French growth in 2015: external and internal factors balance each other out

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*I*n 2015, French growth reached +1.2%, up from +0.7% in 2014. This acceleration in activity took place in an international environment marked by several significant changes: a sharp fall in the price of energy commodities, the stepping up of the accommodative monetary policy put in place by the European Central Bank, slowdown in the emerging economies and recovery in the countries of Southern Europe.

After peaking between the beginning of 2011 and mid-2014, oil prices then decreased substantially, pulling down the price of other energy commodities. The slide continued into 2015, when the price in euros of a barrel of Brent crude was 42% below its average 2013 level. Simulations were carried out with macroeconometric models (Mésange and NiGEM) to estimate the effects of this reduction in the energy bill, both for France and for most of its partners: according to these two models, it would seem to have generated a growth surplus of around 0.3 points in 2015 for the French economy.

The same models were used to estimate the contribution to growth of the other significant features of 2015. The ECB's accommodative monetary policy, combining cuts to base interest rates with some unconventional measures, resulted in a continuous reduction in sovereign yields and private interest rates on the one hand, and a depreciation of the euro on the other. These effects benefitted all the countries in the Eurozone and, for the French economy, they probably brought a growth surplus of around 0.4 points in 2015, with 0.2 points attributable to the fall in interest rates and 0.2 points to the depreciation of the euro.

In addition, the gradual phasing out of fiscal consolidation episodes in the Eurozone countries contributed to an acceleration in their domestic demand, and hence to additional demand for the products of French exporters. However, the slowdown in the emerging economies and the drop in energy commodity prices had an opposite effect. Overall, these two effects probably reduced French growth by 0.1 points in 2015.

All these external factors appear to have contributed around 0.5 points to growth in the French economy in 2015. Activity in France continued to be penalised by internal factors, however. First, the decline in household investment, which began in 2007 but was amplified from 2013 onwards, continued into 2015, taking 0.1 points off growth. Secondly, fiscal consolidation was less severe in France than in its European partners in 2012 and 2013 but did continue after that period and would appear to have continued affecting activity in 2015, amounting to 0.4 points of GDP. All in all, given the assumptions made, internal factors appear to have offset the favourable external factors and growth in French activity therefore stood practically at its trend rate in 2015.

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The drop in energy commodity prices buoyed activity

The price of oil and other energy commodities tumbled in 2015...

Between the beginning of 2011 and mid-2014, oil prices reached a high plateau at around $110 for a barrel of Brent crude sourced from the North Sea. This rate reflected OPEC's price stabilisation strategy, and the use of oil as a safe haven on the financial markets. From summer 2014, oil prices plummeted, reaching an annual average of $53 in 2015, which represents a drop of 52%. The reason for this fall was an imbalance in the physical markets, producing an abundance of supply just when demand was slowing. On the supply side, the high prices at the start of the 2010s stimulated unconventional American production which has high production costs. OPEC's new strategy to stabilise its market share increased production still further. On the demand side, the slowdown in the emerging economies, especially China, was not offset by the moderate recovery in the advanced economies. The imbalance between supply and demand resulted in large stocks which in turn placed a strain on prices.

The rise of the dollar against the euro over the same period limited the decrease in oil prices in euros, from €82 on average in 2013 to €47 in 2015, a drop of −42% (*Graph 1*). The drop in the price of oil also influenced the prices of other energy commodities, especially natural gas. As a result, the average price of a million British Thermal Units on the European markets fell from €8.9 to €6.5 between 2013 and 2015, a drop of 30%.

*... reducing the price of imports and the energy bill...*

As France is a net importer of unprocessed hydrocarbons and refined petroleum products, the drop in oil prices brought the price of imports down. In 2015, the price of imports of crude petroleum products fell by 40% compared with 2013, that of refined products dropped by 34% and the price of gas fell by 26%. France's energy bill was therefore reduced by €23 billion in 2015, or 1.1 points of GDP, compared with the situation in 2013 (Bortoli and Milin, 2016).

... and enabling companies to restore their margins due to the drop in intermediate consumption costs...

The drop in the price of hydrocarbons represented a transfer of wealth from producing countries to importing countries such as France. Commodities contribute to the production process as intermediate consumption in industry (especially in coking-refining and chemicals) and in services provision (mainly transportation). For enterprises in these sectors, the fall in the price of energy materials represented a reduction in production costs, enabling them to choose between increasing their margins or reducing their selling prices.

Although increasing margins may be favoured in the short-term, this solution generally makes way for a drop in production prices, which then spreads gradually throughout the economy, including those sectors that consume only small amounts of energy commodities.

1 - Oil (Brent) and natural gas prices
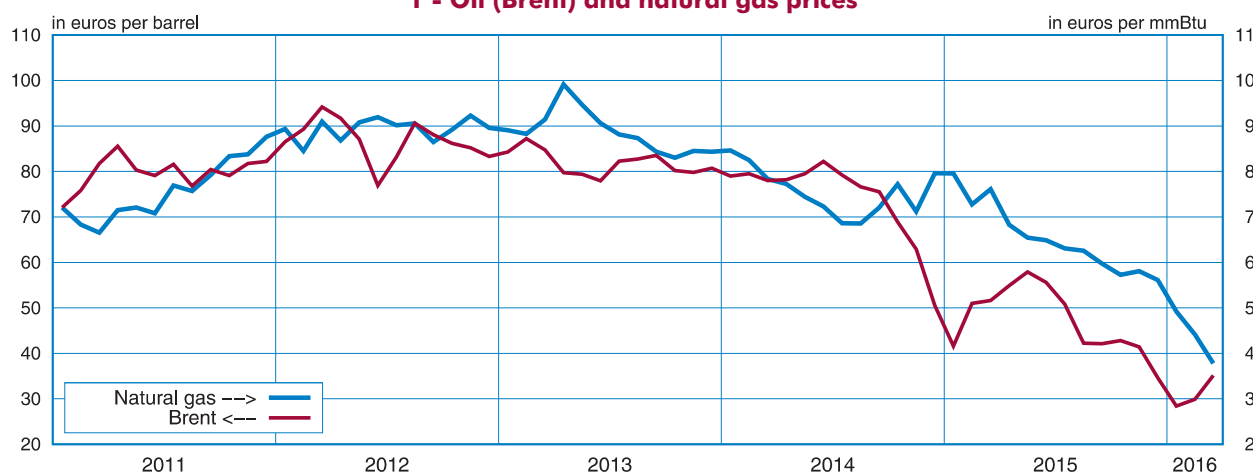
Sources: APX Endex, INSEE

Between 2013 and 2015, the margin rate for non-financial corporations increased by 1.5 points (from 29.9% to 31.4%), of which 0.6 points were due to the variation in terms of trade, i.e. the difference between value added price and final consumption price, with the drop in oil prices being one of the main factors. Of the €23 billion saved by France, about €14 billion was recovered by enterprises. This additional income then spread slowly but surely throughout the rest of the economy: selling prices fell back slightly and the improved financial situation made corporate investment easier.

… which also sustained household purchasing power

Households benefited directly from the fall in oil and gas prices: the reduction in the petrol, gas and domestic fuel oil bill represented a direct gain of around €10 billion in 2015 compared with the situation in 2013. This was the equivalent of a 0.8-points increase in purchasing power in 2015, compared with a situation where the price of energy commodities remained at its 2013 average, after 0.3 points in 2014 (Bortoli and Milin, 2016). In addition, the decrease in company production prices resulted indirectly in a drop in consumer prices, giving an extra boost to households' purchasing power.

All in all, the additional purchasing power led to more consumption, which consequently sustained activity.

This also affected France's trading partners, offsetting the fall in demand from producing countries

France's trading partners were also affected by the fall in the price of commodities. For those that are net importers of fossil fuels, like France, the fall in prices stimulated their economies via the same mechanisms. Their domestic demand increased accordingly and resulted, all other things being equal, in additional demand for French products. Countries producing commodities, however, were penalised by the drop in prices, which limited their imports, although the downturn in French exports to oil-producing countries in 2015 was virtually entirely due to exports to Russia where other factors than the drop in oil revenue played a part, notably reciprocal economic sanctions between the countries: sector specialisation in France seems in part to have protected exporters from the slowdown in demand from other countries producing commodities (DGDDI, 2016). All in all, the geographic and sector-based orientation of French foreign trade resulted in a net positive effect on demand for products from French exporters.

Ultimately, because of its direct impact on French activity via the upturn in company margins and household purchasing power gains, as well as its indirect impact via the surplus demand from trading partners, the fall in energy commodity prices in 2014 and 2015 is set to result in a growth surplus of 0.3 points of GDP in 2015, compared with a situation where these prices remained at their 2013 average (*Appendix*). This effect can be broken down into 0.2 points of domestic effect, mainly through household consumption and corporate investment, and 0.1 points of loop effect due to the increase in exports to other partner countries that had also benefited from this positive shock.

Monetary policies measures caused interest rates to fall and contributed to the depreciation of the euro

*Quantitative easing brought down both short-term and long-term interest rates*

Since the 2008 financial crisis, the ECB has put a series of measures in place in order to sustain activity and thus bring inflation in the Eurozone closer to its target ("below but close to 2%"). On the one hand, it mobilised the traditional monetary policy tools: base interest rates were gradually reduced and have been practically at zero since mid-2012. In addition, the ECB launched some unconventional measures: in the course of 2014 (Asset-backed securities (ABS), Targeted Longer-term Refinancing Operations (TLTRO)) and then at the beginning of 2015 by introducing the quantitative easing program consisting of purchasing €60 billion of assets per month, including sovereign bonds, from March 2015 onwards.

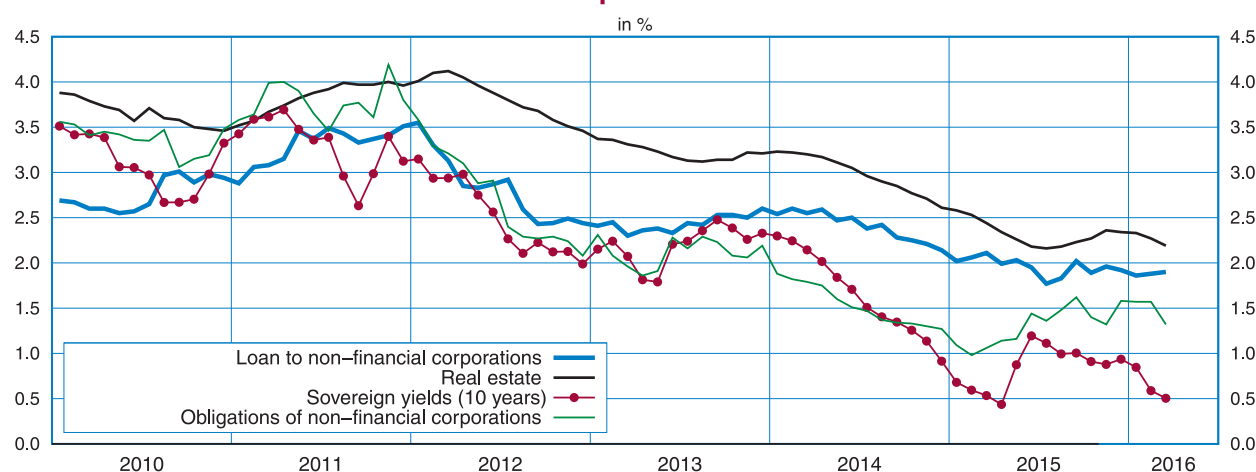# French growth in 2015: external and internal factors balance each other out

The introduction of these policies led to a drop in interest rates, affecting short-term rates directly and long-term rates by a diffusion effect (Héam et al., 2015). In fact, a short-term drop in rates which is perceived as being sustainable leads to expectations of lower future short-term rates and results in a drop in long-term rates, which are interpreted as being a combination of expectations of successive short-term rates. In this way, the measures put in place by the ECB, which included the quantitative easing programme expected since summer 2014, announced in January 2015, extended in December 2015 and expanded in March 2016, resulted in a fall in all rates.

By type of borrower, the drop in rates first affected sovereign yields which declined significantly in the course of 2014 with a trough at the start of 2015, before beginning to pick up slightly in Q2 2015 (*Graph 2*). The fall in rates then worked through into private rates (*Graph 3*). Banks could now lend to businesses and households at lower interest rates, as these were falling as a result of the effect of trade-off between bonds, especially as the financing costs of financial institutions was decreasing. Furthermore, by reducing budgetary constraints in the European countries, the ECB's monetary policy limited financial fragmentation between the Eurozone countries, where sovereign yields and private rates converged.

2 - Ten-year sovereign yields

in %

Source: European central bank
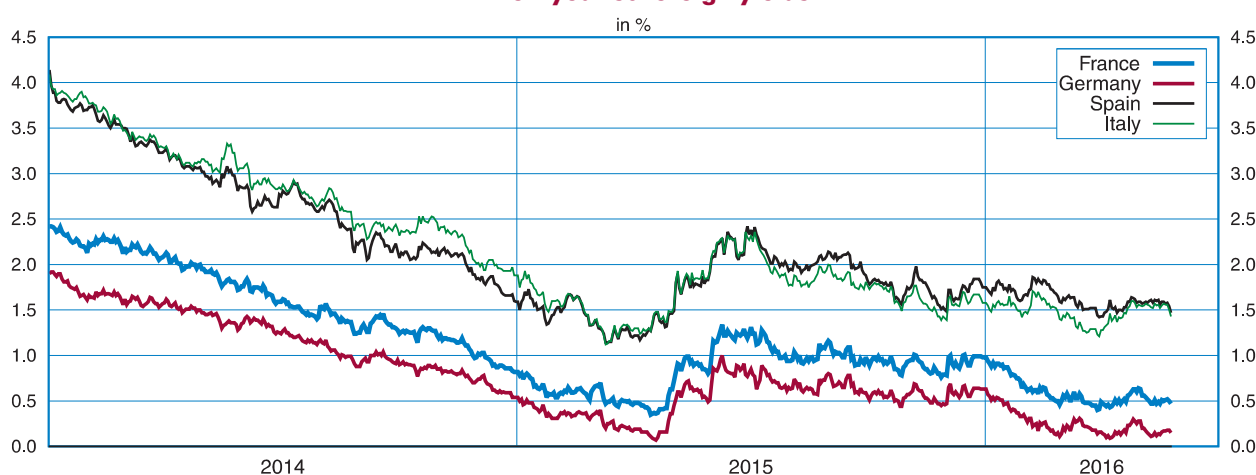
3 - Private and public rates in France

in %

Sources: European central bank, Banque de France

Conjoncture in France

The easing sustained investment and consumption by easing financial constraints on economic agents

By easing borrowing conditions for businesses and households, the decline in long-term rates encouraged productive and property investment directly. For businesses, investment opportunities became profitable as the cost of capital fell. Outstanding loans to non-financial corporations accelerated in 2015, especially in France (*Graph 4*). For households, their capacity to purchase property increased, which could result in additional investment in housing, all other things being equal.

To a lesser extent, the decline in short-term rates sustained household consumption. This effect is ambiguous in principle. First of all the drop in rates erodes their property income and therefore limits their consumption ("income" effect). However, on the one hand, households with no financial constraints are encouraged to consume more through a substitution effect linked to a lower return on savings. On the other hand, households that are under financial constraints benefit from less costly consumer credit. In 2015, outstanding consumer loans increased significantly in the Eurozone. All in all, an empirical analysis shows that the substitution effect outweighs the income effect and the fall in rates increased household consumption.

Quantitative easing contributed to the depreciation of the euro, boosting the competitiveness of Eurozone exporters

The ECB's accommodating monetary policy also resulted in a depreciation of the euro on the foreign exchange market. The decrease in interest rates, whether the result of conventional or unconventional measures, meant lower bond yields in the Eurozone countries. These became less interesting for investors, compared with sovereign bonds of equivalent quality, especially bonds issued by the US Treasury or British bonds. Investors adjusted their portfolios, selling assets in euros for assets in foreign currencies, which led to a depreciation of the euro in relation to other currencies.

The depreciation of the euro had many consequences. On the one hand, it made imports more expensive and generated imported inflation. On the other hand, it had a favourable effect on activity in the Eurozone by strengthening its price-competitiveness (Ducoudré and Heyer, 2014). The weaker euro thus contributed to stimulating exports and curbing imports. However, since all the countries in the Eurozone were benefiting from this effect, the price-competitiveness of French exporters compared with other businesses in the Eurozone did not improve. In addition, although the euro slipped against the dollar (–16.4% in 2015 compared with 2013) and against sterling (–14.5%), it rose against the emerging currencies, with the result that the decline in the real effective exchange rate was less marked (–4.3%; *Graph 5*).

4 - Outstanding household consumer credits and loans to non-financial corporations in France

year–on–year changes in %

Household consumer credits
Loans to non–financial corporations
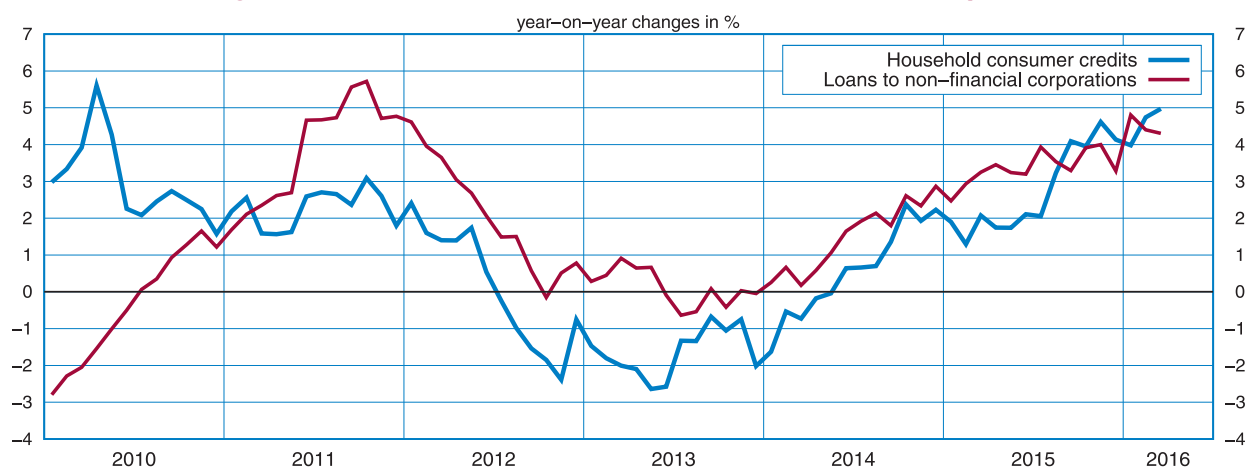
Source: Banque de France

French growth in 2015: external and internal factors balance each other out

All in all, the drop in rates and the depreciation of the euro should result in a French growth surplus of 0.4 points

The consequences of the ECB's accommodating monetary policy – drop in interest rates and depreciation of the euro – contributed favourably and directly to activity in France. They also stimulated activity in the other Eurozone countries, where more buoyant domestic demand led to an increase in imports and hence in demand for French products. This channel of foreign trade strengthened the direct macroeconomic effects of the ECB's monetary policy from which France benefited. All in all, it can be assumed that the fall in interest rates and the depreciation of the euro resulted in a French growth surplus of 0.4 points in 2015, of which 0.2 points were attributable to the drop in interest rates (mainly *via* corporate investment) and 0.2.points to the euro (*via* foreign trade).

The recovery in activity in Southern Europe also sustained French growth

After being hit by a sharp rise in their financing costs and making substantial fiscal efforts to restore their credibility, the economies of Southern Europe limited their fiscal consolidation from 2014 onwards, contributing to a recovery in their domestic demand. Other factors led the recovery, especially the buoyancy of foreign demand and the lifting of financial constraints on productive investment (Fortin et al., 2015). Recovery in these economies therefore buoyed up French exports.

The sovereign debt crisis and resulting fiscal consolidation severely penalised activity in Southern Europe until 2014…

The 2008 economic crisis led to a deterioration in public finances in the Eurozone countries, and particularly in Southern Europe (Graph 6). Faced with a sharp rise in financing costs, most of these countries launched fiscal consolidation policies from 2011 to bring their public finances back onto a

5 - Exchange rate of the Euro against the dollar and the pound sterling and effective exchange rate for France
base 100 in Q1 2013
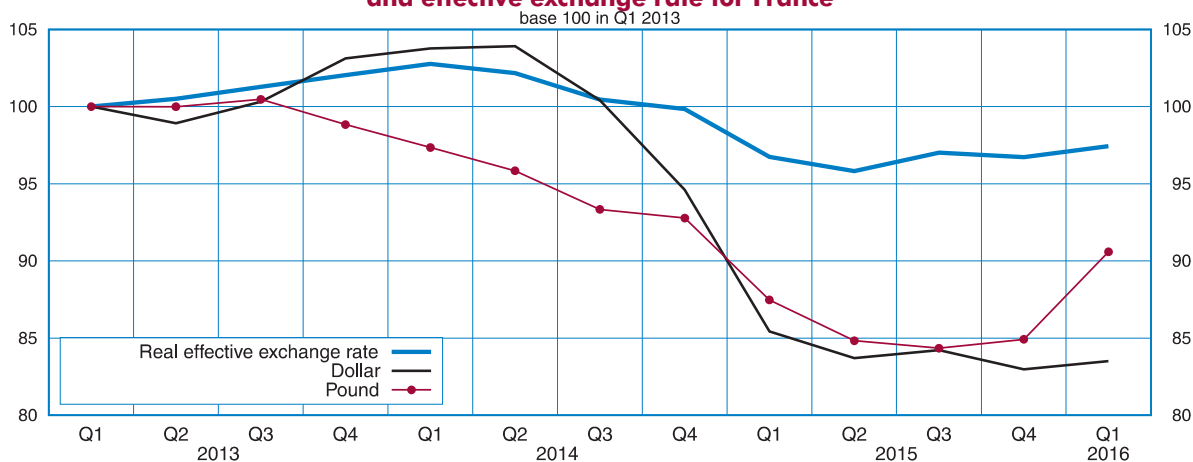
Sources: European central bank, DG Trésor

6 - Public balances in the main Eurozone economies
in % of GDP
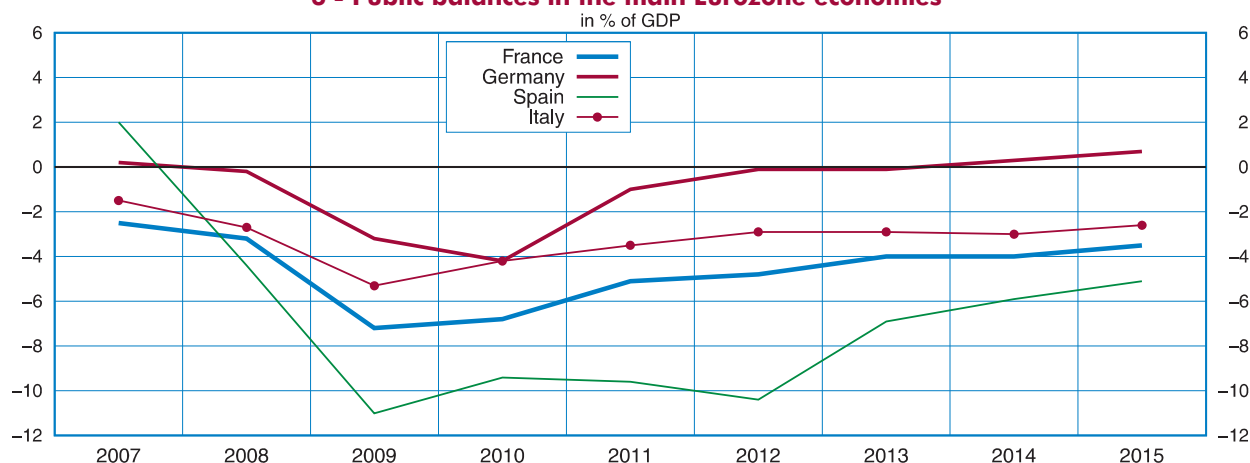
Sources: National ststistical institutes, general governments accounts

sustainable path (Kerdrain and Lapègue, 2011). In Spain, fiscal consolidation resulted in a reduction in spending and increased tax revenue. Tax rates increased and public-sector wage bill was modified by reducing civil servants' wages and freezing new appointments. In addition, public investment was divided by 2.7 between 2010 and 2013. In Italy, fiscal efforts mainly focused on revenues, through higher taxation on household consumption and wealth (Audenaert and Laffeter, 2016).

… which affected French exports

These consolidation efforts weighed heavily on domestic demand in France's Southern European partners, both directly, via lower spending on public consumption and investment, and indirectly via the fall in private demand linked with the reduced support for household purchasing power and the expectation of reduced demand among businesses. Demand from private agents also suffered from other negative shocks, especially a considerable tightening of lending terms given the situation of the banks in these countries and the rising costs of sovereign debt financing. All in all, as an annual average between 2011 and 2013, household consumption fell back by 3.3% in Spain, and 3.2% in Italy. Over the same period, corporate productive investment declined – on a one-off basis in Spain (−5.3% in 2012, followed by a rebound to +3.5% in 2013) and more permanently in Italy (−9.2% in 2012 then −5.1% in 2013).

In 2012 and 2013, world demand for French products therefore slowed sharply, increasing by 1.7% on average per year, compared with +5.3% per year from 2000 to 2011. This slowdown was mainly due to weakening demand from the Eurozone, whose average contribution to the increase in world demand became neutral in 2012 and 2013, against an average contribution of +2.6 points per year between 2000 and 2011. Notably, imports to Spain, Italy and Portugal, which represented 17% of French exports, fell sharply, curbing French sales and hence French activity.

The countries of Southern Europe limited their fiscal efforts from 2014

Since 2014, financial tensions have eased and after the significant efforts made in previous years, the countries of Southern Europe have now paused in their fiscal consolidation efforts: fiscal stimuli were practically neutral in Southern Europe in 2014 and 2015 (*Graph 7*), and were even positive in Spain. Combined with the easing of financial conditions and the need for renewal of production capacities, this break in fiscal consolidation has facilitated a recovery in consumption and investment over the last two years, timidly in Italy, and very rapidly in Spain.

7 - Selected fiscal stimulus in Europe

in points of GDP
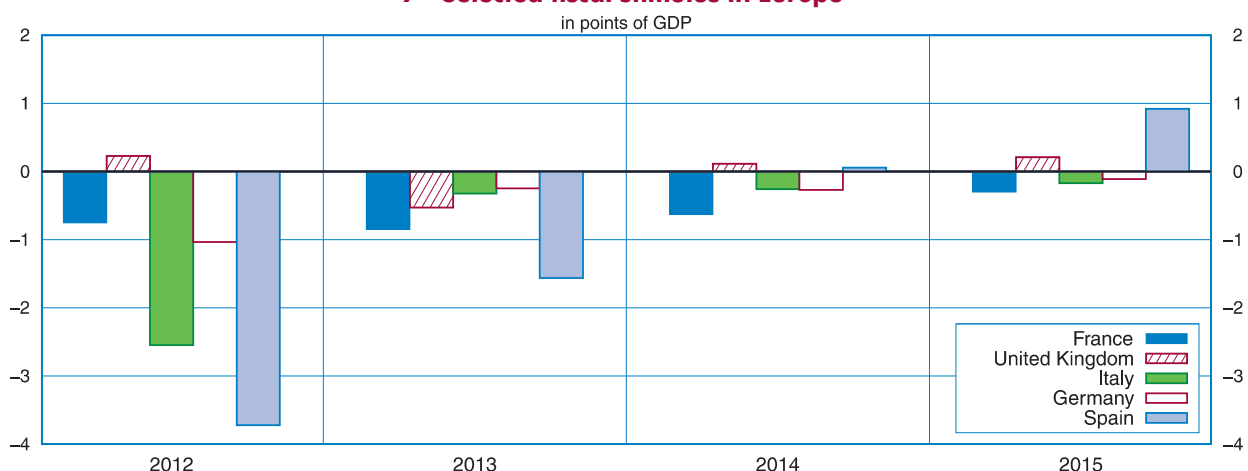
Note: a fiscal stimulus refers to the variation in the structural deficit of an economy, meaning once corrected for short-term fluctuations. A fiscal stimulus with a negative sign corresponds to a reduction in the structural deficit, while a fiscal stimulus with a positive sign corresponds to a deterioration of the said deficit.
Sources: OCDE, Economic Outlook (November 2015) and INSEE, calculations by the authors to correct deficits notified by the European States in March 2016.

French growth in 2015: external and internal factors balance each other out

Domestic demand regained momentum in these countries...

Household consumption in Spain indisputably accelerated in 2014 (+1.2%) then in 2015 (+3.1%), as did general government consumption (+2.7% in 2015 after being stable in 2014). In Italy, household consumption returned to growth in 2014 (+0.6% after –2.4%) and accelerated in 2015 (+0.9%). However, public consumption continued to decline in 2015 (–0.7% after –1.0%).

In Spain, companies have increased their investment very strongly since 2013, especially because they have built up their savings, thereby partly protecting them from stricter lending terms; Spanish companies have also benefited on the one hand from a share of the momentum of external demand since 2013, and on the other from a favourable fiscal stimulus from 2014 onwards. In Italy, investment in equipment did not turn around until 2015 (+3.5% after –2.7% in 2014), driven by demand, while financial conditions became less restrictive.

... sustaining demand for French products

The recovery of domestic demand in these countries has buoyed world demand for French goods: out of 3.3% of growth in 2015 (after +3.9% in 2014), 0.9 points were as a result of Spanish and Italian imports (after +0.5 points in 2014). The value of French exports to Spain and Italy thus accelerated, increasing by 4.4% in 2015 after +3.5% in 2014. In addition to the expected effect of the fall in interest rates and in oil prices[1], this recovery in Southern Europe contributed to the +0.5-points increase in world demand for French products in 2015, which in turn generated a French growth surplus of +0.1 points.

The slowdown in the emerging economies has held back recovery

Activity in the emerging economies slowed in 2015, beyond the expected effect for the countries that export raw materials. This deceleration lessened world demand for French products in 2015.

In China, growth took a downturn and imports slipped back

After a long period of very dynamic growth, China entered a phase of economic slowdown from mid-2010. GDP growth, which was over 10% per year from the mid-2000s, declined gradually to stand at slightly below 7% in 2015. This slowdown reflected the decline in domestic demand, weakening Chinese imports. After rising steadily for 15 years, Chinese imports therefore fell in 2015, losing 15% of their value and contributing negatively to world demand for European goods.

However, the value of French exports to China increased (by almost 10% per year in 2014 and 2015). In fact, the Chinese growth model is now sustained by household demand[2]. Because French exporting businesses specialise in consumer goods sectors, they are therefore well positioned. However, without the Chinese slowdown, they could have increased their sales to that country even further. In addition, the decline in Chinese imports in 2015 affected activity across the whole of Asia, limiting imports by most of France's trading partners in this zone (Korea, Hong-Kong, Malaysia, Thailand, etc.)

In 2015, Russian imports plummeted

The Russian economy slowed after the Russo-Ukrainian crisis and shrank after reciprocal economic and financial sanctions were put in place in summer 2014. Capital flight from Russia and the accompanying slump in commodity prices generated a major crisis for the ruble, leading to a surge in inflation. As a result, the purchasing power of Russian households deteriorated from mid-2014, limiting their consumption. In addition, the sharp deterioration in public finances, matching that of oil revenues, led to further cuts in public spending. In 2015, Russian domestic demand contracted significantly, dragging down imports which fell by over a quarter in one year.

1. Shocks in world demand for French products are no longer affected by the specific effects of previous shocks (see *Appendix*).
2. "Despite the slowdown in the Chinese economy, French exports to China have increased", *Conjoncture in France*, March 2016, p. 125.

Russia's contribution to the change in world demand for French products was +0.1 points in 2012 and 2013. After this, this contribution declined by around 0.2 points in 2014 and 0.5 points in 2015. As a result, French exports to Russia plummeted by €2.2 billion in 2015.

Emerging economies idled in 2015...

The situation in the other emerging economies was mixed. In 2015, Brazil's GDP shrank by 3.9%, due to a sharp downturn in domestic demand: household consumption decreased accordingly, investment nosedived (−14% in 2015) and imports reflected this collapse in demand (−14%). The countries of Central and Eastern Europe, on the other hand, maintained fairly dynamic growth, and demonstrated resilience in the face of the Russo-Ukrainian crisis[3]. Turkey also continued to grow strongly in 2015 despite the Russian embargo and geopolitical tensions on its borders. Lastly, activity in India remained buoyant.

All in all, activity in the emerging economies slowed markedly, with the slowdown in China and recessions in Russia and Brazil outweighing those economies that are still dynamic: +4.0% in 2015 after +4.6% in 2014 against +5.5% per year on average from 2011 to 2013.

... and their imports virtually stagnated, which affected the French economy to the tune of 0.2 GDP points

Total imports of the emerging economies followed this same pattern: after expanding by +7.4% in volume per year on average between 2011 and 2013, they slowed sharply in 2014 (+3.7%) then in 2015 (+0.5%). This slowdown cannot be attributed to changing oil prices: in the model used (NiGEM), income transfer in 2015 as a result of the drop in commodity prices made a zero contribution to the aggregated change in the emerging countries' imports, with the decline in imports in hydrocarbon-exporting countries offset by increases in importing countries. The slowdown in the emerging economies represented a loss of 1.4 points from world demand for French products in 2015 and is expected to reduce GDP growth by 0.2 points.

French growth remained limited by specific factors

French growth in 2015 was sustained by external factors, while internal factors continued to hold it back.

Household investment continued to weigh heavily on growth

From 2000 to 2007, household investment was very dynamic, growing 3.0% per year on average. Several positive factors came together at this time: the share of the population in the age bracket most disposed to house purchase (30-59 year-olds) increased by 1.0 point; household purchasing power increased by an average of 2.4% per year; price fluctuations made the purchase of new homes more advantageous than buying second-hand (Sutter *et al.*, 2015). Since the 2008-2009 crisis, household investment in construction has fallen constantly, falling back 3.3% per year on average between 2008 and 2015. Despite the acceleration in household purchasing power since 2014 (+0.7% then +1.6% in 2015), their investment declined once again in 2015, taking 0.1 points off French growth. In fact, the other factors behind the momentum between 2000 and 2007 (demographics, housing prices) no longer had a positive effect.

In France, past fiscal consolidation continued to affect activity in 2015

Fiscal consolidation was the second internal factor slowing growth in France. Compared with Spain and Italy, fiscal consolidation in France was less strong in 2012 and 2013 but continued into 2014. In fact, the effect of fiscal measures on activity differed according to type. The decline in spending on goods and services had an immediate effect on activity. Conversely, tax increases had a less recessionary short-term effect, as households and businesses alike smoothed out fluctuations in their income by spending accordingly, but this effect was spread over time. Thus the earlier tax increases from 2011 to 2014 were still affecting activity in 2015. In addition, in 2015, the drop in corporation taxes did not have a sufficient immediate effect to offset the fall in public investment.

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3. "The economies of Central and Eastern Europe countries have proved to be resilient to the Ukrainian crisis", *Conjoncture in France*, December 2015, p. 129.

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Previous increases in household levies continued to affect consumption in 2015

First of all, the past tax increases put a strain on growth indirectly via the deterioration in household purchasing power. From 2011 to 2013, direct taxation (taxes and social contributions) of households increased considerably. In 2014, it virtually stabilised but indirect taxation increased (increase in VAT and energy taxes). However, households smoothed the shocks in their purchasing power through their consumption, so that the tax increases from 2011 to 2013 were partly absorbed by a drop in the savings ratio. Since 2014, tax rises for households have been less significant but households have tended to build up their savings ratio. All in all, changes in household consumption in 2015 were still being affected by past tax increases, which in turn is set to weigh on growth to the tune of 0.3 points of GDP (*Table 1*).

Public investment plummeted in 2014 and 2015

From 2014, the fiscal effort focused mainly on expenditure rather than income. While public consumption increased at close to its trend rate over the last five years (around +1.2% per year, Lequien and Montaut, 2014), public investment fell drastically in 2014 (−5.8%) and 2015 (−3.9%), reflecting the municipal election cycle and the reduction in general operating grants to local authorities. This decrease contributed to reducing the public deficit, but it also directly affected activity by 0.1 points in 2015.

Levies on businesses have fallen since 2014 after major increases

Company taxes and social contributions have also affected business activity, as the deterioration in their financial situation affects their investment decisions. Increases in the tax on company profits and in the contributions paid by employers contributed to a deterioration in the financial situation of non-financial corporations between 2010 and 2013, representing 10 points on their margins (*Graph 8*), or 1.7 GDP points. By its scale and its persistence over time, this tax shock continued to influence growth in 2015. In 2014 and 2015, small increases in employers' social contributions slightly amplified the negative effect of the initial shock. These earlier tax increases should continue to adversely affect activity in 2015 by around 0.4 points (*Table 2*): this is because increases in levies on businesses take some time to work through into the economy. They affect the activity through lower investment levels and, to a lesser extent, lower consumption linked to wage moderation.

Conversely, measures to reduce levies on businesses sustained activity: the tax credit for encouraging competitiveness and jobs (CICE) and the Responsibility and Solidarity Pact (PRS) led to a drop in contributions which represented 0.5 GDP points in 2015, after 0.5 points already in 2014 (*Table 2*). As these measures approximate to a fall in the cost of labour for low wages, their effect on activity was a little quicker than a variation in corporation taxes. These measures should result in a 0.4-point improvement in activity in 2015. Overall, the effects of previous and current measures on business activity offset each other.

Table 1 - Selected fiscal stimulus in GDP points and effect on activity - Households

Measures concerning households		2011	2012	2013	2014	2015	2016
Indirect taxation	Share of GDP	0.0	0.1	0.1	0.3	0.2	0.0
	Impact on growth	0.0	0.0	0.0	−0.2	−0.2	−0.1
Direct taxation	Share of GDP	0.3	0.7	0.6	0.2	0.0	0.0
	Impact on growth	0.0	−0.4	−0.7	−0.4	−0.1	0.1
Total	**Share of GDP**	**0.3**	**0.8**	**0.6**	**0.5**	**0.1**	**0.0**
	Impact on growth	**0.1**	**−0.4**	**−0.7**	**−0.6**	**−0.3**	**−0.1**

Forecast

How to read the table: the table shows the scale of the fiscal stimuli in GDP points and their cumulated impact on the GDP growth rate. For example, in 2014, indirect tax increases represented a fiscal stimulus of 0.3 points of GDP and the cumulative increases of these taxes represented an impact of −0.2 points on GDP growth (see *Appendix* for a detailed description).

Source: INSEE

Ultimately, favourable external stimuli and internal restrictions balanced each other out

Finally, in 2015, external factors should sustain growth by +0.5 points (*Table 3*). The contribution to activity of the drop in price of energy commodities is set to be +0.3 points, and the contribution of the ECB monetary policy is set to be +0.4 points. Only demand from trading partners limited growth slightly, with the negative effect of the slowdown in the emerging countries being more than offset by the positive effect of the recovery in Southern Europe. Internal factors should restrict growth to 0.5 points. Measures to cut back the cost of labour (CICE and PRS) should sustain it to the tune of 0.4 points, but previous increases in levies on businesses and households still reduced it by 0.7 points. The decline in household investment should slow the economy by 0.1 points, and general government investment should limit it by 0.1 points. Overall, therefore, internal factors are set to offset favourable external factors and French activity grew by 1.2% in 2015, almost at its trend rate (Lequien and Montaut, 2014).

### Activity looks set to accelerate in 2016

Certain exogenous factors are likely to recede

In 2016, certain exogenous growth factors seem to be fading, in particular the decline in the Euro, which is unlikely to contribute much more to growth in 2016. Similarly, imports from Eurozone countries are likely to slow as the catch-up momentum is fading, especially in Spain, whereas the emerging economies look set to remain sluggish and thus continue to weigh down on growth as much as in 2015.

But other factors should have a favourable effect

However, unless prices rise again, the effect of the past decline in oil prices seems likely to continue to contribute favourably, perhaps a little more so than in 2015 (+0.4 points after +0.3 points). Similarly, the effect of the fall in interest rates is spreading slowly and should continue to foster growth in 2016 with the same wide-ranging effect as in 2015 (+0.2 points).

8 - Levies on enterprises net of subsidies relative to their margins

in %
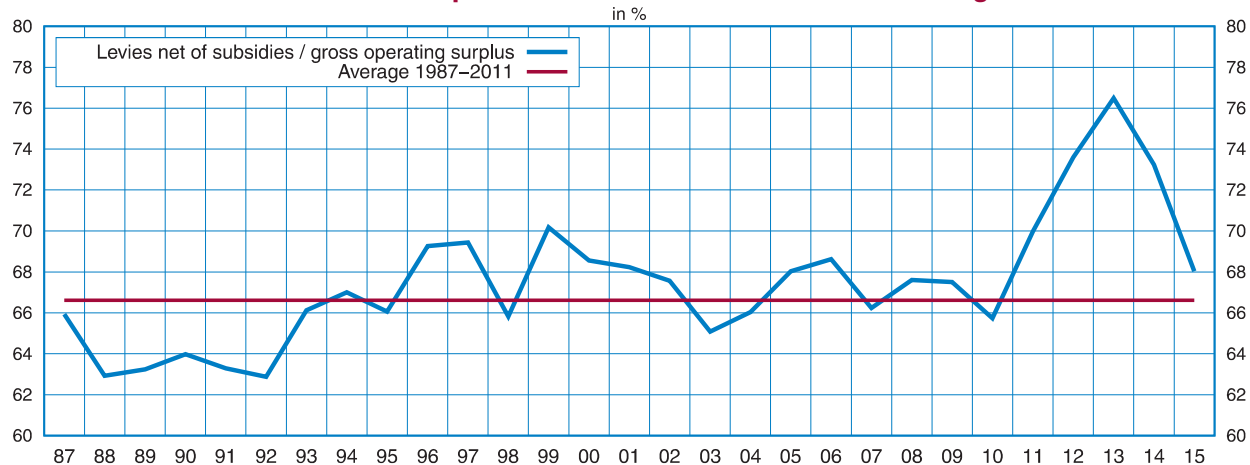
Source: INSEE

Table 2 - Selected fiscal stimulus in GDP points and effect on activity - Enterprises

Measures concerning enterprises		2011	2012	2013	2014	2015	2016
Previous increases in enterprises levies	Share of GDP	0.6	0.5	0.7	0.0	−0.3	0.0
	Impact on growth	−0.1	−0.2	−0.4	−0.5	−0.4	−0.3
CICE and PRS	Share of GDP	0.0	0.0	0.0	−0.5	−0.5	0.0
	Impact on growth	0.0	0.0	0.0	0.2	0.4	0.3
Total	**Share of GDP**	**0.6**	**0.5**	**0.7**	**−0.5**	**−0.8**	**0.0**
	Impact on growth	**−0.1**	**−0.2**	**−0.4**	**−0.3**	**0.0**	**0.0**

Forecast

How to read the table: the table shows the scale of the fiscal stimuli in GDP points and their cumulated impact on the GDP growth rate. For example, the CICE and the PRS represent a fiscal stimulus of −0.5 points of GDP in 2014 and in 2015 and their impact on GDP growth was 0.4 points in 2015 (see *Appendix* for a detailed description).

Source: INSEE

Internal factors should ease

In addition, restrictions specific to the French economy should ease. The increase in building permits and housing starts for new homes is a sign that household investment should stabilise during the year, a fact that can already be seen in Q1 2016. This should also be sustained by the previous acceleration in purchasing power, the constant improvement in borrowing conditions and other specific measures (strengthening zero rate loans, ramping up the Pinel scheme). In addition, the growth of new housing prices, compared with second-hand housing, which has contributed to the decline in household investment from 2008 to 2015, is likely to no longer have an effect in 2016. Public investment too should halt its decline. These two items should then have zero effect on growth, having contributed –0.2 points to the total in 2015.

The CICE, the PRS and the emergency employment plan look set to continue to promote growth, while the recessionary effect of previous increases in levies on both households and businesses is likely to lessen. Thus the growth forecast for 2016 in this *Conjoncture in France* is +1.6% as an annual average, after +1.2% in 2015. ■

Table 3 - Impact of internal and external "shocks" on GDP growth

	2015	2016
Impact on GDP growth rate	**0.0**	**0.3**
Impact of external factors	**0.5**	**0.4**
of which:		
Drop in energy commodity prices	0.3	0.4
ECB's accommodative monetary policy	0.4	0.2
drop in interest rates effect	*0.2*	*0.2*
depreciation of the Euro effect	*0.2*	*0.0*
partner's demand	–0.1	–0.2
recovery in Southern Europe effect	*0.1*	*0.0*
slowdown in the emerging economies effect	*–0.2*	*–0.2*
Impact of internal factors	**–0.5**	**–0.1**
of which:		
previous increases on levies	–0.7	–0.4
reduction of taxation on labour (CICE and PRS)	0.4	0.3
measures in spending on goods and services	–0.1	0.0
fall of households investment	–0.1	0.0

☐ Forecast

How to read the table: the effects measured take into account the different shocks observed until the end of 2015. Shocks in previous years are included (e.g. tax increases from 2011 to 2013 still affected growth in 2015, the drop in oil prices in 2014 also had a major effect on growth in 2015). Later shocks are excluded, however, including those in 2016, with the exception of demand for goods from partners, measures relating to household spending and investment. For example, the impact of fluctuations in oil prices at the start of 2016 is not considered, as the +0.4 points observed in 2016 is dependent only on the decline observed up to the end of 2015.

Source: INSEE

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Appendix – Modelling external and internal shocks using the Mésange and NiGEM models

Estimating the impact of factors on growth in France in 2015 is based on variations, i.e. by estimating the differential between changes in the French economy after a given shock and the changes that would have prevailed in a control scenario with no shock. As these are external factors, the control scenario corresponds to an external environment that has been set at the average state for 2013, with ad hoc processing needed to deal with the world demand dynamic. The year 2013 was chosen as this gives a better understanding of the acceleration in activity in 2015, when considering not only the shocks that occurred in 2015 but also the spread of shocks that started in 2014 and whose effects persisted into 2015. As these are external factors, unless explicitly stated otherwise, the control scenario corresponds to a trend change in these factors.

Two macroeconomic models were used for this analysis:

- *Mésange* is a quarterly macroeconometric model of the French economy, developed and used jointly by INSEE and the Directorate-General of the Treasury (Klein and Simon, 2010). The French economy is modelled in the form of a small open economy – where the international environment is assumed to be exogenous – with three business sectors (manufacturing, non-manufacturing and non-market). Mésange is of average size

(about 500 equations), and is characterised by a short-term Keynesian dynamic and a long-term equilibrium determined by supply factors;

- *NiGEM* is a multi-country model, structurally similar to Mésange and developed by the National Institute of Economic and Social Research (NIESR). With this model, the external shocks in Mésange can be modelled more precisely, taking into account reaction from the rest of the world (see below).

The following external shocks are considered: the drop in the price of energy commodities (oil, gas, coal and lignite), the fall in interest rates and the depreciation of the Euro as a result of the European Central Bank's monetary policy, change in growth in the emerging countries and lastly, the strong demand for goods from countries in the Eurozone.

By assessing the reaction of the French economy to these shocks considered individually as a deviation from the control scenario, and assuming linearity of the models, their respective contributions to GDP growth in 2015 can be determined. As with any exercise of this type, the magnitude of the estimates also depends on the assumptions made when determining this counterfactual scenario.

French growth in 2015: external and internal factors balance each other out

Drop in energy commodity prices

The price of a barrel of oil denominated in euros plummeted by 9% in 2014 and by 42% in 2015 compared with its average value of €82 in 2013. The price of imported natural gas fell by 15% in 2014 and 26% in 2015 compared with its average price of €9 in 2013 (per million British Thermal Units). Lastly, compared with 2013, the price of imported coal and lignite declined by 17% in 2014 and by 20% in 2015. As a differential from the control scenario, these shocks represent a fall in France's energy bill, as they represent a reduction in the import price of extracted hydrocarbons, coal and lignite and the import price of coke and refined petroleum products. This drop in the energy bill represents 0.3 points of GDP in 2014 and 1.1 points in 2015.

An initial estimate of the impact was made using only the *Mésange* model: the drop in the energy bill reduces the price of energy imports, resulting in a drop in production costs for businesses and a reduction in energy consumption prices for households. These two effects are favourable for activity and they then diffuse throughout the whole economy, especially by stimulating household consumption and investment and improving price competitiveness in businesses.

However, such an estimate is only partial as it does not take into account the reaction from France's partner countries to the shock under consideration. As they are mainly importers of oil products, they benefit, like France, from the drop in the price of energy commodities: their activity is therefore stimulated, which results in additional demand for French products; their production costs are also reduced, which leads to a lesser gain from price competitiveness for the French economy, compared with the partial estimate, and this does tend to reduce the effect obtained from only the partial estimate. In practice, the reaction of the rest of the world to the shock was assessed using the *NiGEM* model, and this was then injected as input into the *Mésange* model, to give a full estimate of the impact of the oil shock on French economic activity.

Drop in interest rates

The low inflation in the Eurozone, the fall in base interest rates, and the introduction of the ECB's quantitative easing programme are among the main causes of the drop in interest rates that was observed. This drop had an impact on the supply of credit of all kinds (government debt, consumer credit, mortgages, business loans, etc.), and on all types of maturity structure. However, the *Mésange* model does not allow for this level of financial detail and summarises all these credits in a simpler way using two rates: a short rate represented by the 3-month Euro interbank offered rate (Euribor), and a long rate modelled by the 10-year rate of fungible Treasury bonds (OAT). The reaction of the public sector to the drop in sovereign borrowing rates is not taken into account in this analysis.

Specifically, the shocks modelled in the Mésange model correspond to:

- a decline in the rate for 10-year OATs of 54 basis points in 2014, then 134 basis points in 2015 against the average 2013 value of 219 basis points;

- stagnation in 2014 of the 3-month Euribor rate in 2014, then a drop of 24 basis points in 2015 against the average 2013 value of 22 basis points.

In the *Mésange* model, the decline in interest rates results in, on the one hand, a reduction in the cost of capital for companies, which, for the holder of a unit of capital, is based on a trade-off between leasing it to a company or placing it at a 10-year interest rate. This results in an increase in corporate investment and next a fall in production prices, thus improving price-competitiveness between companies. Regarding households, the drop in interest rates stimulates consumption and investment. All these effects result in a positive impact on activity.

Depreciation of the Euro

The impact of the depreciation of the Euro is assessed by considering the real effective exchange rate for France[1]: compared with its average value for 2013, this rate in fact improved by 0.4% in 2014 then depreciated by 4.3% in 2015. By choosing a real exchange rate rather than a nominal rate, the model can take into account the effective change in relative prices between the French economy and France's trading partners, which determine the competitiveness effects associated with the variation in the Euro over the period being considered.

As with the previous shock, the assessment is made using the *Mésange* model, but with the *NiGEM* model to take into account the international loop effect. As seen earlier in the energy commodities price shock, the depreciation of the Euro also affects France's Eurozone partners, and modifies their demand for French products as well as their domestic prices. Overall, the depreciation of the Euro results in improved price-competitiveness between companies, which stimulates exports and, because imported goods are more expensive, reduces imports in favour of domestic consumption. The impact on economic activity is positive.

Weak growth in emerging countries and upswing in demand from southern Europe

The upturn in demand in southern Europe (Spain, Italy), which was stimulated in part by the break in fiscal consolidation efforts decided from 2014, sustained demand for French products.

In contrast, the sluggish activity in the emerging economies (China, Russia, etc.) in 2015 had a double negative effect, directly on demand for French products, and indirectly by affecting the activity of France's trading partners.

In order to take these effects on world demand for French products into account it is necessary, as for the other shocks, to adjust according to the control scenario. However, this scenario is more difficult to define than for the previous shocks: freezing

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1. The nominal effective exchange rate of the Euro for France is a weighted mean (with the weighting being specific to France) of the exchange rates of the euro against the currencies of partner countries outside the Eurozone. The weighting of the exchange rate in relation to a partner country outside the Eurozone takes France's market share in this country into account and the market shares of this country and of France in each third-party market. The real effective exchange rate of the Euro for France takes into account not only the exchange rate but also the ratio of France's export prices to those of competing countries in the zone under consideration.

world demand for French products at its 2013 average, as was done for oil prices and the Euro, is not relevant since this would leave out the trend momentum of world demand for French goods in previous years.

Ad hoc choices had to be made. For the advanced economies, the control scenario therefore consists in maintaining growth in demand for French products from these economies at the average pace from 2003 to 2013, thus incorporating the pre-crisis years, the crisis itself and the recovery that followed. Taking a shorter control period would have meant using a trend that was too much affected by the great recession and then the sovereign debt crisis in southern Europe.

For the emerging economies, the control scenario consists in maintaining growth in demand for French products from these economies at the average pace over recent years (2011-2013): in this way, the strong momentum of these economies in the years before the crisis is not included, as this would be a period of catch-up which is not representative of a long-term trend.

When there is no shock, this scenario implicitly assumes a trend growth in world demand for French products of around 4.0% per year. In 2015, it grew by +3.7%. Lastly, these shocks calculated for world demand for French products have all effects specific to previous shocks removed (fall in the price of energy commodities, drop in interest rates and depreciation of the Euro, which stimulated demand for French products by +0.7 points). All in all, the shock of world demand for French products in 2015 was −1.0 point (−1.4 points for demand from emerging economies, +0.5 points from the Eurozone and −0.1 points from other advanced economies). This is the shock that was injected into the *Mésange* model to assess the impact on the French economy.

Household investment

For household investment, the shock was measured as the deviation of investment from its trend growth, which was estimated at +1.2% per year (Lequien and Montaut, 2014).

Public consumption and investment

As for household investment, the public consumption and investment shock is measured as the deviation between change observed in volume and trend growth estimated at +1.2% per year. Their impact is then simulated using the *Mésange* model: the effects were virtually immediate, with multipliers slightly greater than one in the first years following the shocks.

Levies on households

Two types of measure were differentiated: direct taxation shocks (income tax, etc.) and indirect taxation shocks (VAT, etc.). In line

with Hauseux and Pramil (2016), direct taxation shock is calculated as the deviation between changes in household levies and changes in earned income (representing the basis for assessment of levies). Indirect tax measures are expressed as the deviation between the harmonised consumer price index (HCPI) and the index measured at constant tax rates by Eurostat. Lastly, measurements of levies are assimilated with direct tax shocks. They are calculated as the deviation between observed change and the trend change estimated at +1.2% per year in real terms.

Indirect taxation measures were simulated using the *Mésange* model, and produced a less recessionary effect in the short term than direct taxation measures due to indexation mechanisms which partly protect household purchasing power and hence consumption. However, the long-term effect is comparable.

Levies on enterprises

Two applications were used. In the first, an impulse was estimated using a similar method to that used for households: shocks were defined as the deviation between changes in levies on enterprises net of subsidies and change in the gross operating surplus (assumed to represent the basis for assessment of levies). The second was based on data from the economic, social and financial reports (RESF) appended to the different finance bills (new measures for taxes and social contributions). For these analyses, two types of measure were differentiated: shocks that influence the cost of labour (social contributions, subsidies such as the CICE) and shocks that affect business income, such as corporation tax. Measures that did not relate directly to social contributions or to corporation tax were divided between these two categories according to the share of labour and capital in companies' value added (70% for contributions, 30% for taxes such as corporation tax): this is the case, for example, of measures to increase the social contribution of solidarity of companies (C3S), based on their turnover.

Estimates from these two exercises gave similar results — the first was selected for this report. Simulations using the *Mésange* model showed that levies on enterprises had considerable long-term effects, but their short-term effect differed according to the type of measure. Measures to reduce the cost of labour had a more rapid effect via an increase in jobs, hence in income and consumption. Conversely, measures to reduce taxes on capital, such as corporation tax, increased long-term production capacity but were disseminated more slowly, mainly via corporate investment. ■