--	4.3	1.4	1.3	3.4	--	--	5.2	--
III	--	--	3.2	0.5	3.0	3.3	--	--	5.0	--
IV	--	--	3.5	3.2	9.9	3.2	--	--	4.7	--
2018 I	--	--	3.1	1.9	-2.0	3.0	--	--	3.0	--
II (e)	--	--	1.6	2.4	--	1.2	--	--	--	--
2018 Feb	--	--	0.3	0.2	1.4	0.2	--	--	0.3	--
Mar	--	--	0.2	0.2	1.2	0.2	--	--	--	--
Apr	--	--	0.2	0.2	--	0.1	--	--	--	--

(a) Seasonally adjusted, except for annual data. (b) Period with available data. (c) Annualized percent change from the previous quarter for quarterly data, non-annualized percent change from the previous month for monthly data, unless otherwise indicated. (d) Growth of available period over the same period of the previous year. (e) Annualized growth of the average of available months over the monthly average of the previous quarter. (f) Excluding domestic service workers and non-profesional caregivers.

Sources: European Commision, Markit Economics Ltd., M. of Labour, M. of Industry, National Statistics Institute, REE and Funcas.

Chart 8.1 - General activity indicators (I)

Annualized percent change from previous period

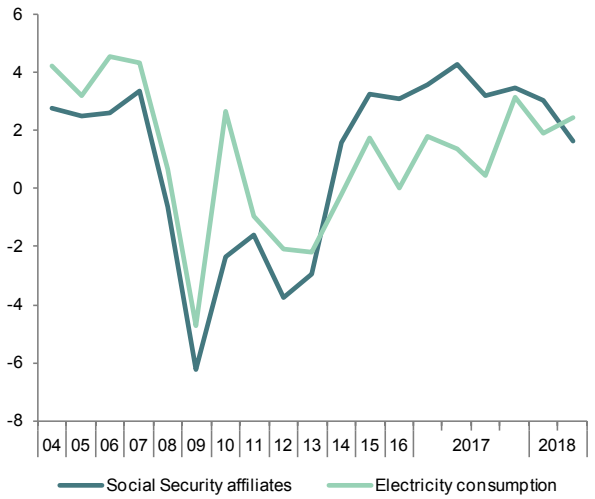


Chart 8.2.- General activity indicators (II)

Index

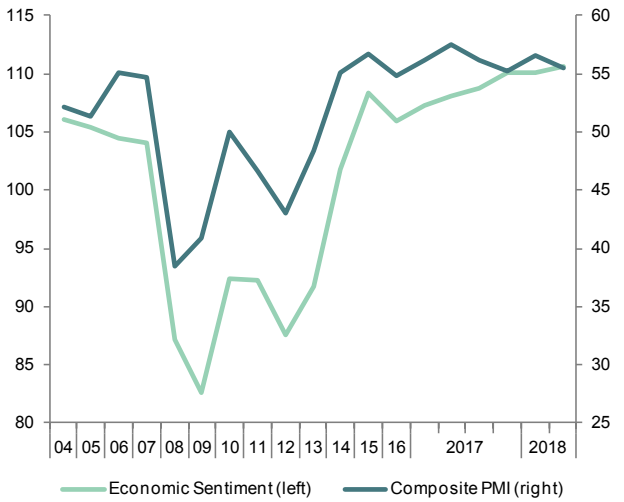


Chart 8.3 - Industrial sector indicators (I)

Annualized percent change from previous period

Chart 8.4 - Industrial sector indicators (II)

Index

Table 9

Construction and services sector indicators (a)

	Construction indicators					Service sector indicators					
	Social Security Affiliates in construction	Industrial production index construction materials	Construction confidence index	Official tenders (f)	Housing permits (f)	Social Security Affiliates in services (g)	Turnover index (nominal)	Services PMI index	Hotel overnight stays	Passenger air transport	Services confidence index
	Thousands	2010=100 (smoothed)	Balance of responses	EUR Billions (smoothed)	Million m^2	Thousands	2010=100 (smoothed)	Index	Million (smoothed)	Million (smoothed)	Balance of responses
2011	1,368.9	141.0	-55.4	13.7	14.1	12,176.1	101.0	46.5	286.8	203.3	-20.8
2012	1,135.5	101.2	-54.9	7.4	8.5	11,907.2	94.8	43.1	280.7	193.2	-21.5
2013	996.8	93.6	-55.6	9.2	6.8	11,727.9	92.9	48.3	286.0	186.5	-15.3
2014	980.3	92.8	-41.4	13.1	6.9	11,995.5	95.3	55.2	295.3	194.9	9.9
2015	1,026.7	100.0	-25.3	9.4	9.9	12,432.3	100.0	57.3	308.2	206.6	19.4
2016	1,053.9	102.6	-39.6	9.3	12.7	12,851.6	104.2	55.0	331.2	229.4	17.8
2017	1,118.8	111.5	-26.9	12.9	15.9	13,338.2	111.1	56.4	340.7	248.4	22.5
2018 (b)	1,157.6	109.0	-6.3	4.4	3.0	13,504.6	105.1	56.5	53.9	71.2	23.3
2016 III	1,059.8	103.1	-44.3	2.3	2.9	12,911.3	105.0	54.9	83.4	57.8	16.0
IV	1,071.1	106.0	-42.0	2.2	3.2	13,026.6	106.9	54.9	84.5	59.1	18.7
2017 I	1,091.0	109.0	-43.7	2.4	4.0	13,143.6	108.7	56.4	85.2	60.3	19.2
II	1,111.2	110.7	-24.7	2.8	4.2	13,286.6	110.3	57.8	85.5	61.4	23.3
III	1,126.1	111.9	-23.5	3.5	3.7	13,402.1	111.8	56.8	85.5	62.5	25.2
IV	1,147.6	113.1	-15.7	4.1	4.0	13,518.9	113.6	54.6	85.5	63.9	22.3
2018 I	1,165.7	113.5	-4.3	4.8	4.5	13,622.6	115.1	56.8	85.4	65.4	23.5
II (b)	1,172.1	--	-12.3	--	--	13,681.0	--	55.6	--	22.1	22.5
2018 Feb	1,166.4	113.5	-4.7	1.6	1.6	13,623.5	115.4	57.3	28.5	21.8	23.8
Mar	1,168.3	113.5	-5.2	1.7	--	13,658.7	--	56.2	28.4	22.0	26.6
Apr	1,172.1	--	-12.3	--	--	13,681.0	--	55.6	--	22.1	22.5
Percentage changes (c)											
2011	-12.2	-9.8	--	-47.9	-13.2	-0.1	-1.1	--	7.3	6.0	--
2012	-17.0	-28.2	--	-45.5	-39.9	-2.2	-6.1	--	-2.1	-5.0	--
2013	-12.2	-7.5	--	23.2	-20.3	-1.5	-2.0	--	1.9	-3.5	--
2014	-1.7	-0.9	--	42.6	2.2	2.3	2.6	--	3.2	4.6	--
2015	4.7	7.8	--	-28.2	42.6	3.6	4.9	--	4.4	6.0	--
2016	2.6	2.6	--	-0.7	29.0	3.4	4.2	--	7.4	11.0	--
2017	6.2	8.7	--	38.0	24.8	3.8	6.6	--	2.9	8.3	--
2018 (d)	6.7	1.8	--	118.3	19.8	3.6	6.2	--	3.5	7.6	--
2016 III	5.1	5.8	--	7.0	13.7	4.2	6.8	--	6.1	10.0	--
IV	4.3	11.5	--	10.6	19.6	3.6	7.2	--	5.4	9.6	--
2017 I	7.6	11.8	--	9.4	16.9	3.6	7.0	--	3.5	8.5	--
II	7.6	6.6	--	21.5	29.3	4.4	6.1	--	1.4	7.2	--
III	5.5	4.1	--	49.2	28.9	3.5	5.7	--	-0.1	7.5	--
IV	7.9	4.5	--	83.3	24.8	3.5	6.3	--	0.0	9.1	--
2018 I	6.4	1.5	--	101.9	19.6	3.1	5.5	--	-0.6	9.6	--
II (e)	2.2	--	--	--	--	1.7	--	--	--	6.2	--
2018 Feb	0.3	0.0	--	44.4	28.1	0.3	0.5	--	-0.1	0.8	--
Mar	0.2	0.0	--	182.8	--	0.3	--	--	-0.1	0.8	--
Apr	0.3	--	--	--	--	0.2	--	--	--	0.8	--

(a) Seasonally adjusted, except for annual data and (f). (b) Period with available data. (c) Annualized percent change from the previous quarter for quarterly data, non-annualized percent change from the previous month for monthly data, unless otherwise indicated. (d) Growth of available period over the same period of the previous year. (e) Annualized growth of the average of available months over the monthly average of the previous quarter. (f) Percent changes are over the same period of the previous year. (g) Excluding domestic service workers and non-profesional caregivers.

Sources: European Commision, Markit Economics Ltd., M. of Labour, M. of Public Works, National Statistics Institute, AENA, OFICEMEN, SEOPAN and Funcas.

Chart 9.1 - Construction indicators (I)

Annualized percentage changes from previous period and index

Chart 9.2 - Construction indicators (II)

Annualized percentage changes from previous period

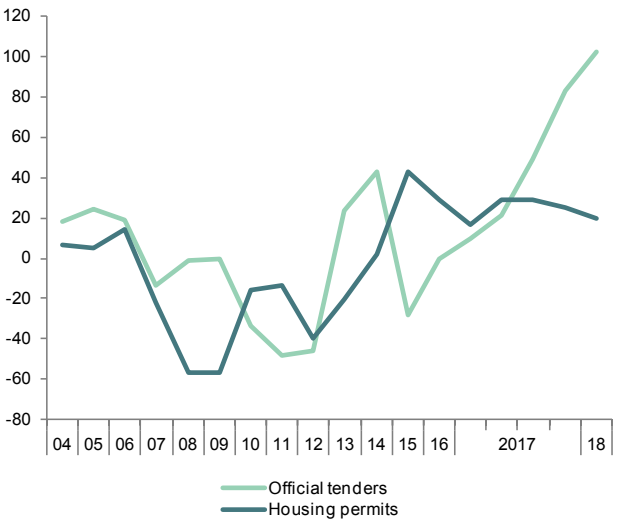


Chart 9.3 - Services indicators (I)

Percentage change from previous period

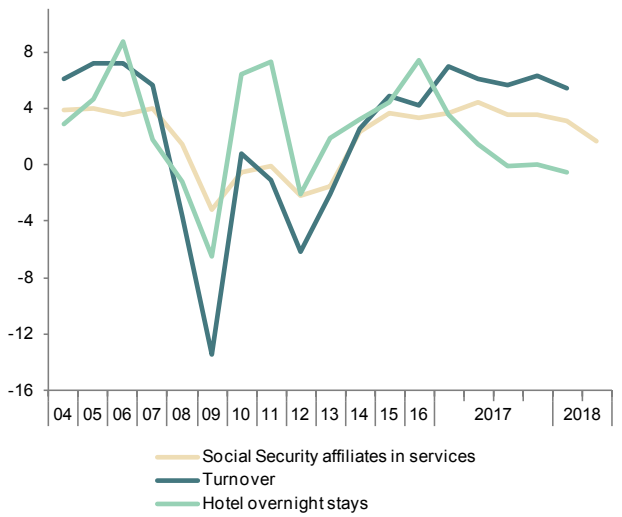


Chart 9.4 - Services indicators (II)

Index

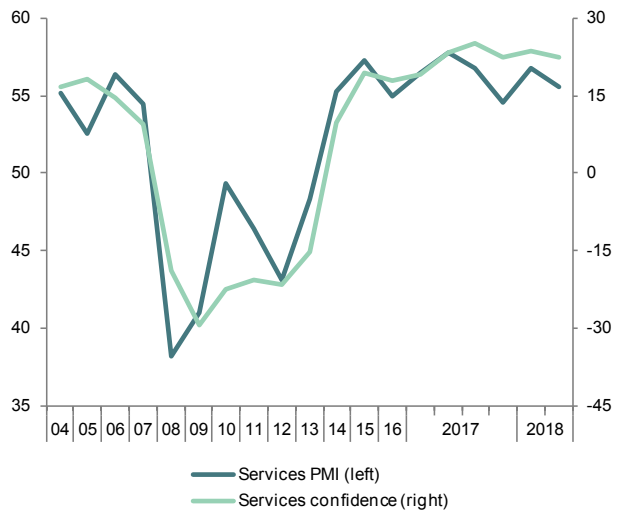


Table 10

Consumption and investment indicators (a)

		Consumption indicators					Investment in equipment indicators		
		Retail sales deflated	Car registrations	Consumer confidence index	Hotel overnight stays by residents in Spain	Industrial orders for consumer goods	Cargo vehicles registrations	Industrial orders for investment goods	Imports of capital goods (volume)
		2010=100 (smoothed)	Thousands (smoothed)	Balance of responses	Million (smoothed)	Balance of responses	Thousands (smoothed)	Balance of responses	2005=100 (smoothed)
2011		106.7	808.3	-17.1	111.5	-21.7	142.0	-23.0	68.0
2012		98.8	710.6	-31.7	102.1	-24.3	107.7	-38.6	60.6
2013		95.0	742.3	-25.3	100.6	-21.9	107.6	-33.5	68.9
2014		96.0	890.1	-8.9	104.7	-9.2	137.5	-16.5	81.6
2015		100.0	1,094.0	0.3	110.3	-3.1	180.3	0.2	93.3
2016		103.9	1,230.1	-3.8	114.2	-1.4	191.3	-0.2	97.2
2017		104.7	1,341.6	-0.7	115.6	2.0	207.6	5.2	103.3
2018 (b)		100.3	492.3	-0.6	20.7	-3.6	75.0	13.9	--
2016	III	104.0	308.3	-6.1	28.4	1.0	48.4	2.3	98.5
	IV	104.2	314.6	-3.2	28.7	2.2	49.5	-2.6	100.2
2017	I	104.4	321.1	-2.8	28.8	0.1	50.1	1.4	102.8
	II	104.7	329.0	1.5	28.8	2.5	51.3	7.6	104.2
	III	105.0	339.2	0.2	28.9	6.8	53.1	-2.0	103.5
	IV	105.3	349.5	-1.5	29.0	-1.2	54.8	13.6	102.4
2018	I	105.7	355.7	-0.6	28.9	-1.9	56.2	13.8	102.1
	II (b)	--	119.5	-0.7	--	-8.7	19.0	14.0	--
2018	Feb	105.7	118.6	0.4	9.6	-2.2	18.7	6.7	102.1
	Mar	105.8	119.0	-3.5	9.6	1.3	18.9	13.6	102.1
	Apr	--	119.5	-0.7	--	-8.7	19.0	14.0	--
		Percentage changes (c)							
2011		-5.6	-19.2	--	-1.5	--	-6.6	--	-3.2
2012		-7.4	-12.1	--	-8.4	--	-24.2	--	-10.9
2013		-3.8	4.5	--	-1.4	--	-0.1	--	13.7
2014		1.1	19.9	--	4.1	--	27.8	--	18.4
2015		4.2	22.9	--	5.3	--	31.1	--	14.4
2016		3.9	12.4	--	3.6	--	6.1	--	4.1
2017		0.8	9.1	--	1.2	--	8.5	--	6.4
2018 (d)		1.9	11.1	--	6.2	--	15.6	--	-4.5
2016	III	2.1	8.1	--	4.3	--	12.1	--	6.1
	IV	0.8	8.4	--	3.4	--	9.1	--	7.2
2017	I	0.5	8.5	--	1.5	--	5.5	--	10.9
	II	1.3	10.3	--	0.6	--	9.6	--	5.3
	III	1.2	12.9	--	0.6	--	15.1	--	-2.5
	IV	1.1	12.8	--	1.7	--	13.3	--	-4.2
2018	I	1.4	7.3	--	-0.9	--	10.2	--	-1.2
	II (e)	--	3.1	--	--	--	5.3	--	--
2018	Feb	0.1	0.4	--	-0.2	--	0.7	--	0.0
	Mar	0.1	0.4	--	-0.2	--	0.7	--	0.0
	Apr	--	0.4	--	--	--	0.6	--	--

(a) Seasonally adjusted, except for annual data. (b) Period with available data. (c) Annualized percent change from the previous quarter for quarterly data, non-annualized percent change from the previous month for monthly data, unless otherwise indicated. (d) Growth of available period over the same period of the previous year. (e) Annualized growth of the average of available months over the monthly average of the previous quarter.

Sources: European Commision, M. of Economy, M. of Industry, National Statistics Institute, DGT, ANFAC and Funcas.

Chart 10.1 - Consumption indicators

Percent change from previous period and balance of responses

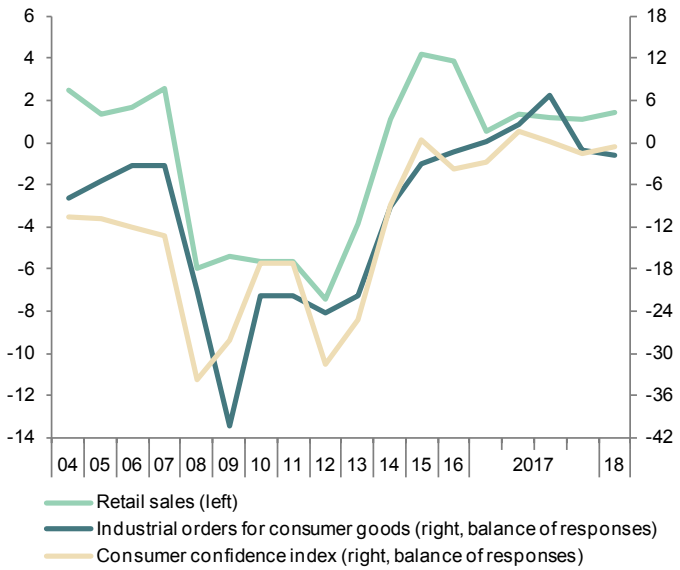


Chart 10.2 - Investment indicators

Percent change from previous period and balance of responses

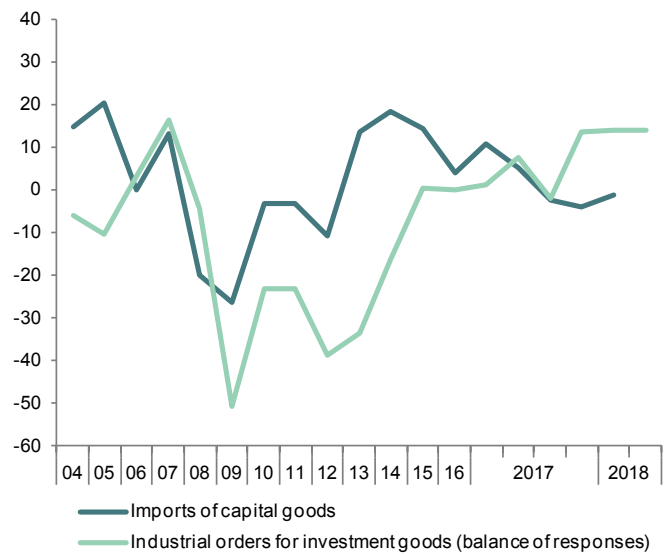


Table 11a

Labour market (I)

Forecasts in yellow

		Population aged 16-64	Labour force		Employment		Unemployment		Participation rate 16-64 (a)	Employment rate 16-64 (b)	Unemployment rate (c)			
											Total	Aged 16-24	Spanish	Foreign
			Original	Seasonally adjusted	Original	Seasonally adjusted	Original	Seasonally adjusted	Seasonally adjusted					
		1	2=4+6	3=5+7	4	5	6	7	8	9	10=7/3	11	12	13
		Million							Percentage					
2011		31.1	23.4	--	18.4	--	5.0	--	74.9	58.8	21.4	46.2	19.5	32.6
2012		30.9	23.4	--	17.6	--	5.8	--	75.3	56.5	24.8	52.9	23.0	35.9
2013		30.6	23.2	--	17.1	--	6.1	--	75.3	55.6	26.1	55.5	24.4	37.0
2014		30.3	23.0	--	17.3	--	5.6	--	75.3	56.8	24.4	53.2	23.0	34.5
2015		30.2	22.9	--	17.9	--	5.1	--	75.5	58.7	22.1	48.3	20.9	30.5
2016		30.1	22.8	--	18.3	--	4.5	--	75.4	60.5	19.6	44.4	18.7	26.6
2017		30.1	22.7	--	18.8	--	3.9	--	75.1	62.1	17.2	38.7	16.3	23.8
2018		30.1	22.7	--	19.3	--	3.4	--	74.9	63.6	15.1	--	--	--
2019		30.1	22.7	--	19.7	--	3.0	--	74.7	64.8	13.2	--	--	--
2016	II	30.1	22.9	22.8	18.3	18.3	4.6	4.6	75.5	60.2	20.0	45.7	19.0	27.5
	III	30.1	22.8	22.8	18.5	18.4	4.3	4.4	75.5	60.7	19.4	43.4	18.5	25.6
	IV	30.0	22.7	22.7	18.5	18.5	4.2	4.2	75.1	61.0	18.6	42.7	17.8	24.8
2017	I	30.0	22.7	22.7	18.4	18.6	4.3	4.1	75.0	61.5	18.1	40.8	17.3	24.1
	II	30.0	22.7	22.7	18.8	18.8	3.9	3.9	75.1	61.9	17.3	38.8	16.4	23.8
	III	30.0	22.8	22.7	19.0	18.9	3.7	3.8	75.2	62.3	16.8	37.2	15.9	23.5
	IV	30.1	22.8	22.8	19.0	19.0	3.8	3.8	75.1	62.7	16.5	37.2	15.5	23.8
2018	I	30.1	22.7	22.7	18.9	19.1	3.8	3.7	74.7	62.8	16.1	35.7	15.1	22.9
		Percentage changes (d)							Difference from one year ago					
2011		-0.2	0.3	--	-1.6	--	8.0	--	0.4	-0.9	1.5	4.7	1.4	2.7
2012		-0.5	0.0	--	-4.3	--	15.9	--	0.4	-2.3	3.4	6.7	3.5	3.3
2013		-1.1	-1.1	--	-2.8	--	4.1	--	0.0	-0.9	1.3	2.6	1.5	1.1
2014		-0.9	-1.0	--	1.2	--	-7.3	--	0.0	1.2	-1.7	-2.3	-1.4	-2.5
2015		-0.5	-0.1	--	3.0	--	-9.9	--	0.2	1.9	-2.4	-4.9	-2.1	-4.0
2016		-0.4	-0.4	--	2.7	--	-11.4	--	-0.1	1.8	-2.4	-3.9	-2.2	-3.8
2017		0.0	-0.4	--	2.6	--	-12.6	--	-0.3	1.6	-2.4	-5.8	-2.4	-2.8
2018		0.1	-0.2	--	2.4	--	-12.6	--	-0.2	1.5	-2.1	--	--	--
2019		0.2	-0.1	--	2.1	--	-12.8	--	-0.2	1.2	-1.9	--	--	--
2016	II	-0.4	-0.6	-0.5	2.4	1.2	-11.2	-6.6	-0.2	1.6	-2.4	-2.9	-2.2	-3.6
	III	-0.3	-0.2	-0.4	2.7	2.9	-10.9	-13.0	0.1	1.7	-2.3	-4.5	-2.0	-4.2
	IV	-0.3	-0.6	-1.3	2.3	2.2	-11.3	-15.2	-0.2	1.6	-2.3	-3.5	-2.1	-3.8
2017	I	-0.2	-0.6	0.1	2.3	2.9	-11.2	-11.2	-0.3	1.4	-2.3	-4.7	-2.0	-4.1
	II	-0.1	-0.6	-0.9	2.8	3.2	-14.4	-17.8	-0.5	1.7	-2.8	-7.0	-2.6	-3.7
	III	0.0	-0.3	0.7	2.8	2.7	-13.6	-8.6	-0.3	1.6	-2.5	-6.1	-2.6	-2.1
	IV	0.1	0.1	0.4	2.6	1.9	-11.1	-6.5	-0.1	1.7	-2.1	-5.4	-2.3	-1.1
2018	I	0.2	-0.1	-0.4	2.4	1.8	-10.8	-11.4	-0.3	1.3	-2.0	-5.1	-2.2	-1.1

(a) Labour force aged 16-64 over population aged 16-64. (b) Employed aged 16-64 over population aged 16-64. (c) Unemployed in each group over labour force in that group. (d) Annual percentage changes for original data; annualized quarterly percentage changes for S.A. data.

Source: INE (Labour Force Survey) *and Funcas.*

Chart 11a.1 - Labour force, Employment and unemployment, S.A.

Annual / annualized quarterly growth rates and percentage of active population

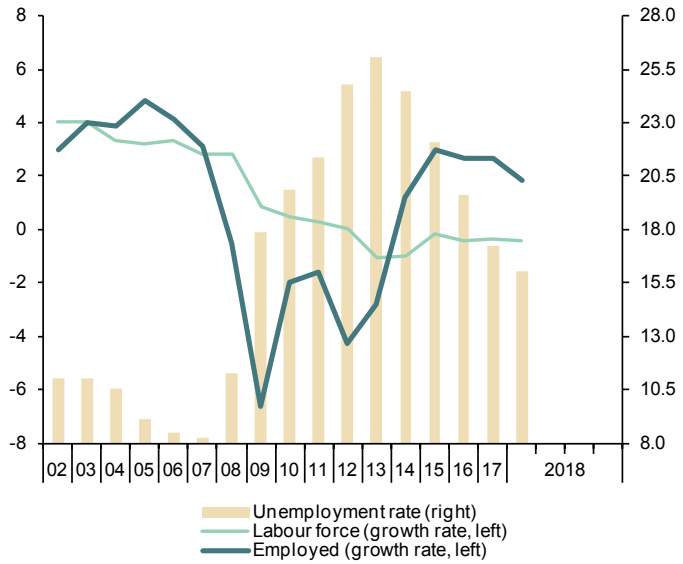


Chart 11a.2 - Unemployment rates, S.A.

Percentage

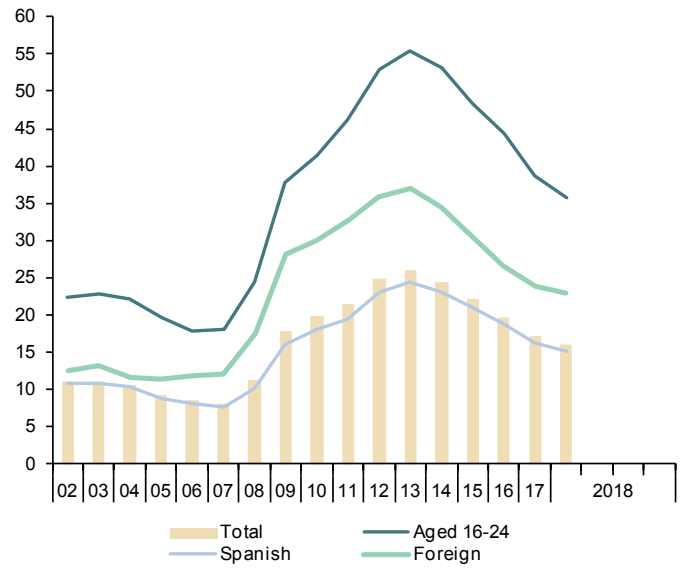


Table 11b

Labour market (II)

	Employed by sector				Employed by professional situation					Employed by duration of the working-day		
					Employees							
						By type of contract						
	Agriculture	Industry	Construction	Services	Total	Tempo-rary	Indefinite	Temporary employment rate (a)	Self employed	Full-time	Part-time	Part-time employment rate (b)
	1	2	3	4	5=6+7	6	7	8=6/5	9	10	11	12
	Million (original data)											
2009	0.79	2.81	1.89	13.62	15.88	4.00	11.88	25.2	3.23	16.71	2.40	12.54
2010	0.79	2.65	1.65	13.64	15.59	3.86	11.73	24.7	3.13	16.29	2.44	13.02
2011	0.76	2.60	1.40	13.66	15.39	3.87	11.52	25.1	3.03	15.92	2.50	13.56
2012	0.74	2.48	1.16	13.24	14.57	3.41	11.16	23.4	3.06	15.08	2.55	14.49
2013	0.74	2.36	1.03	13.02	14.07	3.26	10.81	23.1	3.07	14.43	2.71	15.80
2014	0.74	2.38	0.99	13.23	14.29	3.43	10.86	24.0	3.06	14.59	2.76	15.91
2015	0.74	2.48	1.07	13.57	14.77	3.71	11.06	25.1	3.09	15.05	2.81	15.74
2016	0.77	2.52	1.07	13.97	15.23	3.97	11.26	26.1	3.11	15.55	2.79	15.21
2017	0.82	2.65	1.13	14.23	15.72	4.19	11.52	26.7	3.11	16.01	2.82	14.97
2018 (c)	0.81	2.70	1.18	14.40	15.98	4.30	11.68	26.9	3.10	16.30	2.78	14.58
2016 II	0.76	2.50	1.07	13.94	15.16	3.90	11.26	25.7	3.11	15.52	2.75	15.07
III	0.79	2.52	1.09	14.01	15.29	4.01	11.28	26.2	3.11	15.60	2.80	15.20
IV	0.80	2.57	1.09	14.04	15.37	4.06	11.31	26.4	3.13	15.68	2.82	15.23
2017 I	0.82	2.59	1.10	14.12	15.52	4.12	11.40	26.5	3.11	15.79	2.84	15.24
II	0.83	2.64	1.12	14.18	15.66	4.19	11.47	26.8	3.12	15.96	2.82	15.03
III	0.82	2.66	1.13	14.30	15.78	4.21	11.57	26.7	3.12	16.08	2.82	14.94
IV	0.81	2.69	1.15	14.35	15.91	4.25	11.66	26.7	3.08	16.20	2.79	14.70
2018 I	0.81	2.70	1.18	14.40	15.98	4.30	11.68	26.9	3.10	16.30	2.78	14.58
	Annual percentage changes							Difference from one year ago	Annual percentage changes			Difference from one year ago
2009	-4.8	-13.3	-23.2	-2.3	-5.8	-18.4	-0.6	-3.9	-10.6	-7.5	-0.4	0.8
2010	-0.3	-5.6	-12.6	0.1	-1.8	-3.6	-1.2	-0.5	-2.9	-2.5	1.7	0.5
2011	-3.9	-1.7	-15.0	0.2	-1.3	0.3	-1.8	0.4	-3.3	-2.2	2.5	0.5
2012	-1.6	-4.6	-17.3	-3.0	-5.3	-11.8	-3.1	-1.7	1.1	-5.3	2.3	0.9
2013	-0.9	-5.2	-11.4	-1.7	-3.5	-4.6	-3.1	-0.3	0.4	-4.3	6.0	1.3
2014	-0.1	1.0	-3.5	1.7	1.5	5.3	0.4	0.9	-0.4	1.1	1.9	0.1
2015	0.1	4.3	8.1	2.6	3.4	8.3	1.9	1.1	1.1	3.2	1.9	-0.2
2016	5.1	1.6	0.0	2.9	3.1	6.8	1.8	0.9	0.7	3.3	-0.8	-0.5
2017 (d)	-1.6	4.0	6.5	2.0	3.0	4.4	2.4	0.4	-0.5	3.2	-2.1	-0.7
2016 II	2.5	0.2	-1.6	3.2	2.9	5.5	2.0	0.6	0.3	3.0	-0.5	-0.4
III	4.4	0.9	2.1	2.8	3.0	6.3	1.9	0.8	0.7	3.5	-2.0	-0.7
IV	5.2	4.1	2.2	1.9	2.7	5.9	1.6	0.8	0.6	2.8	-0.3	-0.4
2017 I	9.4	3.4	4.9	1.5	2.7	5.5	1.8	0.7	0.1	2.4	1.5	-0.1
II	9.4	5.7	5.2	1.7	3.3	7.5	1.8	1.1	0.3	2.9	2.5	0.0
III	4.2	5.4	4.3	2.1	3.2	4.9	2.6	0.4	0.6	3.1	1.0	-0.3
IV	0.7	4.6	6.1	2.1	3.5	4.6	3.1	0.3	-1.5	3.3	-1.0	-0.5
2018 I	-1.6	4.0	6.5	2.0	3.0	4.4	2.4	0.4	-0.5	3.2	-2.1	-0.7

(a) Percentage of employees with temporary contract over total employees. (b) Percentage of part-time employed over total employed. (c) Period with available data. (d) Growth of available period over the same period of the previous year.

Source: INE (Labour Force Survey).

Chart 11b 1.- Employment by sector

Annual percentage changes

Chart 11b.2 - Employment by type of contract

Annual percentage changes and percentage over total employees

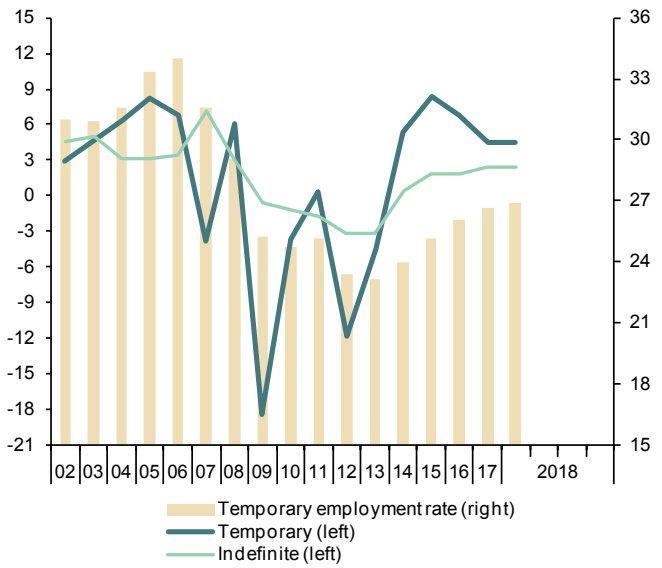


Table 12

Index of Consumer Prices

Forecasts in yellow

		Total	Total excluding food and energy	Excluding unprocessed food and energy				Unprocessed food	Energy	Food
				Total	Non-energy industrial goods	Services	Processed food			
% of total in 2018		100.00	66.15	81.20	24.82	41.33	15.06	7.34	11.46	22.40
					Indexes, 2016 = 100					
2012		99.5	97.6	97.1	99.0	96.8	94.9	93.9	121.2	94.6
2013		100.9	98.7	98.5	99.6	98.1	97.9	97.3	121.3	97.7
2014		100.7	98.7	98.6	99.2	98.3	98.2	96.0	120.3	97.6
2015		100.2	99.2	99.2	99.5	98.9	99.2	97.7	109.4	98.7
2016		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2017		102.0	101.1	101.1	100.2	101.6	100.7	102.6	108.0	101.3
2018		103.7	102.4	102.3	100.5	103.4	101.8	105.2	113.0	102.9
2019		105.2	103.7	103.5	100.8	105.3	102.7	107.5	116.2	104.2
					Annual percentage changes					
2012		2.4	1.3	1.6	0.8	1.5	3.1	2.3	8.9	2.8
2013		1.4	1.1	1.4	0.6	1.4	3.1	3.6	0.0	3.2
2014		-0.2	0.0	0.0	-0.4	0.1	0.4	-1.2	-0.8	-0.1
2015		-0.5	0.5	0.6	0.3	0.7	0.9	1.8	-9.0	1.2
2016		-0.2	0.8	0.8	0.5	1.1	0.8	2.3	-8.6	1.3
2017		2.0	1.1	1.1	0.2	1.6	0.7	2.6	8.0	1.3
2018		1.7	1.3	1.2	0.3	1.8	1.1	2.5	4.5	1.6
2019		1.4	1.2	1.2	0.3	1.8	0.9	2.2	2.9	1.3
2018	Jan	0.6	0.8	0.8	-0.2	1.3	1.1	1.6	-1.7	1.3
	Feb	1.1	1.1	1.1	0.0	1.7	1.4	0.3	1.4	1.0
	Mar	1.2	1.1	1.2	-0.1	1.9	1.3	1.6	1.3	1.4
	Apr	1.1	0.7	0.8	0.0	1.1	1.4	2.0	2.3	1.6
	May	1.7	1.1	1.1	0.0	1.8	1.2	2.1	5.4	1.5
	Jun	2.0	1.2	1.1	0.1	1.8	1.0	3.1	7.8	1.7
	Jul	2.3	1.3	1.3	0.4	1.9	0.9	3.9	8.8	1.9
	Aug	2.3	1.4	1.3	0.5	2.0	0.8	5.3	7.9	2.3
	Sep	2.3	1.5	1.4	0.6	2.1	1.1	4.3	7.2	2.1
	Oct	2.0	1.6	1.5	0.8	2.1	1.2	1.1	6.0	1.1
	Nov	1.9	1.6	1.5	0.8	2.1	1.1	2.0	4.3	1.4
	Dec	2.0	1.7	1.6	1.0	2.1	1.1	3.0	4.5	1.7
2019	Jan	1.9	1.7	1.6	0.9	2.2	1.0	3.0	3.8	1.7
	Feb	1.8	1.5	1.4	0.8	1.9	1.0	2.5	4.0	1.5
	Mar	2.1	1.6	1.5	0.8	2.1	1.0	2.2	6.4	1.4
	Apr	1.8	1.5	1.4	0.8	1.9	0.8	2.3	4.8	1.3
	May	1.6	1.4	1.3	0.7	1.9	0.8	2.2	2.9	1.3
	Jun	1.4	1.3	1.2	0.5	1.8	0.8	2.1	2.4	1.3
	Jul	1.3	1.2	1.1	0.3	1.7	0.8	2.1	2.2	1.2
	Aug	1.2	1.0	1.0	0.1	1.6	0.8	2.1	2.0	1.2
	Sep	1.1	1.0	0.9	-0.1	1.6	0.8	2.0	1.9	1.2
	Oct	1.1	0.9	0.9	-0.2	1.6	0.8	2.0	1.7	1.2
	Nov	1.0	0.9	0.9	-0.3	1.6	0.8	2.0	1.3	1.2
	Dec	0.9	0.8	0.8	-0.5	1.6	0.8	1.9	1.4	1.2

Source: INE and Funcas (Forecasts).

Chart 12.1 - Inflation Rate (I)

Annual percentage changes

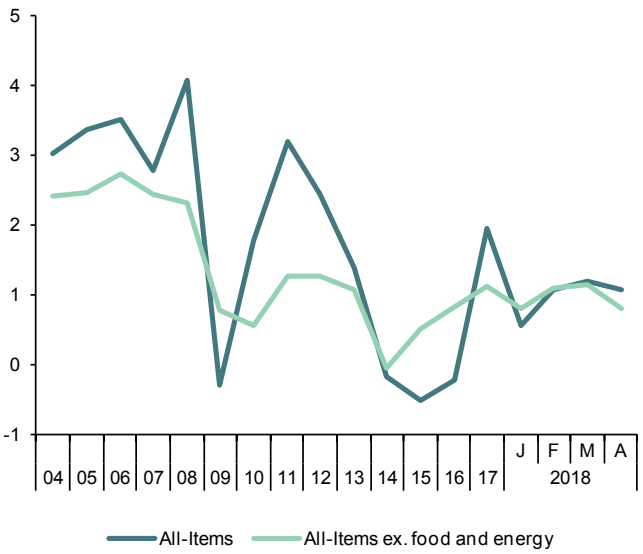


Chart 12.2 - Inflation rate (II)

Annual percentage changes

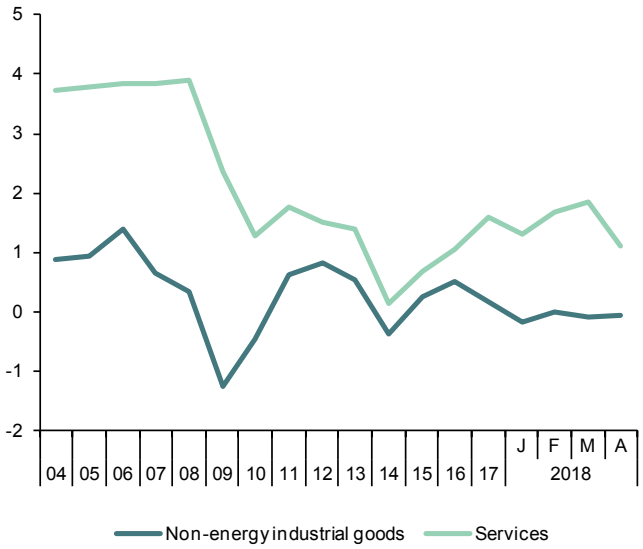


Table 13

Other prices and costs indicators

	GDP deflator (a)	Industrial producer prices		Housing prices		Urban land prices (M. Public Works)	Labour Costs Survey				Wage increase agreed in collective bargaining
		Total	Excluding energy	Housing Price Index (INE)	m² average price (M. Public Works)		Total labour costs per worker	Wage costs per worker	Other cost per worker	Total labour costs per hour worked	
	2010=100	2015=100		2007=100			2000=100				
2011	100.0	99.1	98.1	83.4	84.6	69.8	144.5	141.9	152.5	154.8	--
2012	100.1	102.9	99.8	72.0	77.2	65.4	143.6	141.1	151.3	154.7	--
2013	100.5	103.5	100.5	64.3	72.7	55.1	143.8	141.1	152.2	155.2	--
2014	100.3	102.1	99.7	64.5	71.0	52.6	143.3	140.9	150.7	155.5	--
2015	100.9	100.0	100.0	66.8	71.7	54.9	144.2	142.5	149.6	156.5	--
2016	101.2	96.9	99.6	70.0	73.1	57.8	143.6	142.1	148.4	156.2	--
2017	102.1	101.1	101.9	74.3	74.8	58.2	144.0	142.3	149.1	156.3	--
2018 (b)	--	102.2	102.9	--	--	--	--	--	--	--	--
2016 II	101.0	95.8	99.4	69.9	73.3	58.7	146.2	145.5	148.4	154.5	--
III	101.2	97.3	99.9	70.5	72.9	54.2	138.2	135.1	147.7	159.4	--
IV	101.7	99.5	100.1	70.8	73.5	61.6	149.8	150.6	147.3	163.7	--
2017 I	101.5	101.4	101.4	72.4	74.2	60.1	140.2	137.0	150.1	147.1	--
II	101.9	100.4	101.9	73.8	74.4	59.7	146.1	145.5	148.2	154.4	--
III	102.2	100.5	102.0	75.2	74.9	58.2	138.7	135.5	148.7	158.9	--
IV	102.9	102.1	102.2	75.8	75.8	54.9	150.9	151.3	149.6	164.9	--
2018 I (b)	--	102.2	102.9	--	--	--	--	--	--	--	--
2018 Feb	--	102.5	102.9	--	--	--	--	--	--	--	--
Mar	--	101.6	103.0	--	--	--	--	--	--	--	--
Apr	--	--	--	--	--	--	--	--	--	--	--
Annual percent changes (c)											
2011	0.0	6.9	4.2	-7.4	-5.6	-6.7	1.2	1.0	1.6	2.2	2.0
2012	0.1	3.8	1.7	-13.7	-8.7	-6.4	-0.6	-0.6	-0.8	-0.1	1.0
2013	0.4	0.6	0.7	-10.6	-5.8	-15.7	0.2	0.0	0.6	0.4	0.5
2014	-0.2	-1.3	-0.8	0.3	-2.4	-4.6	-0.3	-0.1	-1.0	0.1	0.5
2015	0.6	-2.1	0.3	3.6	1.1	4.3	0.6	1.1	-0.7	0.7	0.7
2016	0.3	-3.1	-0.4	4.7	1.9	5.3	-0.4	-0.3	-0.8	-0.2	1.1
2017	1.0	4.4	2.3	6.2	2.4	0.8	0.2	0.1	0.5	0.1	1.4
2018 (d)	--	0.9	1.4	--	--	--	--	--	--	--	1.6
2016 II	0.3	-5.4	-0.9	3.9	1.8	6.6	-0.2	0.0	-1.0	0.1	1.1
III	0.3	-3.3	-0.5	4.0	0.8	-3.5	-0.5	-0.3	-0.9	-0.4	1.1
IV	0.5	1.2	0.6	4.5	0.4	13.0	-0.8	-0.7	-0.8	-0.5	1.1
2017 I	0.7	6.9	2.4	5.3	2.3	6.2	-0.1	-0.2	0.1	-0.2	1.3
II	0.9	4.8	2.5	5.6	2.0	1.8	0.0	0.0	-0.2	-0.1	1.3
III	1.0	3.3	2.1	6.6	1.8	7.4	0.4	0.3	0.7	-0.3	1.4
IV	1.2	2.6	2.1	7.2	0.9	-10.9	0.7	0.5	1.5	0.7	1.4
2018 I (e)	--	0.9	1.4	--	--	--	--	--	--	--	1.5
2018 Feb	--	1.2	1.4	--	--	--	--	--	--	--	1.5
Mar	--	1.3	1.2	--	--	--	--	--	--	--	1.5
Apr	--	--	--	--	--	--	--	--	--	--	1.6

(a) Seasonally adjusted. (b) Period with available data. (c) Annualized percent change from the previous quarter for quarterly data, non-annualized percent change from the previous month for monthly data, unless otherwise indicated. (d) Growth of available period over the same period of the previous year. (e) Annualized growth of the average of available months over the monthly average of the previous quarter.

Sources: M. of Public Works, M. of Labour and INE (National Statistics Institute).

Chart 13.1 - Housing and urban land prices

Index (2007=100)

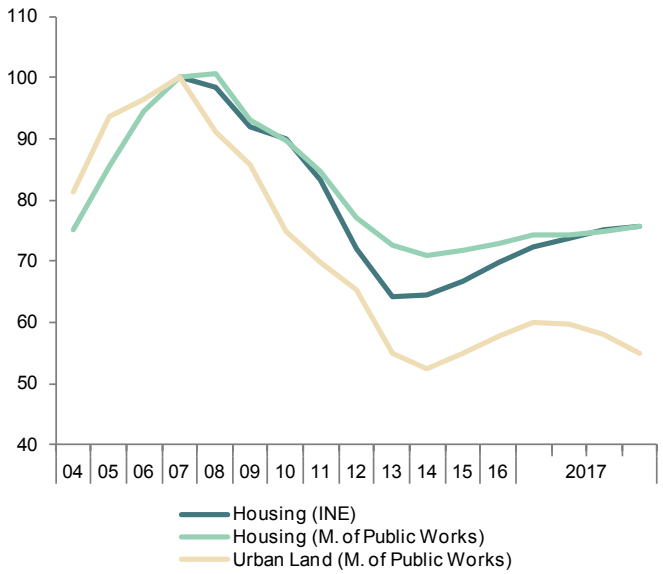


Chart 13.2 - Wage costs

Annual percent change

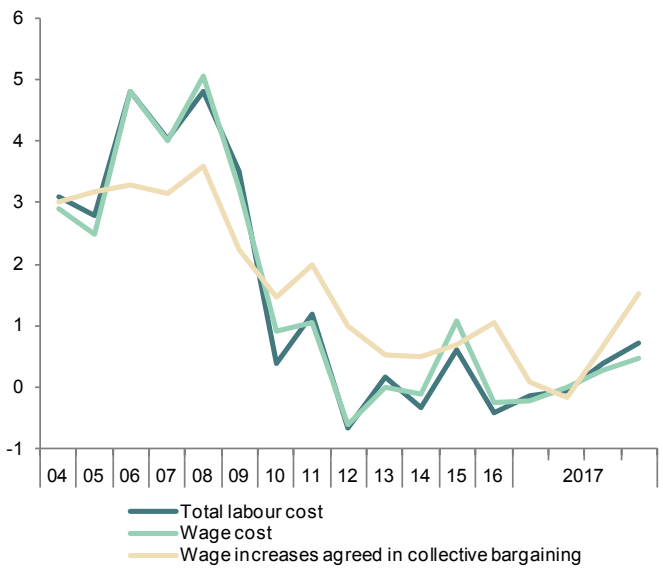


Table 14

External trade (a)

		Exports of goods			Imports of goods			Exports to EU countries (monthly average)	Exports to non-EU countries (monthly average)	Total Balance of goods (monthly average)	Balance of goods excluding energy (monthly average)	Balance of goods with EU countries (monthly average)
		Nominal	Prices	Real	Nominal	Prices	Real					
		2005=100			2005=100			EUR Billions				
2011		138.9	108.4	128.1	113.0	109.6	103.1	11.9	6.1	-4.0	-0.3	0.3
2012		145.9	110.7	131.8	110.7	114.7	96.6	11.9	6.9	-2.7	1.2	1.0
2013		152.1	110.5	137.7	108.3	109.8	98.6	12.3	7.3	-1.4	2.1	1.4
2014		155.2	109.4	141.8	114.0	107.3	106.3	12.7	7.3	-2.1	1.1	0.9
2015		161.2	110.1	146.4	118.0	104.6	112.8	13.5	7.3	-2.1	0.2	0.6
2016		165.4	108.2	152.9	117.5	101.3	116.0	14.2	7.2	-1.4	0.3	1.2
2017		178.8	108.9	164.2	129.6	106.1	122.1	15.2	7.9	-2.1	0.1	1.4
2018 (b)		185.4	110.9	167.2	134.7	108.2	124.5	15.9	7.7	-2.3	0.2	1.7
2016	II	165.9	107.7	154.0	117.2	100.3	116.8	14.1	7.2	-1.4	0.3	1.0
	III	165.6	108.3	152.9	117.5	101.6	115.6	13.9	7.3	-1.5	0.3	0.9
	IV	171.4	108.8	157.6	122.5	104.0	117.8	14.5	7.4	-1.7	0.1	1.4
2017	I	177.9	108.5	164.0	130.8	107.2	122.0	15.1	7.7	-2.5	0.2	1.2
	II	179.7	107.7	166.8	127.8	104.6	122.1	15.2	7.8	-1.7	0.3	1.7
	III	179.1	108.8	164.6	130.5	105.1	124.2	14.8	8.1	-2.3	-0.3	1.1
	IV	185.6	110.2	168.4	132.9	107.5	123.7	15.7	8.1	-1.9	0.2	1.5
2018	I	185.4	110.9	167.2	134.7	108.2	124.5	15.7	8.0	-2.3	0.2	1.4
2018	Jan	186.8	110.8	168.7	139.4	109.7	127.1	15.8	8.1	-3.0	0.2	1.4
	Feb	180.4	109.9	164.1	130.7	106.4	122.8	15.2	7.9	-2.1	0.0	1.2
	Mar	189.0	111.9	168.9	134.0	108.4	123.6	16.2	8.0	-1.7	0.6	1.7
		Percentage changes (c)								Percentage of GDP		
2011		15.2	4.9	9.9	9.6	8.6	1.0	12.7	20.5	-4.5	-0.4	0.3
2012		5.1	2.1	2.9	-2.0	4.7	-6.3	0.5	14.1	-3.1	1.4	1.2
2013		4.3	-0.2	4.5	-2.2	-4.2	2.1	3.1	6.3	-1.6	2.5	1.7
2014		2.0	-0.9	3.0	5.2	-2.3	7.7	3.5	-0.4	-2.4	1.3	1.0
2015		3.8	0.6	3.2	3.5	-2.5	6.1	5.8	0.4	-2.3	0.2	0.7
2016		2.6	-1.7	4.4	-0.4	-3.1	2.8	5.3	-2.3	-1.6	0.3	1.2
2017		8.1	0.7	7.4	10.3	4.7	5.3	7.0	10.3	-2.1	0.1	1.4
2018 (d)		1.8	2.2	-0.4	1.3	0.9	0.4	2.2	1.2	--	--	--
2016	II	19.4	0.2	19.2	11.5	3.8	7.4	2.9	7.9	-1.5	0.3	1.1
	III	-0.8	1.9	-2.7	1.0	5.1	-3.9	-1.2	1.6	-1.6	0.3	0.9
	IV	14.9	1.9	12.8	18.4	9.6	8.0	4.5	1.7	-1.8	0.1	1.4
2017	I	16.1	-1.1	17.4	29.7	12.9	14.9	4.0	3.3	-2.6	0.2	1.3
	II	4.0	-2.7	6.9	-8.8	-9.1	0.3	0.3	2.2	-1.7	0.3	1.7
	III	-1.3	4.1	-5.2	8.8	1.7	7.0	-2.4	3.6	-2.3	-0.3	1.1
	IV	15.4	5.3	9.6	7.7	9.4	-1.6	5.9	-0.4	-1.9	0.2	1.5
2018	I	-0.4	2.3	-2.7	5.4	2.6	2.7	0.2	-0.6	--	--	--
2018	Jan	-0.5	0.3	-0.7	4.8	1.3	3.5	-3.0	4.9	--	--	--
	Feb	-3.4	-0.8	-2.7	-6.3	-3.0	-3.4	-4.1	-2.1	--	--	--
	Mar	4.8	1.8	2.9	2.6	1.9	0.6	6.5	1.4	--	--	--

(a) Seasonally adjusted, except for annual data. (b) Period with available data. (c) Annualized percent change from the previous quarter for quarterly data, non-annualized percent change from the previous month for monthly data. (d) Growth of available period over the same period of the previous year.

Source Ministry of Economy.

Chart 14.1 - External trade (real)

Percent change from previous period

Chart 14.2 - Trade balance

EUR Billions, moving sum of 12 months

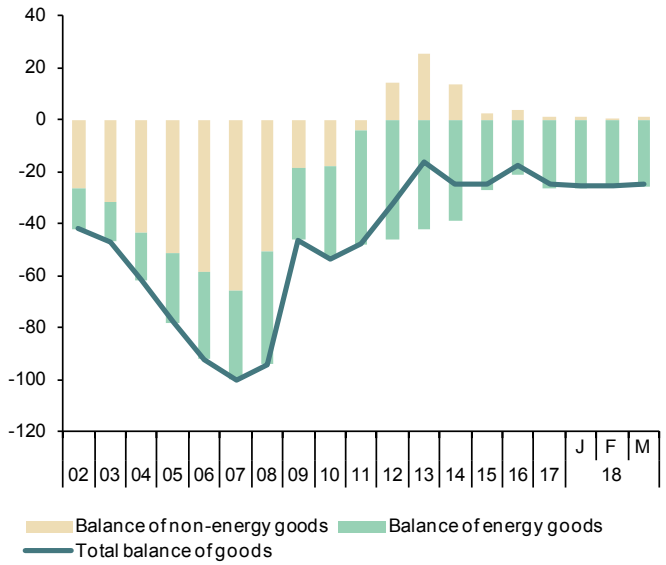


Table 15

Balance of Payments (according to IMF manual)

(Net transactions)

		Current account					Capital account	Current and capital accounts	Financial account					Bank of Spain	Errors and omissions
		Total	Goods	Services	Primary Income	Secondary Income			Financial account, excluding Bank of Spain						
									Total	Direct investment	Porfolio investment	Other investment	Financial derivatives		
		1=2+3+4+5	2	3	4	5	6	7=1+6	8=9+10+11+12	9	10	11	12	13	14
		EUR billions													
2008		-103.25	-87.04	29.82	-30.49	-15.55	4.67	-98.58	-69.23	-1.53	0.96	-75.72	7.07	-30.22	-0.86
2009		-46.19	-41.47	29.54	-19.62	-14.64	3.33	-42.86	-40.70	1.94	-44.04	-4.66	6.05	-10.46	-8.31
2010		-42.39	-47.80	33.93	-15.13	-13.38	4.89	-37.49	-27.24	-1.46	-28.40	11.23	-8.61	-15.70	-5.44
2011		-34.04	-44.48	42.59	-18.36	-13.79	4.06	-29.98	79.51	9.23	26.25	41.96	2.07	-109.23	0.26
2012		-2.40	-29.25	45.25	-7.01	-11.39	5.18	2.77	170.51	-21.12	55.40	144.57	-8.35	-168.76	-1.02
2013		15.59	-14.01	47.78	-5.29	-12.89	6.58	22.17	-84.89	-18.54	-52.99	-14.40	1.04	118.19	11.13
2014		11.22	-22.22	47.89	-3.37	-11.09	5.05	16.27	-15.39	6.48	-5.44	-17.71	1.28	27.49	-4.17
2015		12.18	-22.30	47.56	-2.26	-10.81	7.07	19.25	63.86	27.93	-6.80	43.74	-1.01	-40.16	4.45
2016		21.48	-17.42	51.10	-0.18	-12.01	2.68	24.17	79.33	16.67	38.29	26.99	-2.62	-52.63	2.53
2017 (a)		22.14	-22.00	55.54	-0.10	-11.29	2.65	24.79	54.39	19.26	15.95	21.24	-2.06	-31.94	-2.34
2016	I	-0.89	-4.71	8.76	-0.31	-4.63	0.68	-0.20	2.32	5.22	16.93	-18.32	-1.50	-7.19	-4.67
	II	6.16	-2.66	13.16	-2.59	-1.74	0.66	6.82	39.86	4.90	9.19	25.93	-0.17	-34.60	-1.56
	III	8.08	-4.98	17.54	-1.46	-3.02	0.38	8.46	18.80	0.13	10.02	9.74	-1.09	-6.48	3.86
	IV	8.12	-5.06	11.63	4.18	-2.63	0.96	9.09	18.36	6.42	2.15	9.64	0.14	-4.37	4.91
2017	I	-0.54	-6.25	8.84	0.48	-3.62	0.36	-0.18	41.39	-1.38	29.30	15.16	-1.69	-43.33	-1.76
	II	6.29	-3.46	15.18	-2.85	-2.58	0.63	6.93	-1.31	5.11	-3.02	-3.00	-0.39	5.89	-2.35
	III	7.12	-7.30	19.11	-1.28	-3.40	0.58	7.70	6.58	9.00	1.15	-2.45	-1.13	-0.22	-1.34
	IV	9.27	-5.00	12.42	3.54	-1.69	1.07	10.34	7.73	6.52	-11.48	11.53	1.16	5.71	3.10
			Goods and Services		Primary and Secondary Income										
2017	Dec	3.57	1.18		2.39		0.61	4.18	10.23	6.48	-14.91	18.15	0.52	-3.99	2.06
2018	Jan	-0.45	-0.01		-0.44		0.45	0.00	26.23	1.63	13.39	11.28	-0.07	-23.75	2.48
	Feb	-0.45	1.20		-1.65		0.20	-0.25	-2.49	1.08	1.62	-6.07	0.88	1.70	-0.54
		Percentage of GDP													
2008		-9.3	-7.8	2.7	-2.7	-1.4	0.4	-8.8	-6.2	-0.1	0.1	-6.8	0.6	-2.7	-0.1
2009		-4.3	-3.8	2.7	-1.8	-1.4	0.3	-4.0	-3.8	0.2	-4.1	-0.4	0.6	-1.0	-0.8
2010		-3.9	-4.4	3.1	-1.4	-1.2	0.5	-3.5	-2.5	-0.1	-2.6	1.0	-0.8	-1.5	-0.5
2011		-3.2	-4.2	4.0	-1.7	-1.3	0.4	-2.8	7.4	0.9	2.5	3.9	0.2	-10.2	0.0
2012		-0.2	-2.8	4.4	-0.7	-1.1	0.5	0.3	16.4	-2.0	5.3	13.9	-0.8	-16.2	-0.1
2013		1.5	-1.4	4.7	-0.5	-1.3	0.6	2.2	-8.3	-1.8	-5.2	-1.4	0.1	11.5	1.1
2014		1.1	-2.1	4.6	-0.3	-1.1	0.5	1.6	-1.5	0.6	-0.5	-1.7	0.1	2.6	-0.4
2015		1.1	-2.1	4.4	-0.2	-1.0	0.7	1.8	5.9	2.6	-0.6	4.0	-0.1	-3.7	0.4
2016		1.9	-1.6	4.6	0.0	-1.1	0.2	2.2	7.1	1.5	3.4	2.4	-0.2	-4.7	0.2
2017 (a)		1.9	-1.9	4.8	0.0	-1.0	0.2	2.1	4.7	1.7	1.4	1.8	-0.2	-2.7	-0.2
2016	I	-0.3	-1.8	3.3	-0.1	-1.7	0.3	-0.1	0.9	2.0	6.3	-6.9	-0.6	-2.7	-1.7
	II	2.2	-0.9	4.6	-0.9	-0.6	0.2	2.4	14.0	1.7	3.2	9.1	-0.1	-12.2	-0.5
	III	2.9	-1.8	6.3	-0.5	-1.1	0.1	3.1	6.8	0.0	3.6	3.5	-0.4	-2.3	1.4
	IV	2.8	-1.7	4.0	1.4	-0.9	0.3	3.1	6.3	2.2	0.7	3.3	0.0	-1.5	1.7
2017	I	-0.2	-2.2	3.2	0.2	-1.3	0.1	-0.1	14.9	-0.5	10.5	5.5	-0.6	-15.6	-0.6
	II	2.1	-1.2	5.1	-1.0	-0.9	0.2	2.3	-0.4	1.7	-1.0	-1.0	-0.1	2.0	-0.8
	III	2.5	-2.5	6.7	-0.4	-1.2	0.2	2.7	2.3	3.1	0.4	-0.9	-0.4	-0.1	-0.5
	IV	3.1	-1.6	4.1	1.2	-0.6	0.4	3.4	2.5	2.1	-3.8	3.8	0.4	1.9	1.0

(a) Period with available data.

Source: Bank of Spain.

Chart 15.1 - Balance of payments: Current and capital accounts

EUR Billions, 12-month cumulated

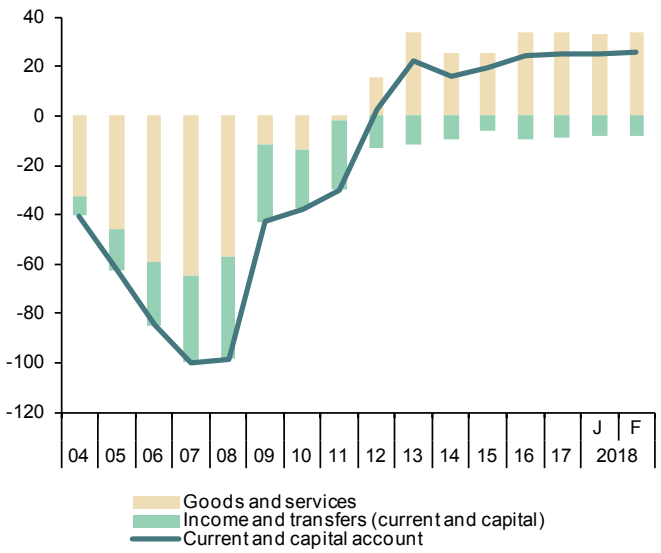


Chart 15.2 - Balance of payments: Financial account

EUR Billions, 12-month cumulated

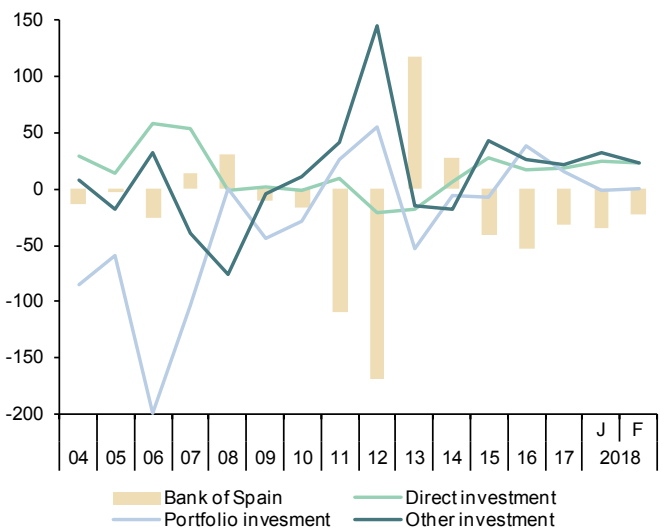


Table 16

Competitiveness indicators in relation to EMU

		Relative Unit Labour Costs in industry (Spain/EMU)			Harmonized Consumer Prices			Producer prices			Real Effective Exchange Rate in relation to developed countries
		Relative hourly wages	Relative hourly productivity	Relative ULC	Spain	EMU	Spain/EMU	Spain	EMU	Spain/EMU	
		1998=100			2015=100			2015=100			1999 I =100
2011		106.3	94.8	112.2	96.9	95.8	101.2	99.1	101.7	97.5	113.1
2012		105.3	96.0	109.7	99.3	98.2	101.1	102.9	104.6	98.3	111.6
2013		103.9	95.7	108.6	100.8	99.5	101.3	103.5	104.4	99.1	113.4
2014		102.2	95.5	107.1	100.6	100.0	100.7	102.1	102.8	99.3	112.4
2015		101.7	94.7	107.4	100.0	100.0	100.0	100.0	100.0	100.0	109.0
2016		100.3	93.8	106.9	99.7	100.3	99.4	96.9	97.7	99.2	108.8
2017		100.6	93.7	107.3	101.7	101.8	99.9	101.2	100.7	100.5	110.3
2018 (a)		--	--	--	102.1	102.5	99.6	102.2	102.2	100.0	110.9
2016	II	--	--	--	100.1	100.4	99.7	95.8	97.0	98.8	109.1
	III	--	--	--	99.5	100.3	99.2	97.3	98.0	99.3	108.7
	IV	--	--	--	101.1	101.0	100.1	99.5	99.1	100.4	110.0
2017	I	--	--	--	100.7	101.0	99.7	101.4	100.7	100.7	109.2
	II	--	--	--	102.2	102.0	100.2	100.4	100.2	100.2	110.3
	III	--	--	--	101.3	101.8	99.5	100.8	100.4	100.3	110.4
	IV	--	--	--	102.6	102.4	100.2	102.2	101.4	100.8	111.4
2018	I	--	--	--	101.7	102.3	99.5	102.2	102.2	100.0	110.7
2018	Feb	--	--	--	101.4	102.0	99.4	102.4	102.2	100.2	110.5
	Mar	--	--	--	102.6	103.0	99.6	101.7	102.3	99.4	111.0
	Apr	--	--	--	103.4	103.3	100.0	--	--	--	111.4
		Annual percentage changes					Differential	Annual percentage changes		Differential	Annual percentage changes
2011		-1.1	0.2	-1.2	3.0	2.7	0.3	6.5	5.2	1.3	0.2
2012		-1.0	1.3	-2.3	2.4	2.5	-0.1	3.8	2.9	0.9	-1.3
2013		-1.3	-0.3	-1.0	1.5	1.3	0.2	0.6	-0.2	0.8	1.5
2014		-1.6	-0.2	-1.4	-0.2	0.4	-0.6	-1.3	-1.5	0.2	-0.9
2015		-0.5	-0.8	0.3	-0.6	0.0	-0.6	-2.0	-2.8	0.8	-3.0
2016		-1.4	-1.0	-0.4	-0.3	0.3	-0.6	-3.1	-2.3	-0.8	-0.1
2017		0.3	-0.1	0.4	2.0	1.5	0.5	4.5	3.1	1.4	1.3
2018 (b)		--	--	--	1.1	1.3	-0.2	0.8	1.5	-0.7	1.4
2016	II	--	--	--	0.0	0.0	0.0	-5.4	-3.9	-1.5	-0.5
	III	--	--	--	0.0	0.0	0.0	-3.3	-2.0	-1.3	0.1
	IV	--	--	--	0.0	0.0	0.0	1.3	0.4	0.9	0.9
2017	I	--	--	--	2.7	1.8	0.9	6.9	4.2	2.7	1.4
	II	--	--	--	2.1	1.5	0.6	4.8	3.4	1.4	1.1
	III	--	--	--	1.8	1.4	0.4	3.6	2.5	1.1	1.6
	IV	--	--	--	1.6	1.4	0.2	2.7	2.3	0.4	1.3
2018	I	--	--	--	1.1	1.3	-0.2	0.8	1.5	-0.7	1.4
2018	Feb	--	--	--	1.2	1.1	0.1	1.1	1.4	-0.3	1.8
	Mar	--	--	--	1.3	1.3	0.0	1.4	1.8	-0.4	1.5
	Apr	--	--	--	1.1	1.2	-0.1	--	--	--	1.5

(a) Period with available data. (b) Growth of available period over the same period of the previous year.

Sources: Eurostat, Bank of Spain and Funcas.

Chart 16.1 - Relative Unit Labour Costs in industry (Spain/EMU)

1998=100

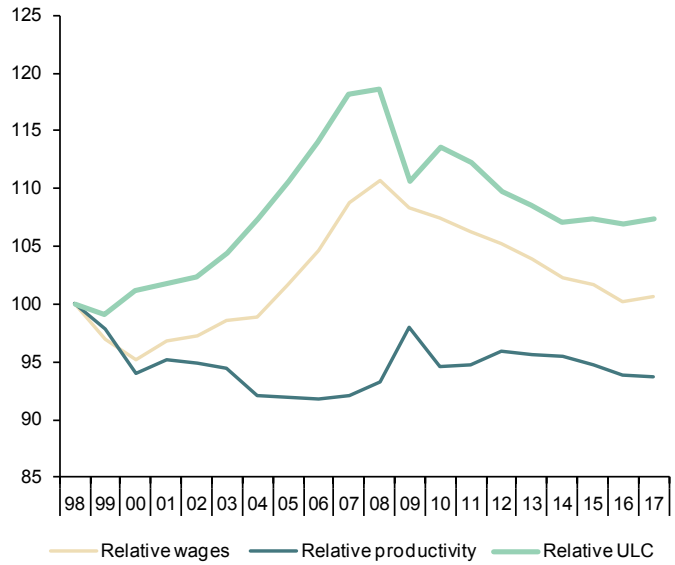


Chart 16.2.- Harmonized Consumer Prices

Annual growth in % and percentage points

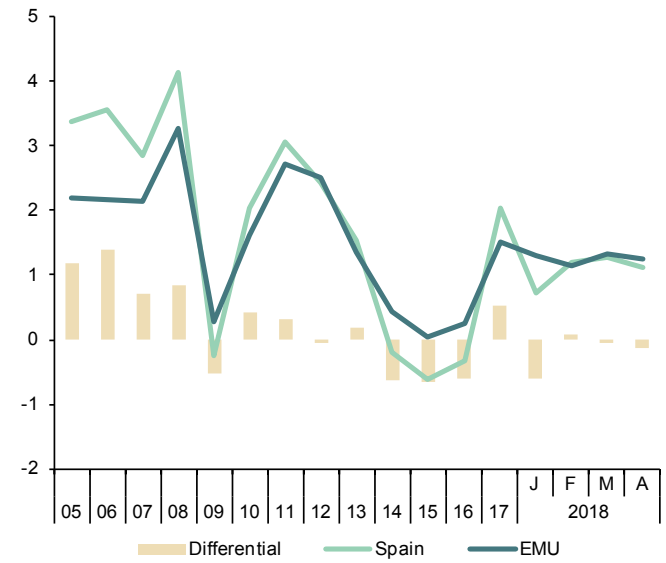


Table 17a

Imbalances: International comparison (I)

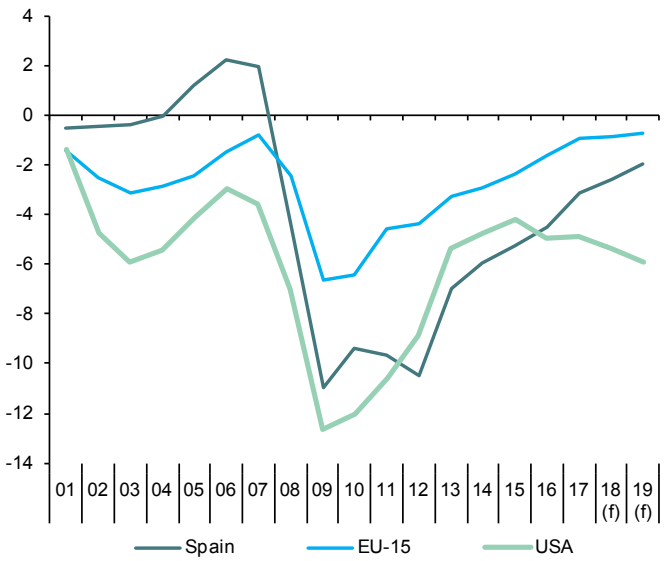
(In yellow: European Commission Forecasts)

	Government net lending (+) or borrowing (-)			Government consolidated gross debt			Current Account Balance of Payments (National Accounts)		
	Spain	EU-15	USA	Spain	EU-15	USA	Spain	EU-15	USA
					Billions of national currency				
2006	22.2	-171.7	-411.6	392.1	7,066.0	8,891.9	-90.7	3.4	-584.9
2007	20.8	-96.2	-513.6	384.7	7,141.7	9,365.1	-104.1	-10.6	-735.6
2008	-49.3	-291.6	-1,033.3	440.6	7,594.7	10,839.0	-102.9	-104.9	-791.0
2009	-118.2	-750.9	-1,827.4	569.5	8,624.1	12,541.3	-46.5	-5.6	-457.2
2010	-101.4	-759.0	-1,797.7	650.1	9,661.3	14,318.8	-42.0	17.0	-495.1
2011	-103.2	-551.3	-1,646.6	744.3	10,332.1	15,511.2	-35.3	57.3	-443.2
2012	-108.8	-536.6	-1,430.7	891.5	10,938.1	16,705.3	-4.6	134.1	-264.9
2013	-71.7	-411.6	-894.0	979.0	11,304.6	17,594.8	15.0	161.6	-248.2
2014	-61.9	-375.0	-832.5	1,041.6	11,822.4	18,308.2	10.3	184.7	-154.1
2015	-57.0	-323.6	-765.2	1,073.9	12,148.3	19,062.7	11.0	246.2	-194.7
2016	-50.4	-223.5	-920.0	1,107.2	12,027.7	19,947.7	21.1	253.7	-313.7
2017	-36.2	-134.8	-943.2	1,144.3	12,095.6	20,902.3	20.4	333.8	-450.0
2018	-31.0	-120.5	-1,088.1	1,183.8	12,264.8	21,990.4	18.0	348.8	--
2019	-24.3	-113.2	-1,253.7	1,209.4	12,386.2	23,344.1	20.0	371.9	--
					Percentage of GDP				
2006	2.2	-1.5	-3.0	38.9	61.7	64.2	-9.0	0.0	-4.2
2007	1.9	-0.8	-3.5	35.6	59.2	64.7	-9.6	-0.1	-5.1
2008	-4.4	-2.4	-7.0	39.5	63.3	73.6	-9.2	-0.9	-5.4
2009	-11.0	-6.6	-12.7	52.8	75.9	87.0	-4.3	0.0	-3.2
2010	-9.4	-6.4	-12.0	60.1	81.8	95.7	-3.9	0.1	-3.3
2011	-9.6	-4.5	-10.6	69.5	85.1	100.0	-3.3	0.5	-2.9
2012	-10.5	-4.3	-8.9	85.7	88.3	103.4	-0.4	1.1	-1.6
2013	-7.0	-3.3	-5.4	95.5	90.6	105.4	1.5	1.3	-1.5
2014	-6.0	-2.9	-4.8	100.4	91.5	105.1	1.0	1.4	-0.9
2015	-5.3	-2.4	-4.2	99.4	89.2	105.2	1.0	1.8	-1.1
2016	-4.5	-1.6	-4.9	99.0	87.8	107.1	1.9	1.9	-1.7
2017	-3.1	-1.0	-4.9	98.3	86.3	107.8	1.8	2.4	-2.3
2018	-2.6	-0.8	-5.3	97.6	84.5	108.1	1.5	2.4	--
2019	-1.9	-0.8	-5.9	95.9	82.4	109.4	1.6	2.5	--

Source: European Commission Forecasts, Spring 2018.

Chart 17a.1 - Government deficit

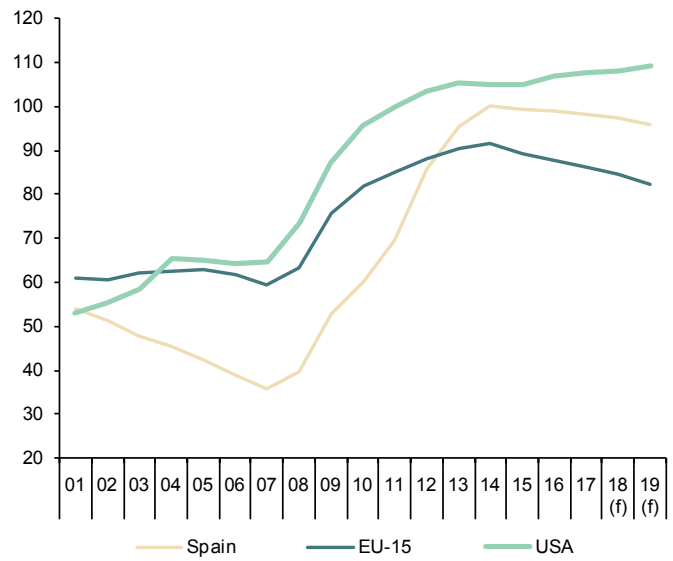
Percentage of GDP



(f) European Commission forecast.

Chart 17a.2 - Government gross debt

Percentage of GDP



(f) European Commission forecast.

Table 17b

Imbalances: International comparison (II)

	Household debt (a)			Non-financial corporations debt (a)		
	Spain	EMU-19	USA	Spain	EMU-19	USA
	Billions of national currency					
2005	656.2	4,806.4	11,975.8	925.0	7,200.5	8,154.4
2006	783.5	5,214.0	13,256.6	1,158.8	7,743.5	8,971.4
2007	879.3	5,592.3	14,174.7	1,344.5	8,610.3	10,097.4
2008	916.7	5,826.2	14,047.3	1,422.6	9,252.6	10,664.2
2009	908.9	5,950.3	13,812.0	1,406.1	9,339.2	10,142.8
2010	905.2	6,075.0	13,574.8	1,429.4	9,540.1	9,994.7
2011	877.9	6,159.7	13,381.0	1,415.7	10,016.4	10,257.2
2012	840.9	6,150.4	13,443.7	1,309.8	10,150.9	10,760.4
2013	793.3	6,097.9	13,596.0	1,230.6	10,056.2	11,244.4
2014	757.2	6,112.5	13,953.1	1,179.4	10,461.5	11,941.2
2015	733.8	6,182.7	14,216.9	1,157.0	11,034.3	12,745.6
2016	720.3	6,289.2	14,671.3	1,144.1	11,263.8	13,449.8
2017	712.8	6,486.2	15,251.4	1,126.7	11,360.0	14,259.3
	Percentage of GDP					
2005	70.5	56.8	91.5	99.4	85.1	62.3
2006	77.7	58.5	95.7	115.0	86.9	64.7
2007	81.4	59.5	97.9	124.4	91.6	69.7
2008	82.1	60.5	95.4	127.4	96.0	72.5
2009	84.2	64.0	95.8	130.3	100.5	70.3
2010	83.7	63.6	90.7	132.2	99.9	66.8
2011	82.0	62.9	86.2	132.3	102.2	66.1
2012	80.9	62.5	83.2	126.0	103.2	66.6
2013	77.3	61.4	81.5	120.0	101.2	67.4
2014	73.0	60.2	80.1	113.6	103.0	68.5
2015	67.9	58.8	78.5	107.1	104.9	70.3
2016	64.4	58.3	78.8	102.3	104.4	72.2
2017	61.3	58.1	78.7	96.8	101.7	73.5

(a) Loans and debt securities.

Sources: ECB and Federal Reserve.

Chart 17b.1 - Household debt

Percentage of GDP

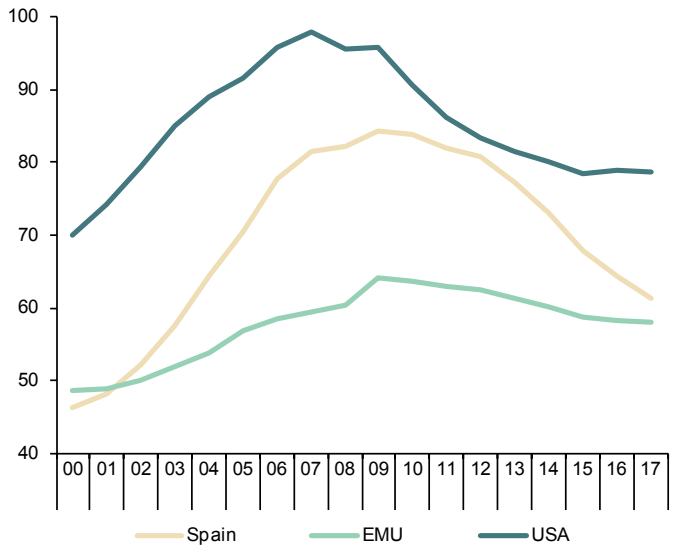
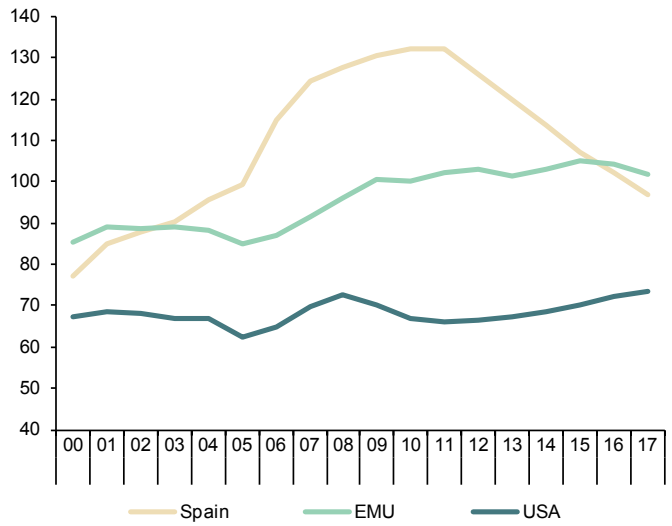


Chart 17b.2 - Non-financial corporations debt

Percentage of GDP



50 Financial System Indicators

Updated: May 15th, 2018

Indicator	Last value available	Corresponding to:
Bank lending to other resident sectors (monthly average % var.)	-0.6	February 2018
Other resident sectors' deposits in credit institutions (monthly average % var.)	0.2	February 2018
Doubtful loans (monthly % var.)	-2.0	February 2018
Recourse to the Eurosystem L/T (Eurozone financial institutions, million euros)	760,140	March 2018
Recourse to the Eurosystem L/T (Spanish financial institutions, million euros)	169,678	March 2018
Recourse to the Eurosystem (Spanish financial institutions million euros) - Main refinancing operations	2	March 2018
"Operating expenses/gross operating income" ratio (%)	54.03	December 2017
"Customer deposits/employees" ratio (thousand euros)	6,532.25	December 2017
"Customer deposits/branches" ratio (thousand euros)	47,309.12	December 2017
"Branches/institutions" ratio	122.22	December 2017

A. Money and Interest Rates

Indicator	Source	Average 2001-2015	2016	2017	2018 April 15	2018 May 15	Definition and calculation
1. Monetary Supply (% chg.)	ECB	5.1	5.0	4.7	-	-	M3 aggregate change (non-stationary)
2. Three-month interbank interest rate	Bank of Spain	2.0	-0.26	-0.329	-0.328	-0.326	Daily data average
3. One-year Euribor interest rate (from 1994)	Bank of Spain	2.3	-0.03	-0.186	-0.189	-0.190	End-of-month data
4. Ten-year Treasury bonds interest rate (from 1998)	Bank of Spain	4.2	1.4	1.5	1.3	1.4	Market interest rate (not exclusively between account holders)
5. Corporate bonds average interest rate	Bank of Spain	4.0	2.3	1.4	-	-	End-of-month straight bonds average interest rate (> 2 years) in the AIAF market

Comment on "Money and Interest Rates": Interbank rates followed an unequal path in the first fortnight of May. The 3-month interbank rate went up to -0.326% and the 1-year Euribor rate fell to -0.190%. The ECB has announced expansionary monetary policy should continue, and has alerted the European economy is showing some signs of deceleration. As for the Spanish 10-year bond yield, it has increased to 1.4%.

B. Financial Markets

Indicator	Source	Average 2001-2015	2016	2017	2018 February	2018 March	Definition and calculation
6. Outright spot treasury bills transactions trade ratio	Bank of Spain	44.4	102.6	54.60	52.00	41.36	(Traded amount/outstanding balance) x100 in the market (not exclusively between account holders)
7. Outright spot government bonds transactions trade ratio	Bank of Spain	76.1	55.1	27.60	37.63	37.91	(Traded amount/outstanding balance) x100 in the market (not exclusively between account holders)
8. Outright forward treasury bills transactions trade ratio	Bank of Spain	1.2	0.4	3.46	2.31	3.62	(Traded amount/outstanding balance) x100 in the market (not exclusively between account holders)
9. Outright forward government bonds transactions trade ratio	Bank of Spain	4.4	1.9	4.76	2.65	5.43	(Traded amount/outstanding balance) in the market (not exclusively between account holders)
10. Three-month maturity treasury bills interest rate	Bank of Spain	1.7	0.0	-0.7	-0.5	-0.6	Outright transactions in the market (not exclusively between account holders)
11. Government bonds yield index (Dec1987=100)	Bank of Spain	726.2	1,104.9	1,127.71	1,130.84	1,166.88	Outright transactions in the market (not exclusively between account holders)
12. Madrid Stock Exchange Capitalization (monthly average % chg.)	Bank of Spain and Madrid Stock Exchange	0.4	0.2	-1.3	-4.7	-1.7	Change in the total number of resident companies
13. Stock market trading volume. Stock trading volume (monthly average % var.)	Bank of Spain and Madrid Stock Exchange	3.9	0.7	2.2	6.3	6.5	Stock market trading volume. Stock trading volume: change in total trading volume
14. Madrid Stock Exchange general index (Dec 1985=100)	Bank of Spain and Madrid Stock Exchange	1,018.0	943.6	1,055.4	982.6	1,033.5 (a)	Base 1985=100
15. Ibex-35 (Dec 1989=3000)	Bank of Spain and Madrid Stock Exchange	9,880.1	8,790.9	10,451.5	9,684.2	10,207.6 (a)	Base dec1989=3000
16. Madrid Stock Exchange PER ratio (share value/profitability)	Bank of Spain and Madrid Stock Exchange	16.2	23.6	15.8	14.2	14.6(a)	Madrid Stock Exchange Ratio "share value/ capital profitability"
17. Long-term bonds. Stock trading volume (% chg.)	Bank of Spain and Madrid Stock Exchange	5.3	55.9	-	-	-	Variation for all stocks

B. Financial Markets (continued)

Indicator	Source	Average 2001-2015	2016	2017	2018 February	2018 March	Definition and calculation
18. Commercial paper. Trading balance (% chg.)	Bank of Spain and AIAF	1.6	0.1	-	-	-	AIAF fixed-income market
19. Commercial paper. Three-month interest rate	Bank of Spain and AIAF	2.2	0.0	-	-	-	AIAF fixed-income market
20. IBEX-35 financial futures concluded transactions (% chg.)	Bank of Spain	1.4	-0.4	0.6	0.6	18.9	IBEX-35 shares concluded transactions
21. IBEX-35 financial options concluded transactions (%chg.)	Bank of Spain	10.6	5.8	5.8	-26.8	-24.4	IBEX-35 shares concluded transactions

(a) Last data published: May 15th, 2018.

Comment on "Financial Markets": During the last month, there was a decrease in transactions with outright spot T-bills to 41.36% and an increase of spot government bonds transactions to 37.91%. The stock market has registered an increase in the first fortnight of May with the IBEX-35 up to 10,208 points, and the General Index of the Madrid Stock Exchange to 1,034. There was an increase in Ibex-35 financial futures of 18.9% and a fall in options of 24.4%.

C. Financial Saving and Debt

Indicator	Source	Average 2008-2013	2014	2015	2016	2017 Q4	Definition and calculation
22. Net Financial Savings/GDP (National Economy)	Bank of Spain	-2.8	1.6	2.2	2.1	2.0	Difference between financial assets and financial liabilities flows over GDP
23. Net Financial Savings/GDP (Households and non-profit institutions)	Bank of Spain	2.5	3.4	3.6	2.6	0.5	Difference between financial assets and financial liabilities flows over GDP
24. Debt in securities (other than shares) and loans/GDP (National Economy)	Bank of Spain	288.1	320.0	302.3	297.0	287.4	Public debt. non-financial companies debt and households and non-profit institutions debt over GDP
25. Debt in securities (other than shares) and loans/GDP (Households and non-profit institutions)	Bank of Spain	81.4	72.4	67.5	64.4	61.3	Households and non-profit institutions debt over GDP
26. Households and non-profit institutions balance: financial assets (quarterly average % chg.)	Bank of Spain	0.6	2.1	1.7	0.6	3.8	Total assets percentage change (financial balance)
27. Households and non-profit institutions balance: financial liabilities (quarterly average % chg.)	Bank of Spain	-1.8	-4.0	-2.9	1.1	-0.1	Total liabilities percentage change (financial balance)

Comment on "Financial Savings and Debt": During 2017Q4, the financial savings to GDP in the overall economy fell to 2% of GDP. There was also a decrease in the financial savings rate of households from 2.6% to 0.5%. The debt to GDP ratio fell to 61.3%. Finally, the stock of financial assets on households' balance sheets registered a growth of 3.8%, and there was a 0.1% fall in the stock of financial liabilities.

D. Credit institutions. Business Development

Indicator	Source	Average 2001-2015	2016	2017	2018 January	2018 February	Definition and calculation
28. Bank lending to other resident sectors (monthly average % var.)	Bank of Spain	7.3	-4.1	-0.4	-1.3	-0.6	Lending to the private sector percentage change for the sum of banks. savings banks and credit unions
29. Other resident sectors' deposits in credit institutions (monthly average % var.)	Bank of Spain	7.8	-0.1	2.4	-2.1	0.2	Deposits percentage change for the sum of banks. savings banks and credit unions
30. Debt securities (monthly average % var.)	Bank of Spain	9.5	-11.6	-3.7	0.8	2.3	Asset-side debt securities percentage change for the sum of banks. savings banks and credit unions
31. Shares and equity (monthly average % var.)	Bank of Spain	10.7	-1.0	0.7	-4.8	-10.1	Asset-side equity and shares percentage change for the sum of banks. savings banks and credit unions
32. Credit institutions. Net position (difference between assets from credit institutions and liabilities with credit institutions) (% of total assets)	Bank of Spain	-2.2	-4.5	-1.7	-1.8	-1.9	Difference between the asset-side and liability-side "Credit System" item as a proxy of the net position in the interbank market (month-end)
33. Doubtful loans (monthly average % var.)	Bank of Spain	0.2	-3.6	-3.8	-0.5	-2.0	Doubtful loans. Percentage change for the sum of banks. savings banks and credit unions
34. Assets sold under repurchase (monthly average % var.)	Bank of Spain	-1.8	-22.2	-3.5	-18.5	9.1	Liability-side assets sold under repurchase. Percentage change for the sum of banks. savings banks and credit unions
35. Equity capital (monthly average % var.)	Bank of Spain	9.0	-0.3	-1.2	-1.1	-0.8	Equity percentage change for the sum of banks, savings banks and credit unions

Comment on "Credit institutions. Business Development": The latest available data as of February 2018 show a decrease in bank credit to the private sector of 0.6%. Data also show a growth in financial institutions deposit-taking of 0.2%. Holdings of debt securities grew 2.3%. Doubtful loans decreased 2% compared to the previous month.

E. Credit institutions. Market Structure and Eurosystem Refinancing

Indicator	Source	Average 2000-2013	2014	2015	2016	2017 December	Definition and calculation
36. Number of Spanish credit institutions	Bank of Spain	199	138	135	124	123	Total number of banks, savings banks and credit unions operating in Spanish territory
37. Number of foreign credit institutions operating in Spain	Bank of Spain	73	86	82	82	83	Total number of foreign credit institutions operating in Spanish territory
38. Number of employees	Bank of Spain	246,418	203,305	203,305	202,954	189,280(a)	Total number of employees in the banking sector
39. Number of branches	Bank of Spain	40,703	31,817	30,921	28,807	27,810(b)	Total number of branches in the banking sector
40. Recourse to the Eurosystem: long term (total Eurozone financial institutions) (Euro millions)	Bank of Spain	-	406,285	460,858	527,317	760,140(b)	Open market operations and ECB standing facilities. Eurozone total
41. Recourse to the Eurosystem: long term (total Spanish financial institutions) (Euro millions)	Bank of Spain	-	111,338	122,706	138,455	169,678(b)	Open market operations and ECB standing facilities. Spain total
42. Recourse to the Eurosystem (total Spanish financial institutions): main refinancing operations (Euro millions)	Bank of Spain	22,794	21,115	10,515	1,408	2(b)	Open market operations: main long term refinancing operations. Spain total

(a) Last data published: June 2017.

(b) Last data published: March 2018.

Comment on "Credit institutions. Market Structure and Eurosystem Refinancing": In March 2018, recourse to Eurosystem funding by Spanish credit institutions reached 169.68 billion euro.

MEMO ITEM: From January 2015, the ECB also offers information on the asset purchase programs. The amount borrowed by Spanish banks in these programs reached 314.9 billion euro in March and 2.46 trillion euro for the entire Eurozone banking system.

F. Credit institutions. Efficiency and Productivity, Risk and Profitability

Indicator	Source	Average 2000-2013	2014	2015	2016	2017	Definition and calculation
43. "Operating expenses/gross operating income" ratio	Bank of Spain	50.89	47.27	50.98	54.18	54.03	Operational efficiency indicator. Numerator and denominator are obtained directly from credit institutions´ P&L accounts
44. "Customer deposits/employees" ratio (Euro thousands)	Bank of Spain	3,519.51	5,892.09	5,595.62	5,600.48	6,532.25	Productivity indicator (business by employee)
45. "Customer deposits/branches" ratio (Euro thousands)	Bank of Spain	21,338.27	40,119.97	36,791.09	39,457.04	47,309.12	Productivity indicator (business by branch)

F. Credit institutions. Efficiency and Productivity, Risk and Profitability (continued)

Indicator	Source	Average 2000-2013	2014	2015	2016	2017	Definition and calculation
46. "Branches/institutions" ratio	Bank of Spain	205.80	142.85	229.04	139.84	122.22	Network expansion indicator
47. "Employees/branches" ratio	Bank of Spain	6.1	6.8	6.57	7.05	6.97	Branch size indicator
48. "Equity capital (monthly average % var.)	Bank of Spain	0.11	0.07	0.01	-0.62	0.84	Credit institutions equity capital variation indicator
49. ROA	Bank of Spain	0.45	0.49	0.39	0.26	0.44	Profitability indicator, defined as the "pre-tax profit/average total assets"
50. ROE	Bank of Spain	6.27	6.46	5.04	3.12	3.66	Profitability indicator, defined as the "pre-tax profit/equity capital"

Comment on "Credit institutions. During 2017, most of the profitability and efficiency indicators improved for Spanish banks. Productivity indicators have also improved since the restructuring process of the Spanish banking sector was implemented

Social Indicators

Table 1

Population

	Population									
	Total population	Average age	65 and older (%)	Life expectancy at birth (men)	Life expectancy at birth (women)	Dependency rate	Dependency rate (older than 64)	Foreign-born population (%)	New entries (all nationalities)	New entries (EU-27 born) (%)
2006	44,708,964	40.6	16.7	77.7	84.2	47.5	24.6	10.8	840,844	37.6
2008	46,157,822	40.8	16.5	78.2	84.3	47.5	24.5	13.1	726,009	28.4
2010	47,021,031	41.1	16.9	79.1	85.1	48.6	25.0	14.0	464,443	35.6
2012	47,265,321	41.6	17.4	79.4	85.1	50.4	26.1	14.3	370,515	36.4
2014	46,771,341	42.1	18.1	80.1	85.7	51.6	27.4	13.4	399,947	38.0
2015	46,624,382	42.4	18.4	79.9	85.4	52.4	28.0	13.2	455,679	36.4
2016	46,557,008	42.7	18.6	80.4	85.9	52.9	28.4	13.2	534,574	33.4
2017	46,572,132	42.9	18.8			53.2	28.8	13.2		
2018●	46,698,569	43.1	19.1			53.6	29.3	13.6		
Sources	PMC	PMC	PMC	ID INE	ID INE	PMC	PMC	PMC	EVR	EVR

ID INE: Indicadores Demográficos INE.

PMC: Padrón Municipal Continuo.

EVR: Estadística de Variaciones Residenciales.

Dependency rate: (15 or less years old population + 65 or more years old population)/ 16-64 years old population, as a percentage.

Dependency rate (older than 64): 65 or more years old population/ 16-64 years old population, as a percentage.

● *Provisional data.*

Table 2

Households and families

	Households				Nuptiality					
	Households (thousands)	Average household size	Households with one person younger than 65 (%)	Households with one person older than 65 (%)	Marriage rate (Spanish)	Marriage rate (foreign population)	Divorce rate	Mean age at first marriage, men	Mean age at first marriage, women	Same sex marriages (%)
2006	15,856	2.76	11.6	10.3	9.3	9.5	2.86	32.2	29.7	2.08
2008	16,742	2.71	12.0	10.2	8.5	8.4	2.39	32.4	30.2	1.62
2010	17,174	2.67	12.8	9.9	7.2	7.9	2.21	33.2	31.0	1.87
2012	17,434	2.63	13.7	9.9	7.2	6.7	2.23	33.8	31.7	2.04
2014	18,329	2.51	14.2	10.6	6.9	6.5	2.17	34.4	32.3	2.06
2015	18,376	2.54	14.6	10.7	7.3	6.5	2.08	34.8	32.7	2.26
2016	18,444	2.52	14.6	10.9	7.5	6.8	2.08	35.0	32.9	2.46
2017	18,512	2.52								
2018*	18,546	2.52								
Sources	LFS	LFS	EPF	EPF	ID INE	ID INE	ID INE	ID INE	ID INE	MNP

Table 2 (continued)

Households and families

	Fertility					
	Median age at first child, women	Total fertility rate (Spanish women)	Total fertility rate (Foreign women)	Births to single mothers (%)	Abortion rate	Abortion by Spanish-born women (%)
2006	29.3	1.31	1.69	28.4	10.6	
2008	29.3	1.36	1.83	33.2	11.8	55.6
2010	29.8	1.30	1.68	35.5	11.5	58.3
2012	30.3	1.27	1.56	39.0	12.0	61.5
2014	30.6	1.27	1.62	42.5	10.5	63.3
2015	30.7	1.28	1.66	44.4	10.4	65.3
2016	30.8	1.27	1.70	45.8	10.4	65.8
Sources	ID INE	ID INE	ID INE	ID INE	MSAN	MSAN

LFS: Labour Force Survey. EPF: Encuesta de Presupuestos Familiares. ID INE: Indicadores Demográficos INE. MNP: Movimiento Natural de la Población. MSAN: Ministerio de Sanidad, Servicios Sociales e Igualdad.

Marriage rate: Number of marriages per thousand population.

Divorce rate: Number of divorces per thousand population.

Total fertility rate: The average number of children that would be born per woman living in Spain if all women lived to the end of their childbearing years and bore children according to a given fertility rate at each age.

Abortion rate: Number of abortions per 1,000 women (15-44 years).

** Data refer to January-March.*

Table 3

Education

	Educational attainment				Students involved in non-compulsory education					Education expenditure	
	Population 16 years and older with primary education (%)	Population 30-34 with primary education (%)	Population 16 years and older with with tertiary education (%)	Population 30-34 with tertiary education (%)	Pre-primary education	Secondary education	Vocational training	Under-graduate students	Post-graduate studies (except doctorate)	Public expenditure (thousands of €)	Public expenditure (%GDP)
2006	32.9	8.4	15.6	25.3	1,557,257	630,349	445,455	1,405,894	16,636	42,512,586	4.31
2008	32.1	9.2	16.1	26.9	1,763,019	629,247	472,604	1,377,228	50,421	51,716,008	4.63
2010	30.6	8.6	17.0	27.7	1,872,829	672,213	555,580	1,445,392	104,844	53,099,329	4.91
2012	28.5	7.5	17.8	26.6	1,912,324	692,098	617,686	1,450,036	113,805	46,476,414	4.46
2014	24.4	6.1	27.2	42.3	1,840,008	690,738	652,846	1,364,023	142,156	44,846,415	4.31
2015	23.3	6.6	27.5	40.9	1,808,322	695,557	641,741	1,321,698	171,043	46,648,800•	4.34•
2016	22.4	6.6	28.1	40.7	1,778,620•	687,692•	651,722•	130,7461•	184,745•		
2017	21.4	6.6	28.5	41.2							
2018*	21.0	6.6	28.7	41.2							
Sources	LFS	LFS	LFS	LFS	MECD	MECD	MECD	MECD	MECD	MECD	Contabilidad Nacional del INE

LFS: Labor Force Survey.

MECD: Ministerio de Educación, Cultura y Deporte.

INE: Instituto Nacional de Estadística.

• Provisional data.

**Data refer to January-March.*

Table 4

Social protection: Benefits

	Contributory benefits*							Non-contributory benefits			
		Retirement		Permanent disability		Widowhood		Social Security			
	Unemployment total	Total	Average amount (€)	Total	Average amount (€)	Total	Average amount (€)	Unemployment	Retirement	Disability	Other
2006	720,384	4,809,298	723	859,780	732	2,196,934	477	558,702	276,920	204,844	82,064
2008	1,100,879	4,936,839	814	906,835	801	2,249,904	529	646,186	265,314	199,410	63,626
2010	1,471,826	5,140,554	884	933,730	850	2,290,090	572	1,445,228	257,136	196,159	49,535
2012	1,381,261	5,330,195	946	943,296	887	2,322,938	602	1,327,027	251,549	194,876	36,310
2014	1,059,799	5,558,964	1000	929,484	916	2,348,388	624	1,221,390	252,328	197,303	26,842
2015	838,392	5,641,908	1,021	931,668	923	2,353,257	631	1,102,529	253,838	198,891	23,643
2016	763,697	5,731,952	1,043	938,344	930	2,364,388	638	997,192	254,741	199,762	21,350
2017	726,575	5,826,123	1,063	947,130	936	2,360,395	646	902,193	256,187	199,120	19,019
2018	763,466●	5,892,483♦	1,078♦	949,614♦	940♦	2,358,074♦	652♦	900,047●	256,727●	197,832●	17,399♦
Sources	BEL	BEL	BEL	BEL	BEL	BEL	BEL	BEL	IMSERSO	IMSERSO	IMSERSO

BEL: Boletín de Estadísticas Laborales.

IMSERSO: Instituto de Mayores y Servicios Sociales.

** Benefits for orphans and dependent family members of deceased Social Security affiliates are excluded.*

• Data refer to January-March.

♦ Data refer to January-April.

Table 5

Social protection: Health care

	Expenditure				Resources				Satisfaction		Patients on waiting list	
	Total (% GDP)	Public (% GDP)	Total expenditure ($ per inhabitant)	Public expenditure (per inhabitant)	Medical specialists per 1,000 inhabitants	Primary care doctors per 1,000 people asigned	Specialist nurses per 1,000 inhabitants	Primary care nurses per 1,000 people asigned	With the working of the health system	With medical history and tracing by family doctor or pediatrician	Non-urgent surgical procedures per 1,000 inhabitants	Specialist consultations per 1,000 inhabitants
2006	7.76	5.62	2,391	1,732	1.6	0.7	2.8	0.6	5.6	7.0	9.4	35.4
2008	8.29	6.10	2,774	2,042	1.8	0.8	3.0	0.6	6.4	7.0	9.2	37.5
2010	9.01	6.74	2,886	2,157	1.8	0.8	3.2	0.6	6.6	7.3	9.8	33.0
2012	9.09	6.55	2,902	2,095	1.8	0.8	3.1	0.6	6.6	7.5	11.8	35.9
2014	9.08	6.36	3,057	2,140	1.8	0.8	3.1	0.7	6.3	7.5	11.4	39.4
2015	9.16	6.51	3,180	2,258	1.9	0.8	3.2	0.7	6.4	7.5	12.2	43.4
2016	8.98	6.34	3,248	2,293		0.8		0.6	6.6	7.5	12.7	40.9
Sources	OECD	OECD	OECD	OECD	INCLASNS	INCLASNS	INCLASNS	INCLASNS	INCLASNS	INCLASNS	INCLASNS	INCLASNS

OECD: Organisation for Economic Co-operation and Development.

INCLASNS: Indicadores clave del Sistema Nacional del Salud.

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Notes

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