

FRANCE: SELECTED ISSUES



FRANCE

SELECTED ISSUES

July 2016

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FRANCE

SELECTED ISSUES

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STRUCTURAL UNEMPLOYMENT—CAUSES AND POTENTIAL REMEDIES

Structural unemployment in France has long been elevated, and appears to have edged up further since the crisis. This reflects both demand and supply factors, including: high labor taxes, wage stickiness, a growing skill gap, hysteresis effects from the crisis years, a lengthy period of elevated economic uncertainty, inactivity traps created by the unemployment and welfare benefit systems, and demographic factors that have pushed up the labor force. The cyclical recovery is projected to bring down the unemployment rate only slowly, and the NAIRU is estimated to remain above 8 percent over the medium term. We investigate the structural causes of unemployment and potential remedies.

Reducing labor tax wedges can increase both output and employment. In France, CICE, PRS and other recent reforms have reduced the labor tax wedge for the low-paid workers. The wedge remains elevated for middle and upper incomes, but further reductions would require difficult policy trade-offs given the high level of public spending.

Strictness of employment protection in France is above the EU average. Labor arbitration procedures are cumbersome and allow making an appeal for a very long time after dismissal, which adds to uncertainty for companies. Reforms easing dismissal regulations could have a sizable positive impact on output and employment when economic conditions are strong. Early studies suggest that the proposed “El Khomri” law, by reducing judicial uncertainty around dismissals, could have a moderate impact on overall unemployment, while stimulating hiring on open-ended (CDI) contracts as opposed to temporary recruitment (on CDD).

Efficiency of collective bargaining depends on flexibility at the firm level, the reach of sector-level agreements, and the effectiveness of coordination among agents. IMF research suggests that France can be classified among countries with “low trust” and “some coordination”, which entails poor unemployment outcome. In France, trade unions play a leading role in collective negotiations even though membership is low. The El Khomri law would extend the scope for firm-level collective agreements.

While the replacement rate of unemployment benefits in France is broadly in line with other countries, eligibility criteria are relatively lax, with rapid qualification and accumulation of benefit rights, and weak job search requirements. Moreover, specificities of the benefit formula create incentives for alternating between ultra-short contracts and unemployment periods.

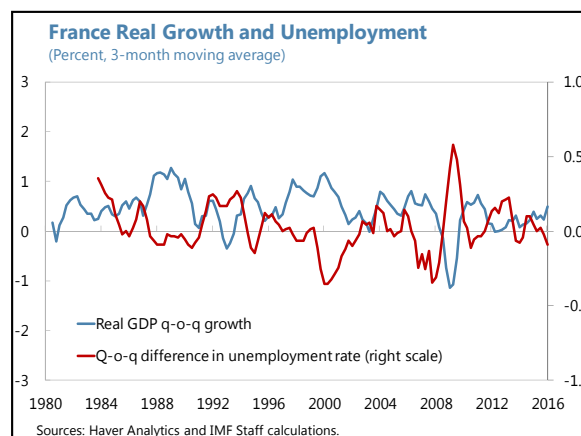
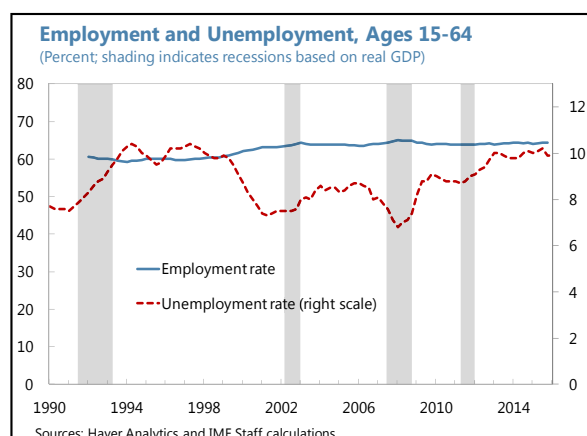
The ratio of minimum to median wage in France is among the highest in the OECD, which may adversely affect job market chances for the young, the low-skilled, and the long-term unemployed. Its automatic annual adjustment can contribute to wage stickiness.

A. What Keeps France's Unemployment High?¹

Before and After the Crisis

1. Unemployment has been elevated for decades, and moved relatively little across the business cycle. The unemployment rate has averaged around 9 percent since 1990, remaining well above rates seen in Germany, the UK, and the United States (and broadly similar to Italy) both before and after the global financial crisis. While the French employment rate is relatively high for prime-age workers (around 80 percent), it has been below several peer countries for the full-age spectrum (around 65 percent versus an average of about 70 in Germany, the UK, and the US).

2. The 2008/9 and 2011/12 crises pushed up unemployment by more than two percentage points while labor force participation remained steady. The jobless rate increased by less than in the United States at the peak of the 2008/9 crisis, but more than in Germany despite similar declines in GDP in these countries, partly reflecting differences in labor hoarding at the height of the global financial crisis. France's unemployment increased again when the euro area downturn intensified in 2011/12. Throughout this period, France's employment rate remained very stable, in contrast to the United States, where it fell significantly and Germany where it continued to rise.



3. The employment response to the most recent recovery has been muted, though recent labor tax cuts may be starting to show effects. The current recovery started in the second quarter of 2013, but the unemployment rate remained stubbornly high at just over 10 percent through the first quarter of 2016 notwithstanding considerable public sector hiring. The muted jobs response is not unusual for France—following recessions, unemployment generally remained high for a number of years into the recovery. However, the employment response has been at the low end of past recoveries and below several peer countries. The most recent data indicate some progress on

¹ Prepared by Nicoletta Batini. Comments from the French authorities are gratefully acknowledged.

private sector job creation, which may have been supported by a significant slowdown in unit labor costs relative to the EU average thanks to a moderation of wage growth coupled with increases in labor productivity, and labor tax wedge cuts.²

4. Unemployment is particularly severe for the young, the low-skilled, and immigrants.

Job losses and lack of job growth affect some groups more severely (Figure 2). In particular:

- *Age.* The jobless rate is particularly high among the young and has been rising since 2008–09. One in four young French are unemployed (compared to one out of seven in the UK and one in fourteen in Germany), and about one in six of them are neither in employment nor in training or education (compared to one out of eight in the UK and one out of sixteen in Germany). Older French workers also face higher unemployment and long-term unemployment as well as lower employment rates than their prime-age peers in France, or in Germany or in the United Kingdom. Since 2008–09, unemployment for the 50+ has grown (around 2 percentage points reaching 7 percent) and has become almost a fifth of total unemployment, compared to a seventh when the crisis hit. Youth (15–24) and older-age unemployment (55–74) each contribute about 2 percentage points each to the overall unemployment rate. Among young and older unemployed, about a third, respectively, are low-skilled.
- *Skills.* The unemployment rate among the low-skilled has risen by over 50 percent since 2008–09, reaching 18 percent—a rate around 50 percent higher than Germany’s and the UK’s. The low-skilled are also the least likely to participate in the labor market, displaying a higher inactivity rate than peers in the EU15 on average (although in France, at 13 and 26 percent of the working age population in 2015 inactivity is also higher for the medium and high-skilled in relation to the EU-15 average, standing at 12 and 23 percent, respectively). The low-skilled contribute about 3 percentage points to the overall unemployment rate, and account for more than half all inactive working age persons.
- *Country of birth/citizenship.* First generation EU28 immigrants working in France are twice as likely to be unemployed relative to workers born in the EU28. Immigrants contribute about one percentage point to the overall unemployment rate.

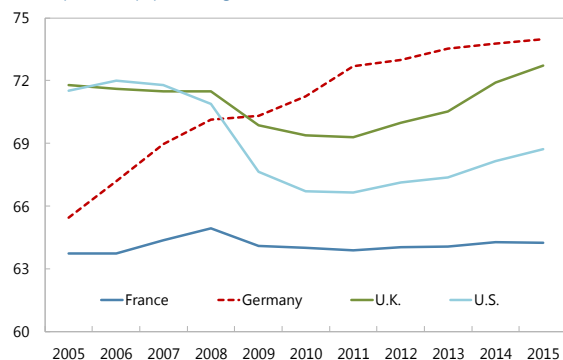
² Thanks to faster increases in labor factor productivity than in wages, French unit labor costs remained well below the EU28 average between 2014–15, growing on average by 0.5 percent over this period versus 1.7 percent in the EU28. Taking into account the tax credit for employment and competitiveness (CICE) introduced in 2013, it is estimated that unit labor costs fell by ½ percent in 2015 according to the authorities.

Figure 1. Weak Labor Market Performance Since the Crisis

The employment rate has stagnated since the crisis.

Employment

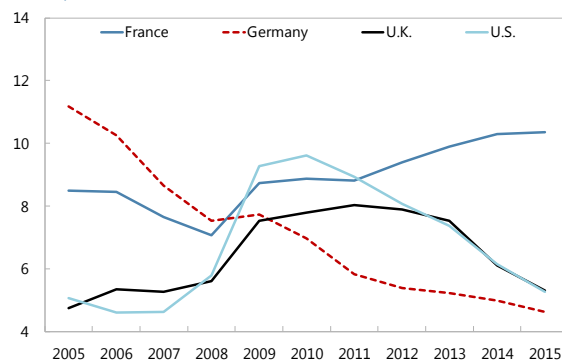
(In percent of population, ages 15-64)



Unemployment has remained elevated.

Unemployment

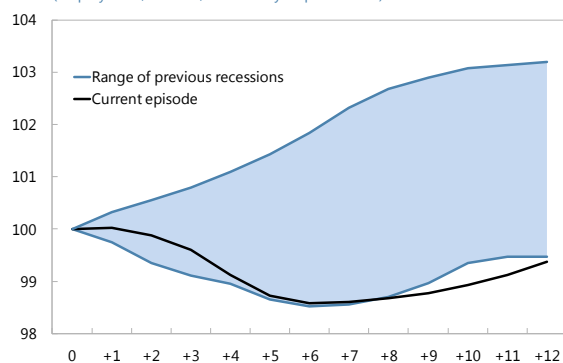
(In percent of labor force)



Employment levels and investment are recovering, but less rapidly than after previous recessions....

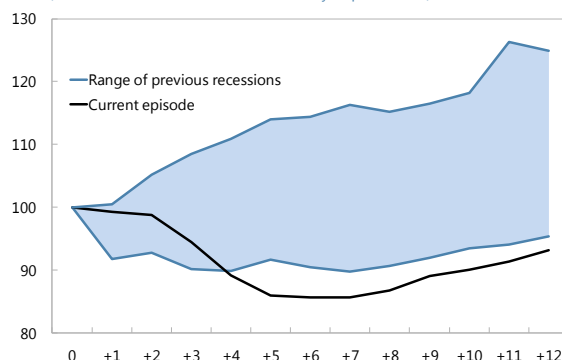
French Recessions and Recoveries

(Employment, in index, business cycle peak = 100)



French Recessions and Recoveries

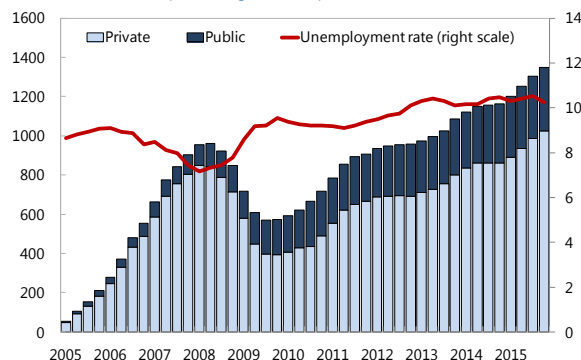
(Business investment, in index, business cycle peak = 100)



Unemployment has hovered around 10 despite increased public hiring.

France: Cumulative Change in Employment

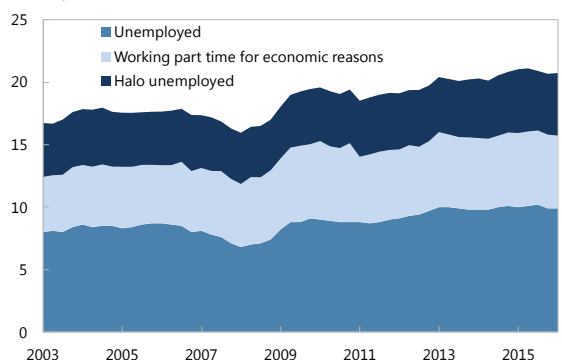
(In thousands of persons; right scale in percent)



Underemployment remains elevated.

Labor Underutilization

(In percent of the labor force)

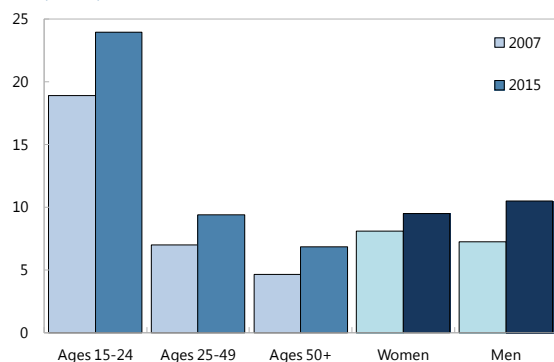


Sources: Haver Analytics and IMF staff calculations.

Figure 2. Vulnerable Groups

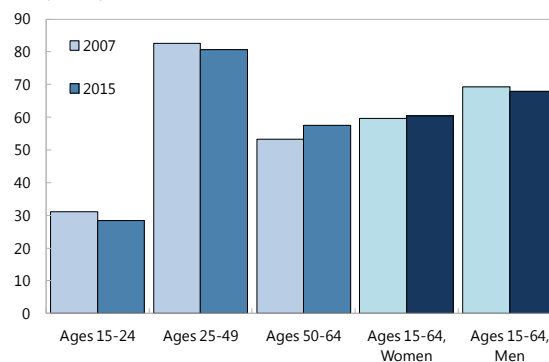
Youth unemployment has risen considerably since the crisis...

Unemployment Rates by Age and Sex
(Percent)



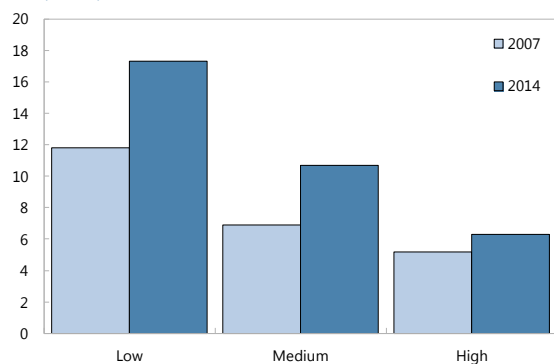
...while youth employment has decreased.

Employment Rates by Age and Sex
(Percent)



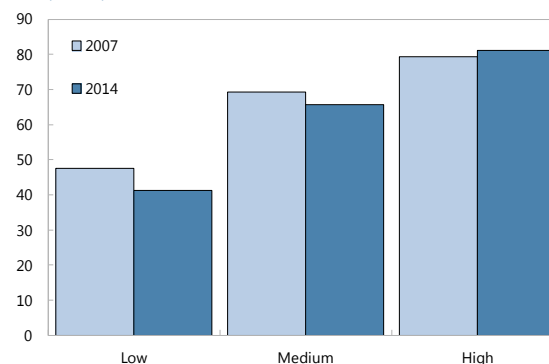
Low-skilled workers have suffered more from the crisis...

Unemployment Rates by Education Level
(Percent)



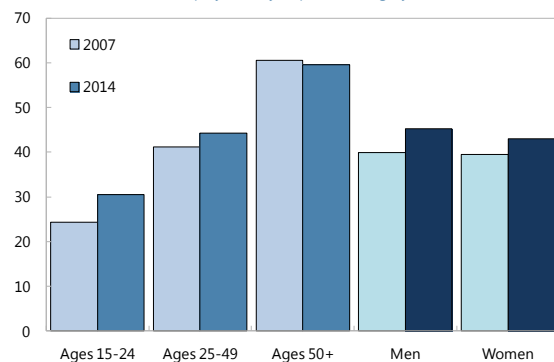
...and remain relatively less employable than pre-crisis.

Employment Rates by Education Level
(Percent)



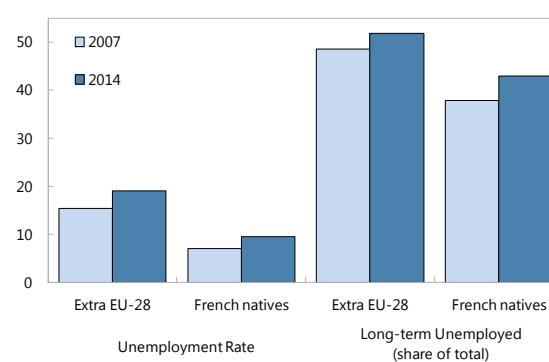
Long-term unemployment has hit especially the 50+, and men...

Long-Term Unemployment Rates by Age and Sex
(Percent of total unemployment by respective category)



...while extra-EU have faced more short and term unemployment than pre-crisis.

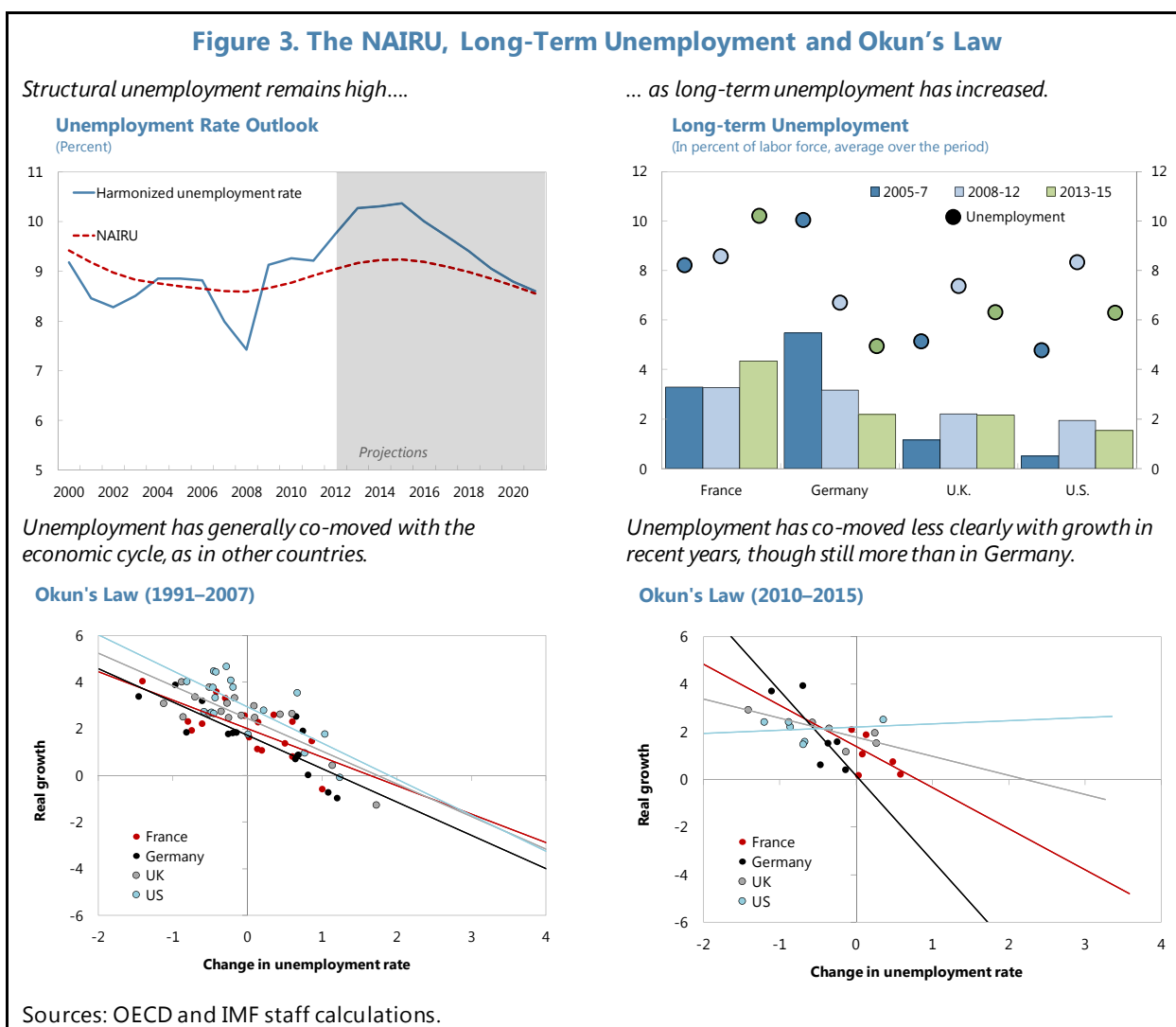
Unemployment and Employment by Country of Birth
(Percent)



Sources: EuroStat and IMF staff calculations.

High Structural Unemployment

5. Most of France's unemployment appears to be structural. The persistence of high unemployment over several decades and through various economic cycles suggests that France's unemployment is more of a structural phenomenon than a cyclical one. Staff's multivariate filter estimates show that the NAIRU has long been elevated in France—averaging around 8½ percent between 1980 and 2007. Staff's estimates are below those of structural unemployment by the European Commission of over 10 percent. Estimates of the “Okun law” over a pre- and a post-crisis sample show that unemployment has moved somewhat less strongly with output in recent years, but still more than in Germany.³



³ The Okun relationship does not imply causality from the jobless rate to growth or vice versa, but merely records the strength of the co-movement between these variables. A steepening of the curve in Figure 3 means that swings in the economic cycle are associated with smaller variations in unemployment and vice versa.

6. The rising number of long-term unemployed points to a further worsening of structural unemployment. Between mid-2008 and early 2016 the number of job-seekers at the *Pôle d'Emploi* in Categories A, B and C registered for a period between 1 and 3 years had increased by 135 percent (reaching about 1.7 million), while the number of those registered for a period longer than 3 years had doubled over the same period (reaching about 0.8 million). As a result, by the end of 2016:Q1, long-term unemployment (more than 12 months) hit the historical record of 2.5 million—43 percent of total unemployment. Alongside, the very long-term unemployment rate (more than 24 months) almost doubled since the crisis, to 2.2 percent of the labor force. These rates are comparable to the EU28 average, but are well above Germany and the United Kingdom.⁴

Possible Causes of Structural Unemployment

7. The severity of the global and euro area crises has likely created hysteresis effects in France. Prolonged or double-dip recessions can create vicious cycles: the longer a worker is unemployed, the harder it is to find a job, given deteriorating professional networks and the perception of eroding skills. As explained by Blanchard and Summers (1986), such “hysteresis” effects mean that the natural rate of unemployment can be influenced by the path of actual unemployment. Following Ball (2009), we regressed staff’s estimate of France’s NAIRU on a lag of itself and a lag of unemployment, restricting the coefficients to sum to one.⁵ Results obtained using recursive estimates show that the coefficient estimated on a one-year lag of actual unemployment in a regression explaining structural unemployment has gone up since 2009. This suggests that, other things equal, the NAIRU has been pulled toward actual unemployment and the pool of structurally-unemployed is larger today than it was before the crisis.⁶

8. Higher economic uncertainty since the crisis may have affected the way in which French firms adjust their demand for labor, possibly depressing hiring during the recovery.⁷ As shown above, France’s Okun relationship between output and unemployment may have weakened moderately since the crisis. Increased economic uncertainty may be a factor, with firms reducing hours per worker more in the downturn and conversely increasing hours more in the

⁴ In 2014, the long-term unemployment rate was 2.2 in both Germany and the United Kingdom; while the very long-term unemployment rate was, respectively, 1.2 and 1.5 percent.

⁵ Following Ball (2009) we run the following regression: $U^* = (1 - c(1))U^*_{t-1} + c(1)U_{t-1}$, where U is the unemployment rate and U^* is the NAIRU, estimated using a multivariate filter. Estimating the $c(1)$ coefficient recursively we find that this coefficient has increased since 2009, albeit marginally.

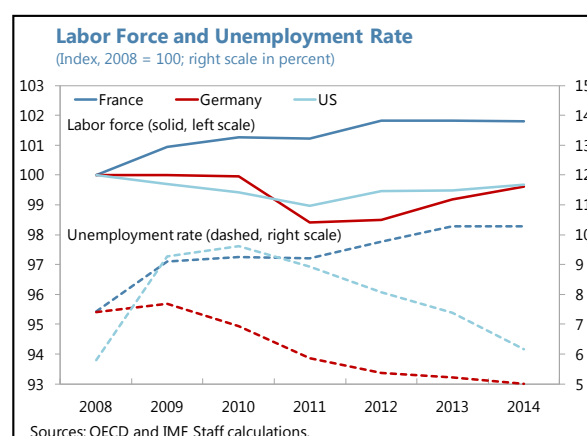
⁶ Empirically, it is unlikely that the relationship between the NAIRU and unemployment is linear. Changes in unemployment sometimes cause changes in the NAIRU and sometimes they do not. In practice, the relationship seems to depend on the past history of the NAIRU and the length of time that unemployment is pushed away from its structural level. In France, actual unemployment and the NAIRU have traditionally been close, given the elevated level of structural unemployment over the past decades.

⁷ According to a wide survey of French firms by the Banque de France in conjunction with the European Central Bank asking how the crisis affected their activity and their behavior, based on respondents’ replies the main economic shock affecting activity was a tightening of demand (see Jadeau et al., 2015).

recovery, thus limiting fluctuations in the demand for workers and unemployment, see for example Jadeau et al. (2015).⁸ While economic uncertainty also increased in other countries that did not see a similar persistence of unemployment post crisis, this may partly reflect the less flexible labor market regulations in France including judicial uncertainty around dismissals (see next section).

9. Skill mismatch is a longstanding issue, and may have worsened. France's "Beveridge curve"⁹—the (normally negative) relationship between vacancies and unemployment—appears to have shifted outward since the crisis, pointing to a possible deterioration in matching efficiency. Unemployment has been growing, while the job vacancy rate has remained broadly stable rather than declining—a result corroborated by estimates in Maravalle et al. (2014). The decline in matching efficiency may reflect a growing skill gap between education outcomes and labor demand. While the share of low-skilled people among the active population has declined between 2006 and 2015 (from 28 to 17 percent of the youth active population, approximately), young adults (25 to 34 years old) who have not completed their upper secondary studies were hit harder by the crisis than older adults with the same educational attainment and by peers in the OECD. Moreover, both PISA and PIAAC educational surveys point to France's relative underperformance among the young with secondary education. There is also evidence of more rapid obsolescence of skills among all age groups after initial education, partly owing to less training of the active population compared to the OECD average (France Strategie, 2016).

10. The steady growth in the labor force has also affected unemployment outcomes. France's labor force has grown on average 0.7 percent per year between 2007–15, even faster than the 0.4 percent in the growth of the working age population over that period. While this is a positive development to the extent that it reflects higher female labor force participation and a rising retirement age,¹⁰ it also means that structural impediments in the labor and product markets can make it difficult to create an equivalent number of jobs. Most strikingly, France's labor force



⁸ The survey found that the factors considered as significantly constraining for employment growth by a large majority of firms between 2010 and 2013 were uncertainty about economic conditions, risks that labor laws are changed, high payroll taxes and firing costs.

⁹ The expectation is that unemployment and vacancies tend to move along a downward-sloping curve across the business cycle. However, structural changes in the economy can cause the Beveridge curve to shift. During times of uneven growth across regions or industries, the vacancy and unemployment rates can rise at the same time. Conversely, they can both decrease when matching efficiency improves for instance to improved education or training, or better flow of job vacancy information.

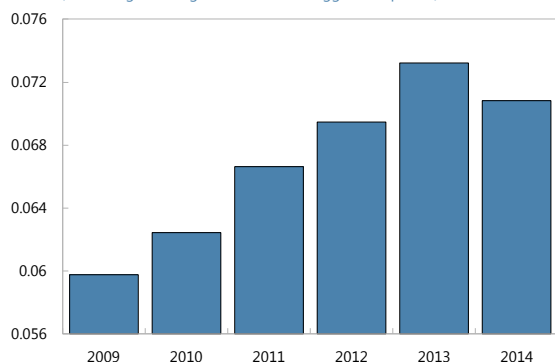
¹⁰ The growing participation of women is evident in the three largest euro area economies, but particularly prominent in France, where female participation in the age cohort 50–64 has increased by 10 percentage points (2 points above men's) since the crisis, after having remained flat for a long period. Following the 2010 pension reform, which increased the statutory retirement age by two years and reduced incentives for earlier retirement, the employment rate among 55–59 years-olds has increased to 68 percent, and to around 25 percent for the 60–64 age group.

increased by almost 2 percent in the crisis years from 2008 to 2012. By contrast, in the United States and Germany, a considerable number of persons dropped out of the labor force, reducing it by ½ percent in the US and by 1½ percent in Germany. This may help explain some of France's relative underperformance in terms of changes in the unemployment rate (as opposed to employment, where differences were less pronounced).

Figure 4. Hysteresis, Matching Efficiency, Wage Responsiveness and Skills Mismatch

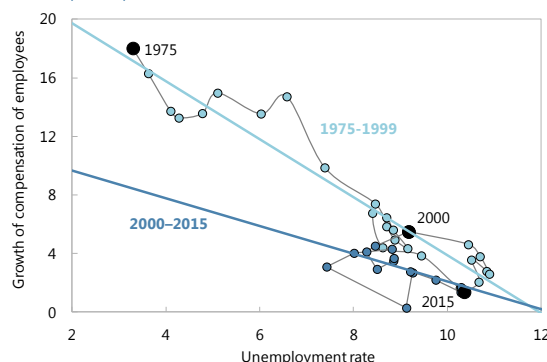
Since 2008 more unemployment gets entrenched....

Coefficient of Unemployment Rate and NAIRU
(NAIRU regressed against both series lagged one period)



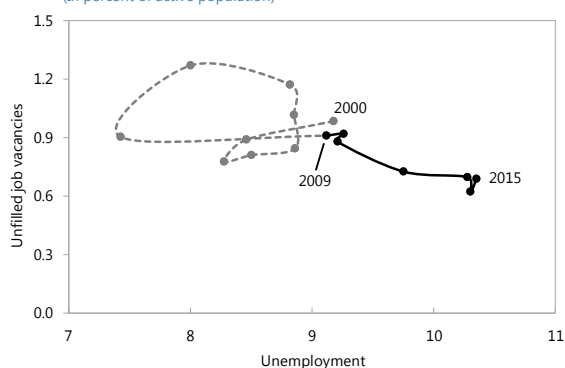
And wages have become less responsive to unemployment, making it harder to reduce it....

France: Phillip's Curve
(Percent)



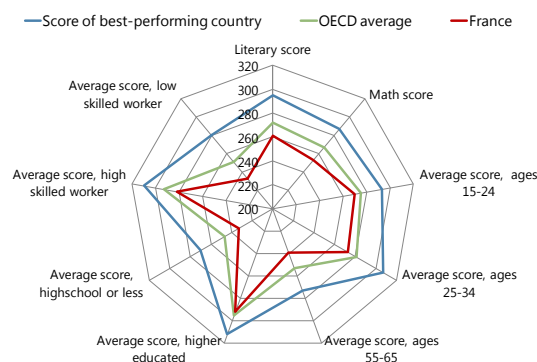
The matching-efficiency has declined...

France Beveridge Curve
(In percent of active population)



...because of large and growing mismatches between educational outcomes and skill needs in the labor market.

France and OECD Relative Educational Outcomes, 2015



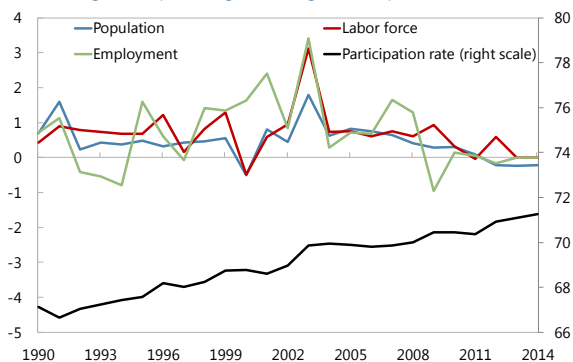
Sources: Haver Analytics, OECD, and IMF staff calculations.

Figure 5. Demographics and Wage Developments

France's labor force has increased steadily....

France

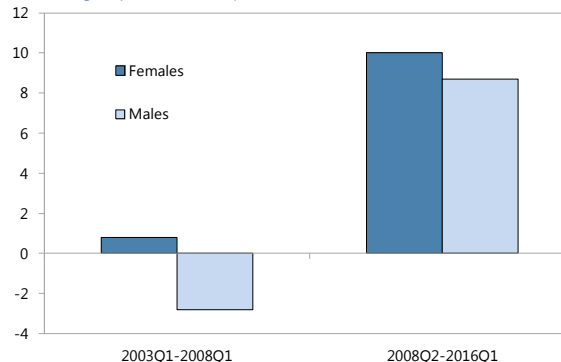
(Annual growth in percent, ages 15-64; right scale in percent)



... driven also by increases in female participation.

Labor Participation Rate, Ages 50-64

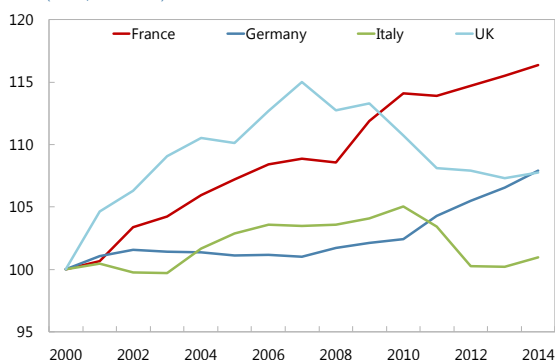
(Change in percent over the period)



Real wages have outpaced peers since the crisis...

Real Average Wage

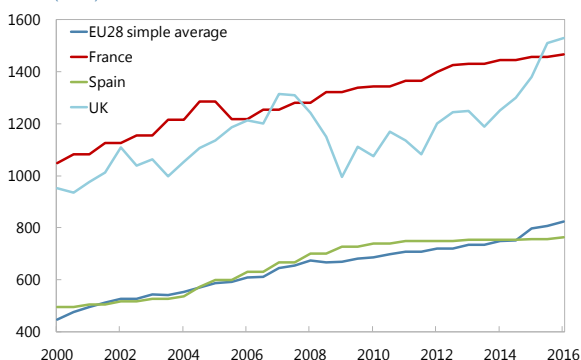
(Index, 2000=100)



... and the minimum wage remains elevated.

Minimum Wage

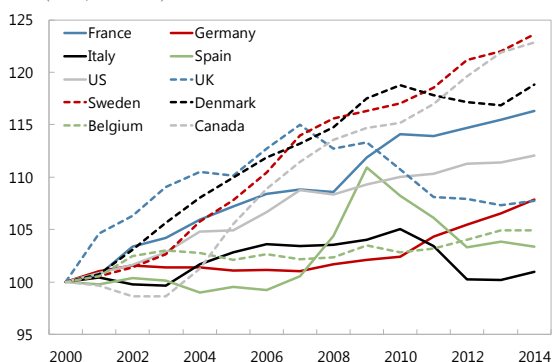
(Euros)



Real wages have grown steadily before and after the crisis...

Real Average Wage

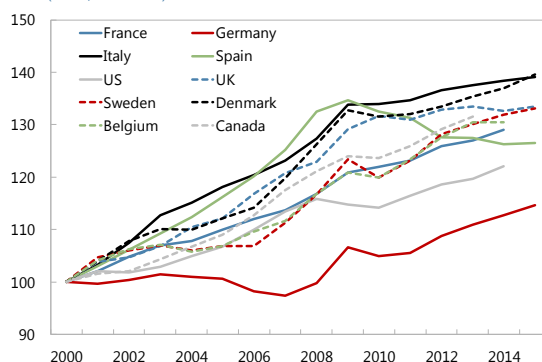
(Index, 2000=100)



...driving up unit labor costs.

Unit Labor Costs

(Index, 2000=100)



Sources: Haver Analytics, EuroStat, OECD, and IMF staff calculations.

11. Wage stickiness may have contributed to structural unemployment, in particular in the years before the crisis. The introduction of a 35-hours week at the beginning of last decade was not accompanied by a reduction in the minimum wage, which plays an important role in France's wage dynamics. Combined with a relatively rigid wage bargaining system (see next section), this may have led to a loss of competitiveness since 2000 and to a slower reactivity of wages to the unemployment rate, as reflected in the sizeable flattening of the Phillips curve since the early 2000s. Both base and average wages have continued to trend above the EU average since 2008, although recently, labor cost competitiveness has improved thanks to the depreciation of the euro and the introduction of labor tax wedge cuts targeted at lower wages. Over the same period, minimum wages (which are indexed to a formula above inflation) have increased less rapidly than in the past.¹¹

12. Certain features of the unemployment insurance system appear to have induced inactivity traps and a decline in the length of fixed-term contracts (see next section). The share of fixed-term contracts (*contrat à durée déterminée*, "CDD") to total contracts has gradually increased, to about 11½ percent, and CDDs lasting less than a month have more than doubled between 2000 and 2014, as employers and employees opted for the greater flexibility offered by alternating short-term work contracts and short periods of unemployment benefits. This behavior has become widespread, with about 0.6 million workers intermittently in and out of registered unemployment, boosting unemployment.

B. Labor Market Reform Challenges¹²

Building on cross-country comparisons and literature recommendations, this chapter identifies the features of the French labor market framework that differ most significantly from that of peer countries. It covers labor tax wedge, employment protection, collective bargaining, unemployment benefits, and the minimum wage setting mechanism.

Labor Market Reforms in Various Phases of the Business Cycle

13. The literature suggests that structural reforms can be beneficial for jobs and growth. Well-designed reforms can lift potential output over the medium term while also strengthening aggregate demand in the near term by raising consumer and business confidence (IMF April 2016 WEO, Chapter 3). In advanced countries such as France reform efforts have involved:

- Deregulating retail trade, professional services, and certain segments of network industries, primarily by reducing barriers to entry (as it was initiated in France by the *Macron* law);

¹¹ The marginal moderation of the minimum wage reflects, in part, efforts on the side of the government since 2008 to ensure that changes to the minimum wage better reflect economic conditions.

¹² Prepared by Michael Gorbanyov. Comments from the French authorities are gratefully acknowledged.

- Increasing the ability of and incentives for the unemployed to find jobs, by boosting resources for and efficiency of active labor market policies, and reducing the level or duration of unemployment benefits where these are particularly high;
- Lowering the costs of and simplifying the procedures for hiring and dismissing regular (that is, permanent) workers (as envisaged in the *El Khomri* law) and harmonizing employment protection legislation for both regular and temporary workers;
- Improving collective-bargaining frameworks in instances in which they have struggled to deliver high and stable employment (*Rebsamen* law and *El Khomri* law);
- Cutting the labor tax wedge—that is, the difference between the labor cost to the employer and the worker’s net take-home pay (*Pacte de responsabilité et de solidarité* and CICE);
- Implementing targeted policies to boost participation of underrepresented groups in the labor market, including youth, women, migrants, and older workers.

14. Labor market reforms can raise output and employment over the medium term, while their short-term payoff depends on types of reforms and phase of the business cycle.

Reductions in labor tax wedges and increases in public spending on active labor market policies tend to have larger effects during periods of economic slack, in part because they usually entail some degree of fiscal stimulus. In contrast, reforms to employment protection arrangements and unemployment benefit systems have positive effects in good times, but can become contractionary in periods of slack. Meanwhile, product market reforms can deliver quick gains under broad range of macroeconomic conditions (Table 1).

Table 1. Effect of Product and Labor Market Reforms on Macroeconomic Outcomes

Area of Reforms	Normal Economic Conditions		Weak Economic Conditions		Strong Economic Conditions	
	Short Term	Medium Term	Short Term	Medium Term	Short Term	Medium Term
Product Market	+	++		+	+	++
Employment Protections Legislation			-	--	+	++
Unemployment Benefits	+	++	-		+	++
Labor Tax Wedge	++	++	++	++		
Active Labor Market Policies	++	++	++	++		

Source: IMF *World Economic Outlook*, April 2016.

Note: The macroeconomic outcomes are output and/or employment; + (-) indicates positive (negative) effect; the number of + (-) signs denotes the strength of the effect. The effect of labor tax wedge decreases and spending increases on active labor market policies is smaller but remains positive when these measures are implemented in a budget-neutral way.

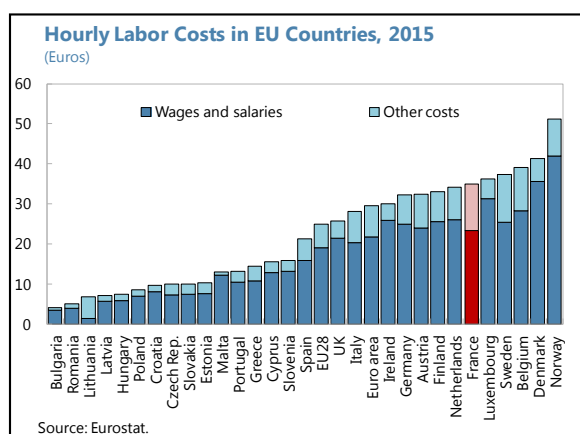
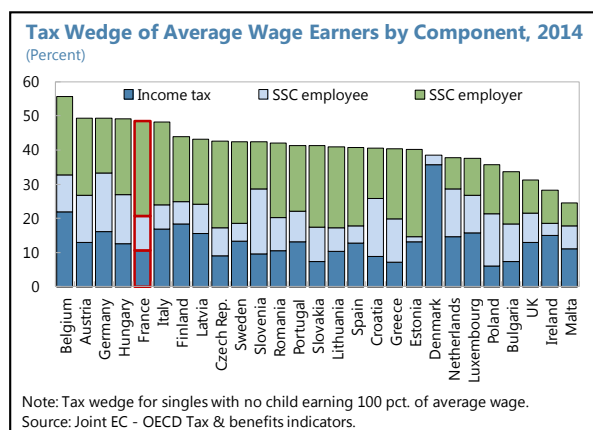
15. In the current environment of modest growth in France and many other advanced economies, prioritization and sequencing of reforms can be an important consideration.

Generally, for countries with significant output gaps, reforms that entail some fiscal stimulus will be the most effective—for instance cuts in labor tax wedges and public spending on active labor market policies. For countries with limited fiscal space, such measures can still be considered when implemented in a budget-neutral way, for example, as part of broad tax and spending reforms. Product market reforms should also be prioritized because they usually boost output but do not weigh on public finances or aggregate demand. In the case of France, significant cuts in the labor tax wedge on lower incomes have been implemented in a period of very low growth, partly financed by spending containment, and combined with product market reforms.

16. In cyclical downturns, certain labor market reforms could potentially exacerbate unemployment in the short term. This applies, in particular, to reforms that cut unemployment benefits and job protection in downturns where employment is generally declining. One strategy could be to enact such measures with a delay, so that they become effective when a recovery is underway. If the enacted measures are credible and no backtracking is expected, they could induce firms to invest and hire prospectively, in advance of the actual implementation of the reforms. Another approach is to use “grandfathering” by applying new rules only to new beneficiaries (of permanent job contracts or unemployment benefits) and exempting current beneficiaries. However, this may not be legally possible in some jurisdictions, can raise important questions about equal treatment of all employees, and may also blunt the impact of the reform for several years. In the case of France, with a moderate recovery underway and private sector hiring generally net positive, the timing appears appropriate for such reforms, with careful consideration of social implications, which may require targeted measures to mitigate the impact on the most vulnerable.

Labor Tax Wedge

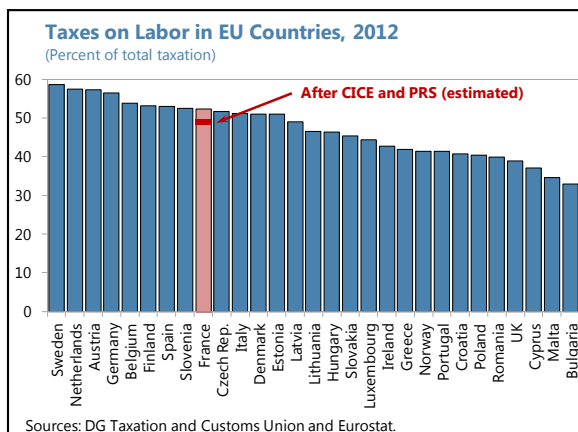
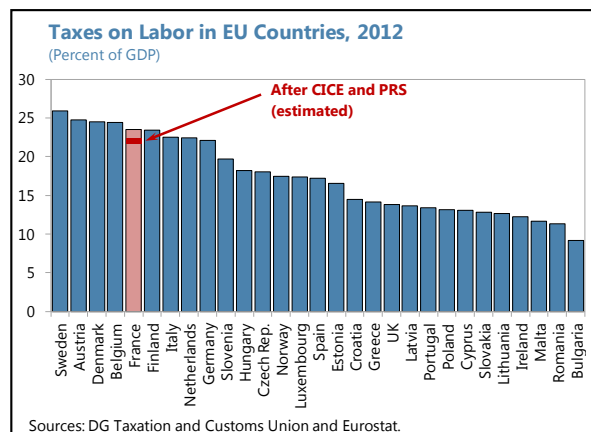
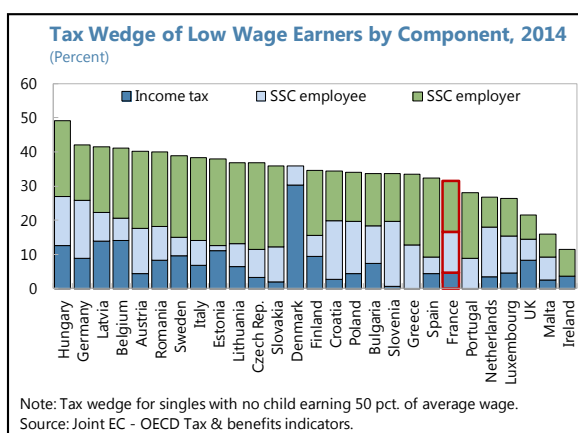
17. Elevated labor taxes in France have contributed to high overall labor costs. For the average wage earners, the labor tax wedge accounted for nearly half of the payroll in 2014, among the highest in the OECD. The elevated labor tax wedge and resilient wage growth have made France’s hourly cost of labor one of the highest in the EU.



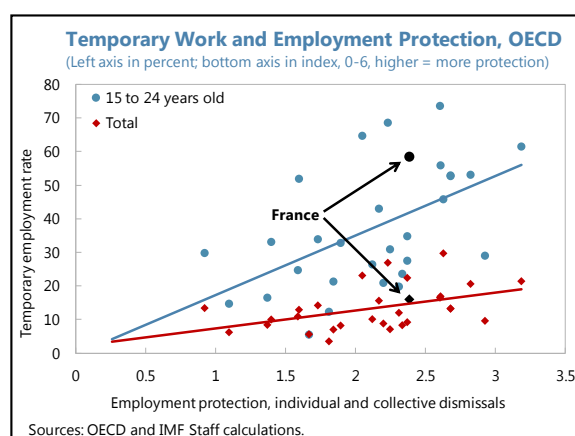
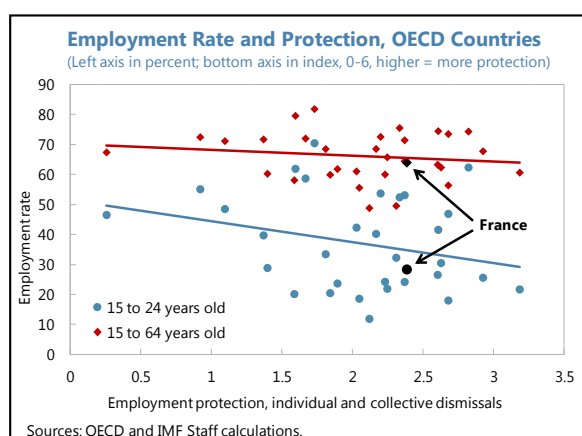
18. The literature indicates that cuts in labor taxes can help boost output and employment. According to IMF cross-country model simulations, a reduction of 1 percent in labor tax wedges increases the level of output (employment) by about 0.15 (0.2) percent in the year of the shock and by about 0.6 (0.7) percent after four years (IMF April 2016 WEO, Chapter 3; cf. Bassanini and Duval, 2006 and references cited therein). Specifically for France, recent IMF staff research suggests that cutting labor taxes would help increase output and reduce inequality (Espinoza and Pérez Ruiz, 2016).

19. The French government has taken measures to reduce the effective taxation of low wage earners.

The tax rebate for competitiveness and employment (*Crédit d'impôt pour la compétitivité et l'emploi*, CICE) offsets payroll taxes on low wages up to 2.5 times the minimum wage, in the amount calculated as 4 percent of payroll in 2013 and 6 percent for subsequent years. The Pact for Responsibility and Solidarity (*Pacte de responsabilité et de solidarité*, PRS) implemented progressively in 2015–16 provides for a 1.8 percentage point reduction in employers' social security contributions for wage earners up to 3.5 times the minimum wage. These measures will reduce the labor tax burden by up to 1½ percent of GDP between 2013 and 2017. They will top up the *Fillon* reductions of social security contributions paid by employers (*allègements généraux des cotisations sociales patronales*) for workers paid up to 1.6 minimum wage. As a result, the labor tax wedge on low wage earners—measured for those earning just half of the average wage—came down to 31½ percent in 2014, which was below that of many other EU and OECD countries. It will come down further as the cuts are fully phased in by 2017. Overall, the budget cost of the labor tax reductions will come to more than 1½ percent of GDP. In addition, in early 2016 President introduced a new temporary subsidy of €500 per quarter to support hiring low-paid workers in small and medium companies, which would subtract from the effective tax burden on labor.



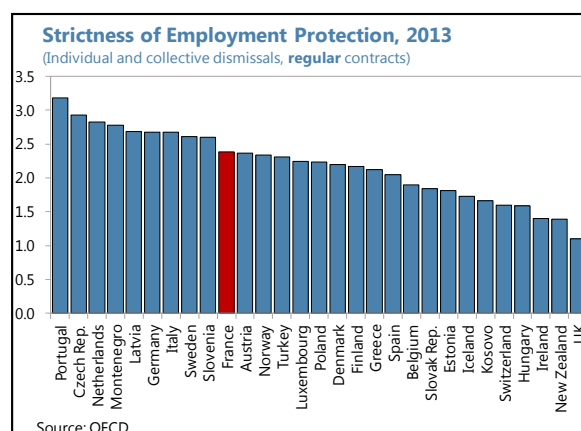
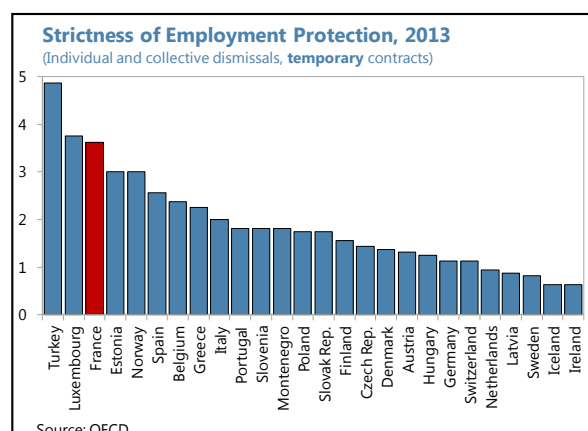
20. Further reduction in the labor tax wedge would entail difficult trade-offs. Benefits may be limited as labor taxes for lower wage earners have already been cut significantly, and tax wedge reductions for middle and higher wage earners may not have a strong impact on unemployment since labor supply at this wage level is likely to be inelastic.¹³ Conversely, costs could be considerable. Even as labor taxes in France are overall still higher than in most EU countries, their share in total taxation is close to the EU average. Put differently, the *relative* tax on labor is not out of line with peer countries, and its level primarily reflects France's high government spending, including on the social programs financed by the social security contributions that constitute the labor tax wedge. As France is working on reducing its budget deficit in the context of the EC excessive deficit procedure, it has very limited fiscal space for discretionary tax cuts. Thus, any further reduction in the labor tax burden would require either offsetting revenue measures or expenditure cuts, which might prove difficult to identify in the short term.



Employment Protection

21. Available indicators suggest that the employment protection in France is stronger than in many other EU countries, particularly for temporary contracts. According to the OECD composite measures, strictness of employment protection in France is somewhat above the EU average for regular contracts (CDI) and is much higher for temporary contracts (CDD). However, the flexibility of short-term employment is higher in the industries that can use a special type of short-term contract (*contrat à durée déterminée d'usage*) which comes with less regulatory requirements (Dares Eclairages, 2016).

¹³ For a competitive labor market with inelastic labor supply, a tax on labor is borne by workers through a divergence between the real production wage and the real consumption wage (Dinsey, 2000). The literature suggests that in France and other OECD countries, labor supply elasticity of full-time men in response to changes in the net wage is close to zero (e.g., Pencavel, 1986). In this situation, the positive impact of the labor tax reduction on employment could work through stimulating activity rates among women and part-time workers.



22. In the OECD countries, tighter employment protection is associated with lower employment and higher share of precarious short-term contracts, particularly among the youth. While safeguarding the interests of current employees (“insiders”), tight employment regulations often makes it more difficult for “outsiders”—young people entering the labor market and those currently unemployed—to find a job.

23. Cumbersome regulations and procedures enabling laid-off workers to contest their dismissals in labor tribunals entail costly and uncertain outcomes for companies. According to OECD, average compensation awarded by French labor arbitration tribunals (*prud’hommes*) in a typical case of unfair dismissal of an employee with 20 years’ tenure amounts to 16 months of salary (Table 2). This is higher than in most countries in Europe, though still lower than in neighboring Germany and Italy. What sets the French system apart is a particularly long time after dismissal when the employee can appeal the decision at a labor tribunal—2 years in France compared to between 20 days and 1 year in peer countries, which entails a particularly long period of uncertainty for French companies.

Table 2. Selected Indicators of Employment Protection, 2013

	Length of trial period when regular contracts are not fully covered by employment protection provisions (months)	Compensation following unfair dismissal (typical for 20 years’ tenure) (months of salary)	Maximum time period after dismissal up to which an unfair dismissal claim can be made
Belgium	4.75	4.55	1 year
France	3.75	16	2 years 1/
Germany	6	18	3 weeks
Italy	3 to 6	21	60 days
Netherlands	2	7	6 months
Spain	2 to 6	12	20 working days
United Kingdom	n/a	5.5	3 months

Source: OECD, detailed information on employment protection by country.

1/ In France, the time period is limited to 2 years for most cases, but is extended to 5 years for specific cases involving discrimination and moral harassment.

24. Reducing judicial uncertainty around dismissals should increase firms' incentives for hiring on open-ended contracts as long as the recovery continues. According to the existing literature and recent IMF research, reforms easing dismissal regulations, on average, have little effects on employment and other macroeconomic variables (IMF April 2016 WEO, Chapter 3). However they have a sizable positive impact on output and employment when economic conditions are stronger, whereas the impact can become contractionary during periods of slack. Current trends in the French economy are becoming generally more supportive of the reform efforts, with real GDP growth now around 1½ percent, and employment beginning to increase as private sector hiring now generally exceeds dismissals, suggesting that the timing is generally appropriate for such reforms, although consideration of social implications remains important.

25. Over the last 12 months, the government has advanced a number of reforms addressing rigidities of dismissal procedures. The *Macron* law adopted in August 2015 simplified and shortened procedures for consideration of individual cases in the labor tribunals. It also set indicative limits on the compensations that could be awarded by the labor tribunals depending on the number of years that the worker was employed by the company.¹⁴ The *El Khomri* law, currently in parliament, would clarify that companies experiencing operational losses related to cash flow, turnover, and order volume for 1 to 4 quarters (depending on the company size) have legitimate economic reason for dismissing staff.

26. The *El Khomri* law would also simplify dismissal procedures for workers who refuse to participate in collective agreements, with a view to protecting employment in loss-making companies. Since 2013, companies experiencing losses have the option to negotiate a temporary collective agreement with their employees reducing their remuneration or extending working hours in exchange for commitment to not dismiss anybody for up to 2 years. However, these employment protection agreements (*accord de maintien de l'emploi*) have seen very limited use (with less than 15 of them in the three years since their introduction), in part due to multiple restrictions imposed on both workers and the company management and difficulty of handling workers who refused to participate in the agreements (for details, see Barthélémy and Cette, 2015A). To promote their use, the *Macron* law extended their maximum time from 2 to 5 years and simplified some procedures. The *El Khomri* law would allow companies to more securely dismiss employees who refused to participate in the agreement approved by the majority of staff. More generally, it extends the scope of such agreements to cases when companies expand into new products and markets (*accord offensif*), with the condition that the company does not cut the monthly salaries of employees.

27. These reforms should increase labor market flexibility, reduce duality, and have moderate short-term impact on unemployment. The most direct measurable impact of the *Macron* law on job creation was through the product market reforms included in it. The government estimates that liberalization of bus routes by the *Macron* law created 1,300 new jobs in the sector in the first six months after enactment, while extension of working hours for commercial centers has created hundreds of new jobs, and, overall, the law would create up to 15,000 new jobs by 2020.

¹⁴ The decree containing these provisions is yet to be published at the time of writing.

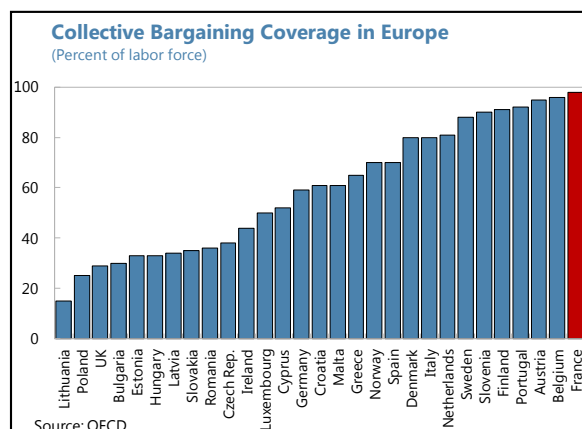
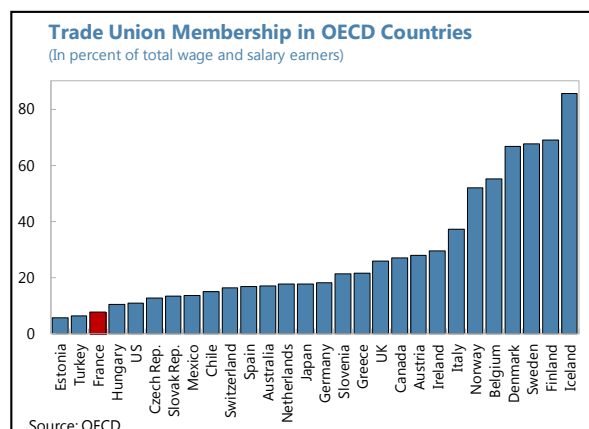
Early simulations of the *El Khomri* law's impact on employment conducted using *Worksim* model suggest that it will have little impact on overall unemployment, but would lower youth unemployment and encourage more permanent hiring (CDI contracts) as opposed to short-term hiring on CDD (Kant and Ballot, 2016). According to an assessment by *Coe-Rexecode* think-tank, simplification of dismissal procedures would increase hiring on open-ended contracts by about 300,000 per year, but with a proportional reduction in short-term recruitment.¹⁵ Overall, all measures in the *El Khomri* law—most notably, those pertaining to collective agreements and company-level bargaining (see below)—would help create only 50,000 new jobs (Jessua and Tychey, 2016), which could reduce the unemployment rate by 0.14 percentage points. These estimates are broadly consistent with the literature (see IMF April 2016 WEO, Chapter 3).

Collective Bargaining

28. Since the global financial crisis, there has been a renewed interest in the macroeconomic performance of collective bargaining systems. Much of the early policy debate focused on the degree of centralization of wage bargaining. The prevailing view was that highly centralized systems (which provide macro flexibility by inducing unions and firms to internalize the effects of wage claims on economy-wide employment) and decentralized systems (by providing wage flexibility at the firm level) would be preferable to sector-level bargaining (Calmfors and Driffill, 1988). However, recent studies suggest that results depend, to large extent, on flexibility at the firm level, the reach of sector-level agreements, and the effectiveness of coordination (e.g., Blanchard et al., 2014).

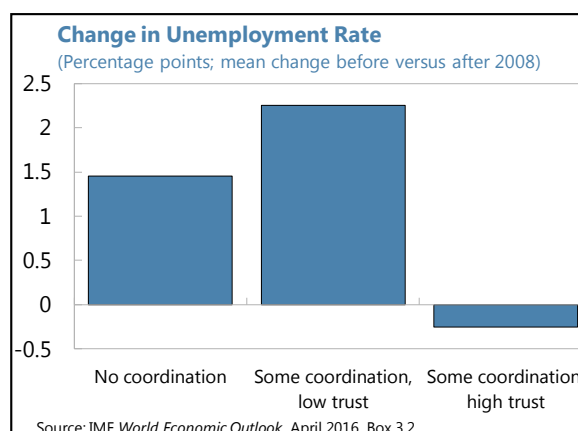
29. The crisis experience points to potential benefits of augmenting sector-level bargaining systems with flexibility at the firm level to accommodate temporary shocks. For example, the widespread use of hardship and opening clauses, which allow firms to set less favorable wages and working conditions than those in the applicable sector-level agreement if certain conditions are met, is often seen as one of the factors behind the resilience of the German labor market during the global financial crisis (Dustmann et al., 2014). By contrast, countries such as Portugal and Spain entered the crisis with bargaining systems that continued to rely on strict application of the “favorability principle,” which says that working conditions can be no less favorable to workers than those specified in the sector-level agreement. Since the crisis, both countries have introduced reforms to provide more flexibility to firms (IMF April 2016 WEO, Box 3.2).

¹⁵ Another way to resolve the duality of permanent and temporary employment in France might be to replace CDI and CDD with a new labor contract. According to its proponents, a so-called *contrat unique* would combine the flexibility of short-term contract with the security of permanent employment (Blanchard and Tirole, 2003; Camdessus, 2004; Cahuc and Kramarz, 2005; Tirole, 2016). The basic idea is to make all new recruitment open ended while simplifying dismissals and limiting the severance pay. However, by effectively eliminating CDDs, there is a risk that France's labor market could become less flexible and that hiring might initially decline, unless deeper reforms around labor protection and dismissals are undertaken at the same time (Barthélémy and Cette, 2015B).



30. For collective bargaining at the sector level, as in France, coordination among bargaining units matters a lot. The effectiveness of such coordination depends on the quality of industrial relations and the degree of trust among the social partners (Blanchard et al., 2014). IMF research suggests that France can be classified among the countries with “low trust” and “some coordination”, which entails poor unemployment outcome (IMF April 2016 WEO, Chapter 3, Box 3.2).

31. In France, trade unions play a leading role in collective negotiations, even though membership is low. Trade union members account for only about 11 percent of employees (one of the lowest rate among the OECD countries), down from a high of around 30 percent in the 1950s. The unionization rate is even lower in the private sector (less than 9 percent), where it is particularly low in the enterprises with less than 50 employees (5 percent) (Dares Analyses, 2016). However, trade unions play a leading role in negotiating national and industry-wide labor agreements that become binding for all companies (making France the leading country in Europe by the coverage of collective agreements), as well as in company-level collective negotiations. They also take the lead in re-negotiating the country’s unemployment benefits and managing social protection schemes and training programs. The trade unions get their mandate for negotiating on behalf of employees through regular elections. In the last such elections in 2013, about 43 percent of the registered employees cast their votes. Five leading confederations of trade unions—CGT, CFDT, CGT-FO, CFE-CGC, and CFTC—cleared the minimum 8 percent threshold of the votes and gained mandates to represent employees in the labor negotiations with the government and employers (*Haut Conseil du Dialogue Social*, 2013).



32. The existing law effectively requires that company-level agreements provide same or better conditions to workers as set in the branch-level agreements. Strictly speaking, the 2004 *Fillon* law allows company-level agreements to deviate from branch agreements, which is, to

establish less favorable terms for the workers, unless the branch agreement explicitly prohibits such deviation. However, the companies cannot deviate from the branch agreements in the four most important dimensions, which are minimum wage, job classification, supplementary social protection, and multi-company and cross-sector vocational training funds. In practice, companies have made little use of the allowed flexibility, in part because of its limited scope and cumbersome procedures for company-level labor negotiations.

33. The *El Khomri* law would extend the scope for firm-level collective agreements. Most notably, it would make it easier for companies to extend the overtime through an agreement with their employees while reducing the overtime premium down (from the currently prevailing 25-50 percent) over the normal pay (the legally binding 10 percent would remain) and, if necessary, deviating from the branch agreement in that matter. As discussed above, the *El Khomri* law allowed companies to more securely dismiss employees who refuse to participate in the employment protection agreements approved by the majority of staff, and extended the scope of such agreements to companies that target aggressive expansion into new products and markets. However, the companies still cannot deviate from sector-level agreements for job classification, or negotiate with their staff a lower minimum pay than that set at the branch level.

34. Moreover, the *El Khomri* law would reduce the options for unions to block collective agreements in companies. According to the existing law, a collective agreement could be signed by unions representing at least 30 percent of employees. However, it can then be blocked by other unions who together represent more than 50 percent of staff. Now the *El Khomri* law would provide that in such case, the trade unions that signed the agreement can call for company staff referendum on it, which can validate the agreement by majority vote even if some syndicates oppose it. In this respect, the *El Khomri* law builds upon the *Rebsamen* law adopted in August 2015 that streamlined the conditions for social dialogue in companies. However, concerns remain about the quality of social dialogue in small companies with no trade union representation.

Unemployment Benefits

35. While providing an essential social safety net, overly generous unemployment benefits can have unintended consequences, in particular by creating inactivity traps. By insuring workers against the risk of job loss, unemployment benefits play a stabilizing role over the business cycle and allow for a smoother relocation of labor across the economy, as job-seekers can devote more time to finding a job that matches their skills and expectations. At the same time, generous benefits can undermine the incentives to return into employment by reducing the gap between labor and non-labor income, with negative effects on unemployment duration and total unemployment (EU Unemployment Benefits, 2015; Nickell 1997).

36. Income replacement rates of the French unemployment benefits are comparable to those of other OECD countries. The integral measure of the net income replacement rate (NRR) of unemployment benefits entitlement (including social assistance and cash household benefits) stood at about 57 percent for France in 2013. This is broadly in line with its level in other OECD countries with the same GDP per capita. The same applies for NRR of long-term unemployed (over 60 months

of unemployment) and for initial unemployment benefits (Table 3). These comparisons indicate that actual payouts to unemployed in France are commensurate with their level in the peer countries. However, a notable difference to other systems is that unemployment benefits in France are capped at over €7,000 per month (Unédic, 2015), which is the highest explicitly set cap in Europe. This is in part justified by the fact that France's unemployment benefits are designed more as insurance scheme than as social protection mechanism, which makes them less targeted to those in need even if it entails some distributional effects.

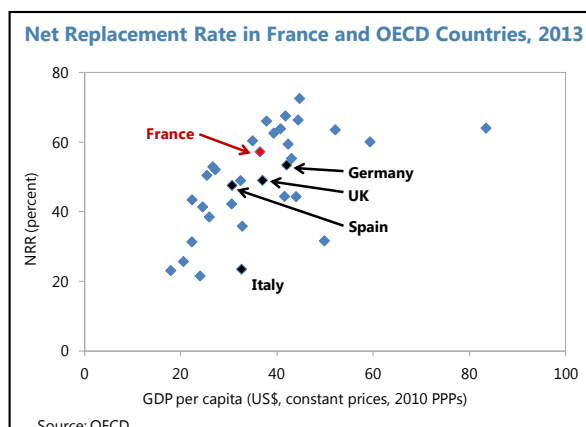


Table 3. Selected Features of Unemployment Benefits in France and Neighboring Countries

	Minimum qualification period (months)	Maximum duration of benefits 1/ (months)	Contributing to benefits periods (ratio)	Benefit cap (euro/month)	Net replacement ratio 2/	
					Initial (percent)	Over 60 months of unemployment (percent)
Belgium	12	unlimited 3/	n/a	1,603	69.5	63.8
France	4	24	1:1	7,134	72.1	52.2
Germany	6	12	2:1	2,483	72.5	51.3
Italy	3	18	2:1	1,300	68.6	9.3
Netherlands	6	38	1:1	3,212	72.1	49.4
Spain	12	24	3:1	1,397	65.7	38.2
United Kingdom	6	6	n/a	380	46.1	46.4

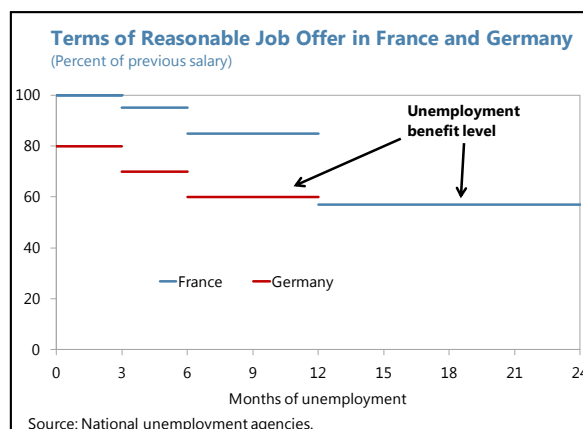
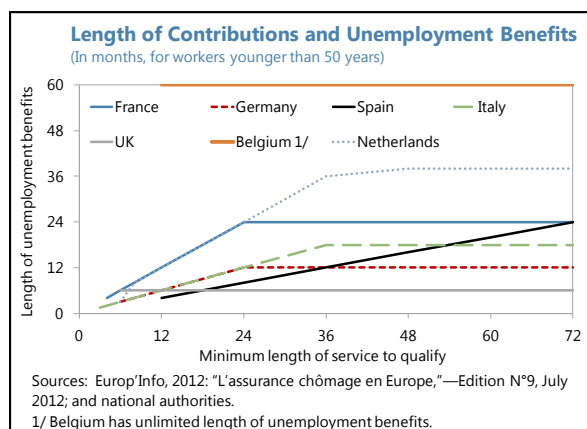
Sources: OECD; EC; Unédic; National authorities; Cour des comptes; and IMF staff estimates.

1/ For those younger than 50 years.

2/ Simple average of the net unemployment benefit (including social assistance and cash housing

3/ Recent reforms have limited the duration of benefits for the young (under age 33) to 36 months.

37. However, France's eligibility criteria are among the laxest in Europe. A person becomes eligible for the unemployment benefits after making contributions for only 4 months, which is among the lowest thresholds in Europe and OECD. In a steep progression, the person becomes eligible for up to a maximum 24 months of unemployment benefits after contributing for the same 24 months, which is also among the fastest in Europe. The conditions are even more beneficial for seniors older than 50 years, who become eligible for up to a maximum of 36 months of benefits after contributing for the same 36 months.



38. Job search requirements and their enforcement are comparatively weak. The unemployed can reject the first suitable job offer without any penalty (the sanctions begin only with refusing the second such offer), which is unparalleled in other EU or OECD countries (Table 4). Moreover, the terms of what constitutes the "suitable job offer," including the criterion that the new wage is no less than 85–100 percent of the old one in the first year of unemployment, are more favorable to the unemployed than in neighboring Germany (Figure) and in many other countries. In addition, the requirement for the active job search was not very strictly enforced until recently. Finally, information on the available job offers is often difficult to obtain.

Table 4. Sanctions for Refusing the First Reasonable Job Offer in Selected EU Countries

Belgium	Suspension of benefits for 4-52 weeks, typically for 10-14 weeks
France	No penalty
Germany	Suspension of benefits for 3 weeks
Italy	Loss of unemployment seniority
Netherlands	Reduction of benefits by 25 percent for at least 4 months
Spain	Loss of benefits for 3 months
United Kingdom	A variable sanction of 1-26 weeks (depending on the circumstances)

Source: Venn, D. (2012).

39. The existing system, including certain specificities of the benefit formula, creates incentives for alternating between ultra-short contracts and unemployment. A person working on ultra-short (less than a month) work contracts for the minimum wage (SMIC) for 46 percent of the time and tapping unemployment insurance between them, topped up with other benefits, can make an income equal to 83 percent of someone who works full time for SMIC (Cahuc and Prost, 2015). Moreover, that person can stay on the pattern intertwining ultra short-term employment and unemployment benefits for an unlimited period of time as during his work spells he renews eligibility for the unemployment benefits. According to some estimates, the net cost of covering short-term contract employees amounts to at least €5 billion per year, which is comparable to the entire deficit of the unemployment insurance scheme. Among them, the special regime

enjoyed by the short-term contractual employees in the entertainment sector (*intermittents du spectacle*) is particularly favorable. Unemployment payments to employees of that sector counting only 3 percent of all unemployed are responsible for up to 1/4 of the system's deficit (Cour des Comptes, 2016).

40. The bi-annual renegotiation of unemployment benefits commenced in February 2016, with the objective of the reducing the deficit of the insurance system. In France, the terms of unemployment benefits are subject to regular bi-annual renegotiation between employers and trade unions. Setting the stage for the discussions, the government produced a report on the financial health of the insurance scheme (Government report, 2015). Alongside, the unemployment agency Unédic produced a report summarizing key features of the system and comparing them with other EU countries (Unédic, 2016). In addition, the government's audit chamber *Cour des comptes* analyzed Unédic's financial situation and outlined a number of reform options for improving it (Cour des Comptes, 2016). The negotiations are meant to deliver solutions for improving efficiency of the unemployment insurance scheme and reducing its deficit, which amounted to 0.2 percent of GDP in 2015 (and, cumulative with deficits of previous years, has contributed to Unédic's debt of 1.2 percent of GDP at end-2015). As the negotiations have not been completed by mid-2016, the government has the option of extending the previous agreement (convention 2014).

41. The main reform options outlined so far concern access criteria, degressivity of benefits, and special regimes available to contractual employees. Pointing at the direction of possible reforms, *Cour des Comptes* quantified savings from raising the benefits eligibility threshold from 4 to 6 months and abolishing or modifying seniors' eligibility for extended benefits. It also considered using coefficient of 0.9 instead of the current principle "one day of contributions qualifies for one day of benefits" (Table 5). Another option under discussion is to re-introduce degressivity, a progressive reduction in benefits for long-term unemployed. In addition, there is a growing perception that the existing regime is too favorable for contractual employees who tap unemployment benefits between short-term contracts. One way to balance the benefits accorded to contractual employees might be to increase their actual contributions to the unemployment insurance system, or increase contributions for companies that make most use of short-term contracts. Yet another way is to change the calculation of benefits paid to the short-term employees so as to re-align it with their actual working time and paid contributions.

Table 5. Selected Expenditure Savings Measures Quantified by the *Cour des Comptes*

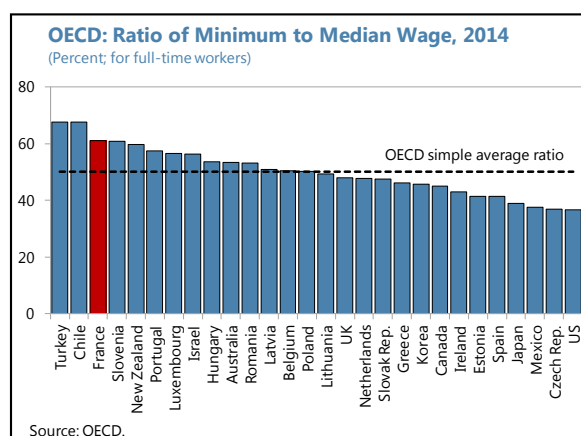
Measure	Annual savings, € billion
Raise the benefits' eligibility threshold from 4 to 6 months	1.8
Curtail the maximum length of benefits (now at 24 months)	...
Abolish the extended benefits (up to 36 months) for seniors	1.0
Raise the age for seniors' eligibility for extended benefits (up to 36 months) from 50 to 55 years	0.45
Use the coefficient of 0.9 instead of the principle "one day of contributions qualifies for one day of benefits"	1.2
Cut the benefit replacement rate by 1 percentage point	0.422

Source: *Cour des comptes*.

Minimum Wage

42. Combined with in-work benefits and measures to reduce the non-wage cost of low-paid jobs, a statutory minimum wage set at an appropriate level can raise labor force participation without adversely affecting demand. According to the literature, there is some evidence that maintaining the purchasing power of minimum wages at around 30 to 40 per cent of median wages sustains demand and reduces poverty and income inequalities. However, statutory wage floors systematically set at levels significantly above that range entail the risk that these benefits would be more than offset by lost job opportunities, especially for youth and low-skilled workers. Allowing the minimum wage to slip significantly below that range risks exacerbating poverty and weakening aggregate demand (ILO, OECD, IMF and the World Bank, 2012; Vaughan-Whitehead, 2010).

43. The ratio of minimum wage to the median wage in France is among the highest in Europe and OECD, which weighs negatively on employment. The minimum wage (*Salaire minimum interprofessionnel de croissance*, SMIC) in France is currently about 60 percent of the median wage, well above the average for the OECD countries. The relatively high SMIC, which was not reduced as the workweek was shortened to 35 hours in 2000, may well have contributed to the relatively elevated unemployment among young and low-skilled workers in France. According to one estimate, 1 percent increase in SMIC would lead to 1.5 percent loss in



employment remunerated at the minimum wage in France in the 1990s (Kramarz and Philippon, 2001).

44. Some countries use exemptions from the minimum wage to limit potential adverse effects on employment for certain categories of workers. Such exemptions could be provided for young workers entering the labor market, for low-skilled workers, and for long-term unemployed. In France, a lower minimum wage is set for the young workers under 18 with less than 6 months of professional experience, with 20 percent reduced SMIC for those under 16 and 10 percent for those younger than 17. Also, lower minimum remuneration is set for apprentices and for those enrolled in the professional learning contracts (*contrat de professionnalisation*). Still, several neighboring EU countries have wider exemptions from the minimum wage for the youth and long-term unemployed than those provided in France.

Table 6. Minimum Wage Exemptions in Selected EU Countries

Belgium	Lower minimum wage rate for those below the age of 21 years. Lower rates also for those with seniority of less than 6 and 12 months.
France	Minimum wage reduced by 10-20 percent for the young workers under 18 with less than 6 months of professional experience. Also, lower minimum wage for apprentices and for those in <i>contrat de professionnalisation</i>.
Germany	Those under the age of 18 years, apprentices, interns, and long-term unemployed during their first 6 months of reemployment are exempt.
Netherlands	Age-dependent fraction of standard minimum wage for those under the age of 23 years. Lowering the threshold to 21 years is under discussion.
U.K.	Age-dependent fraction of standard minimum wage for those under the age of 25 years.

Source: IMF Cross-Country Report on Minimum Wages, 2016.

45. The minimum wage in France is set by the government according to a formula, with input from an expert group and in consultation with social partners. The formula for the minimum wage links it to the rate of past inflation (consumer price index based on the representative consumption basket of the poorest 20 percent of households) and half an increase in the average real wage of factory workers and employees in economy (*salaire horaire des ouvriers et employés*, SHBOE). The independent expert group prepares an annual report that considers the parameters of the minimum wage increase according to the formula and recommends whether the economic circumstances warrant application of the additional hike (*coup de pouce*). The formula for the minimum wage increase has no link to the unemployment rate, which contributes to wage stickiness, particularly in periods of weak labor market conditions. Specifically, industry and firm-level data confirm that the national minimum wage plays a key role in the wage bargaining calendar. It modifies the patterns of wage changes over the year, and the higher the percentage of minimum-wage workers, the less frequently the firms negotiate (Avouyi-Dovi et al., 2011).

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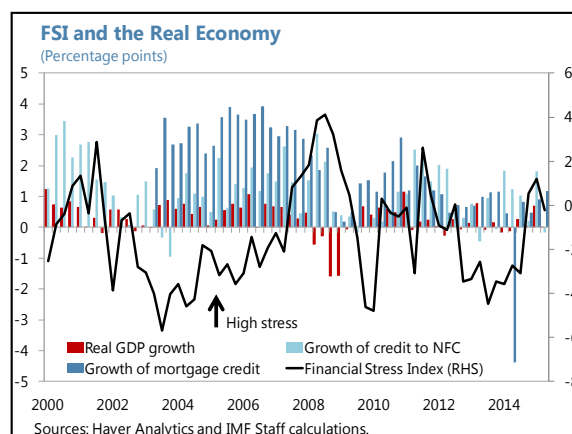
SELECTED MACROFINANCIAL ISSUES¹

A. How Do Financial Conditions Affect Economic Activity?²

France's economy responds to financial stress episodes less than some other countries—business investment, private consumption, and particularly housing investment seem less affected by financial stress than in the U.K. and U.S., but more so than in Italy. However, linkages seem to have become stronger since the crisis, particularly for business investment and exports.

1. Financial conditions have important effects on macroeconomic performance. To better understand how these effects transmit through the economy, this note considers how financial stress affects credit aggregates and various components of the real economy. To compare how these effects differ across countries, we rely on the Financial Stress Index of the 2008 World Economic Outlook.³ Financial stress is defined as a period when the financial system of a country is under strain and its financial intermediation capacity is impaired. The index incorporates information on seven variables across three groupings: (i) for the *banking sector*, including the banking sector's stock price correlation with common market movements (banking sector beta), its cost of funds (the TED spread) and the yield curve (inverted term spread for government bonds); (ii) for *securities markets*, the cost of funds for corporations (corporate bond spread), stock market returns, and stock market volatility; and (iii) *foreign exchange market volatility*.⁴

2. Financial stress in France is (unevenly) related to credit volumes and GDP growth. During the pre-crisis years, eased financial conditions were associated with strong growth of mortgage loans, but also of loans to non-financial corporations, while real GDP growth was accelerating. As financial stress became intense in 2008–2009, credit growth and GDP growth sharply declined, while, since then, the easing of financial stress in 2009–10 was associated with a rebound of mortgage credit, and since 2012, a more moderate and balanced increase in mortgage credit and in credit to non-financial corporations, while the association between financial easing and GDP growth has been more muted.



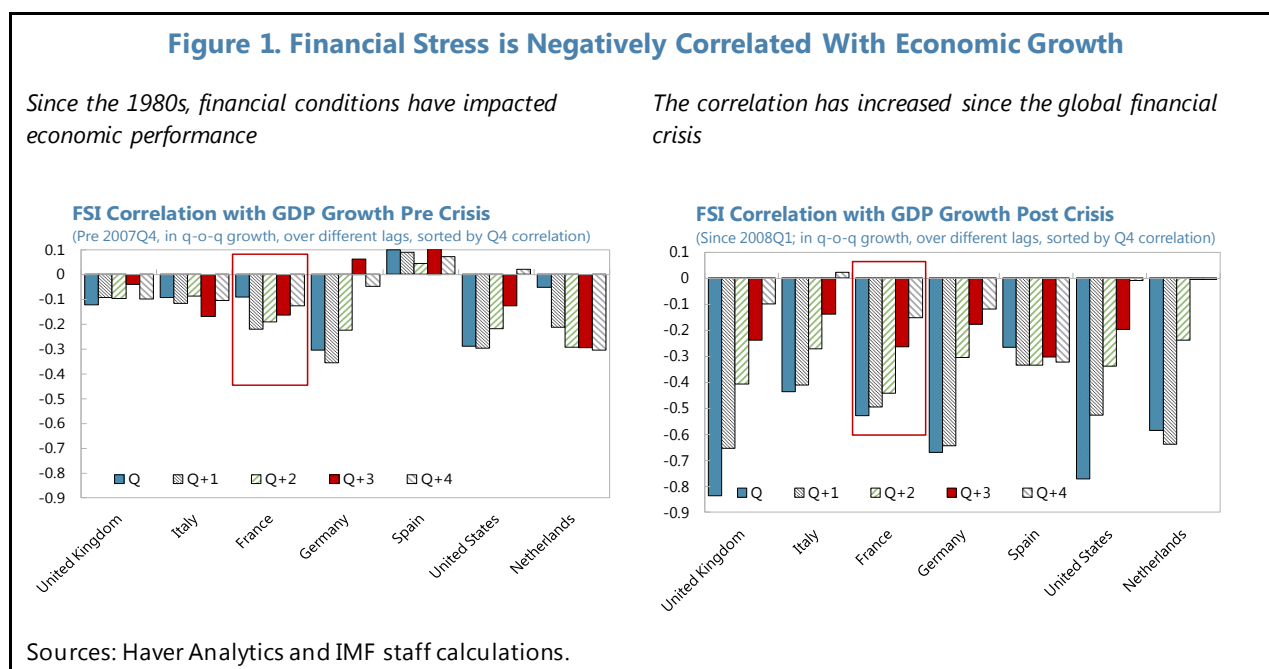
¹ Comments from the French authorities are gratefully acknowledged.

² Prepared by Piyabha Kongsamut, Thierry Tresselt (EUR), with input from Johannes Eugster (SPR).

³ Cardarelli, Roberto, Selim Elekdag, and Subir Lall, 2008, "Financial Stress, Downturns, and Recoveries," Chapter 4 of the October 2008 WEO.

⁴ Each variable is standardized by demeaning and divided by its standard deviation. The overall index is a composite measure of the subindices and captures market movements relative to averages or trends.

3. France's economy responds to financial stress episodes less than some other countries, although the correlation has increased somewhat since the crisis (Figure 1). Between the 1980s and 2015, the contemporaneous correlation between financial conditions and real GDP growth was large (about -0.5) for the Netherlands, the U.K., Germany and the U.S.; and small for Italy, France and Spain.⁵ Since 2008, this correlation has risen sharply for all countries, including for France where they have more than doubled, reaching levels that are closer to those in peer countries.⁶



4. The correlations suggest that financial stress was transmitted in France mainly through the decline in private investment and exports, while private consumption seemed less immediately impacted (Figure 2). This is in contrast to the U.K. and the U.S., where private consumption experienced a relatively large contemporaneous decline in periods of financial stress; this could be because a larger share of households' wealth is held in stocks or debt securities in these countries. Public consumption reacted to financial stress in a counter-cyclical manner in France, but somewhat less than in Spain, the U.S. or the Netherlands.

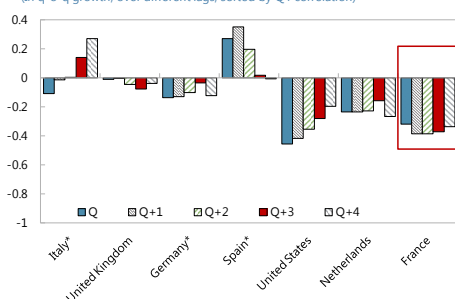
⁵ Specifically, we report the correlation of FSI in one period with real GDP growth in Q, Q+1, Q+2, Q+3 and Q+4.

⁶ This finding is broadly unchanged if we compute the correlations starting in 2009Q1.

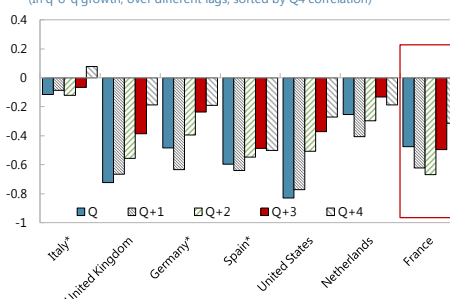
Figure 2. And More so Since the Crisis

The impact of financial stress on economic performance is felt through private investment ...

FSI Corr. with Private Investment Growth Pre Crisis
(ln q-o-q growth, over different lags, sorted by Q4 correlation)

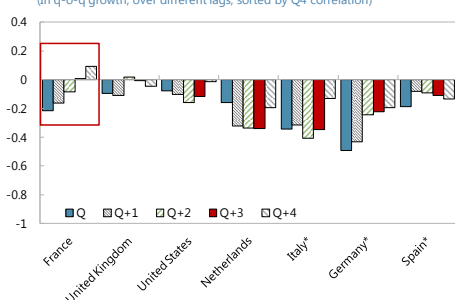


FSI Corr. with Private Investment Growth Post Crisis
(ln q-o-q growth, over different lags, sorted by Q4 correlation)

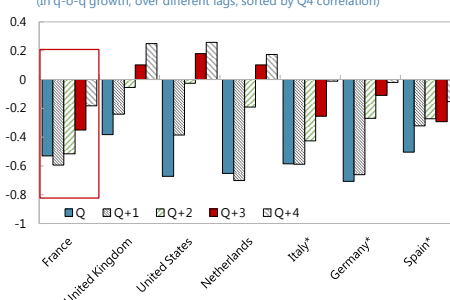


... and through exports, with a stronger correlation since the crisis

FSI Correlation with Export Growth Pre Crisis
(ln q-o-q growth, over different lags, sorted by Q4 correlation)

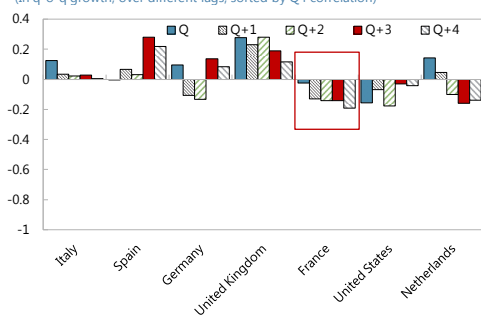


FSI Correlation with Export Growth Post Crisis
(ln q-o-q growth, over different lags, sorted by Q4 correlation)

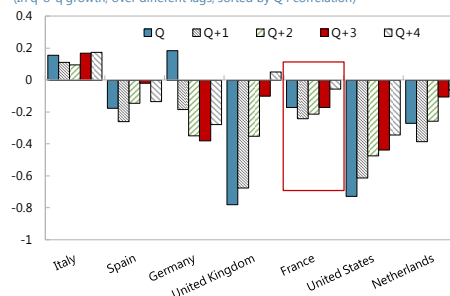


... but much less through private consumption for France, especially compared to U.S. and U.K. since the crisis.

FSI Corr. with Private Consumption Growth Pre Crisis
(ln q-o-q growth, over different lags, sorted by Q4 correlation)

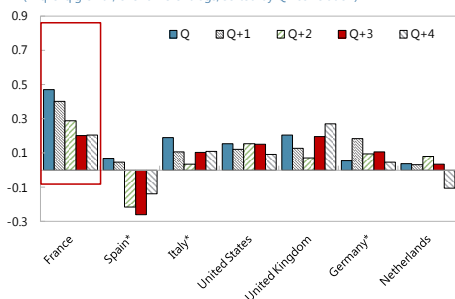


FSI Corr. with Private Consumption Growth Post Crisis
(ln q-o-q growth, over different lags, sorted by Q4 correlation)

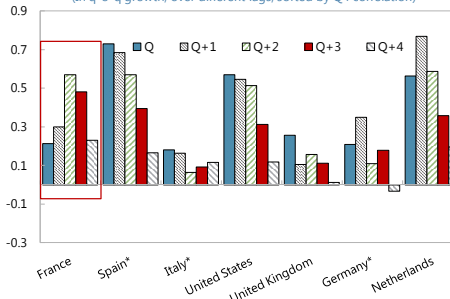


Fiscal policy has played a countercyclical role, particularly in public consumption.

FSI Corr. with Public Consumption Growth Pre Crisis
(ln q-o-q growth, over different lags, sorted by Q4 correlation)



FSI Corr. with Public Consumption Growth Post Crisis
(ln q-o-q growth, over different lags, sorted by Q4 correlation)



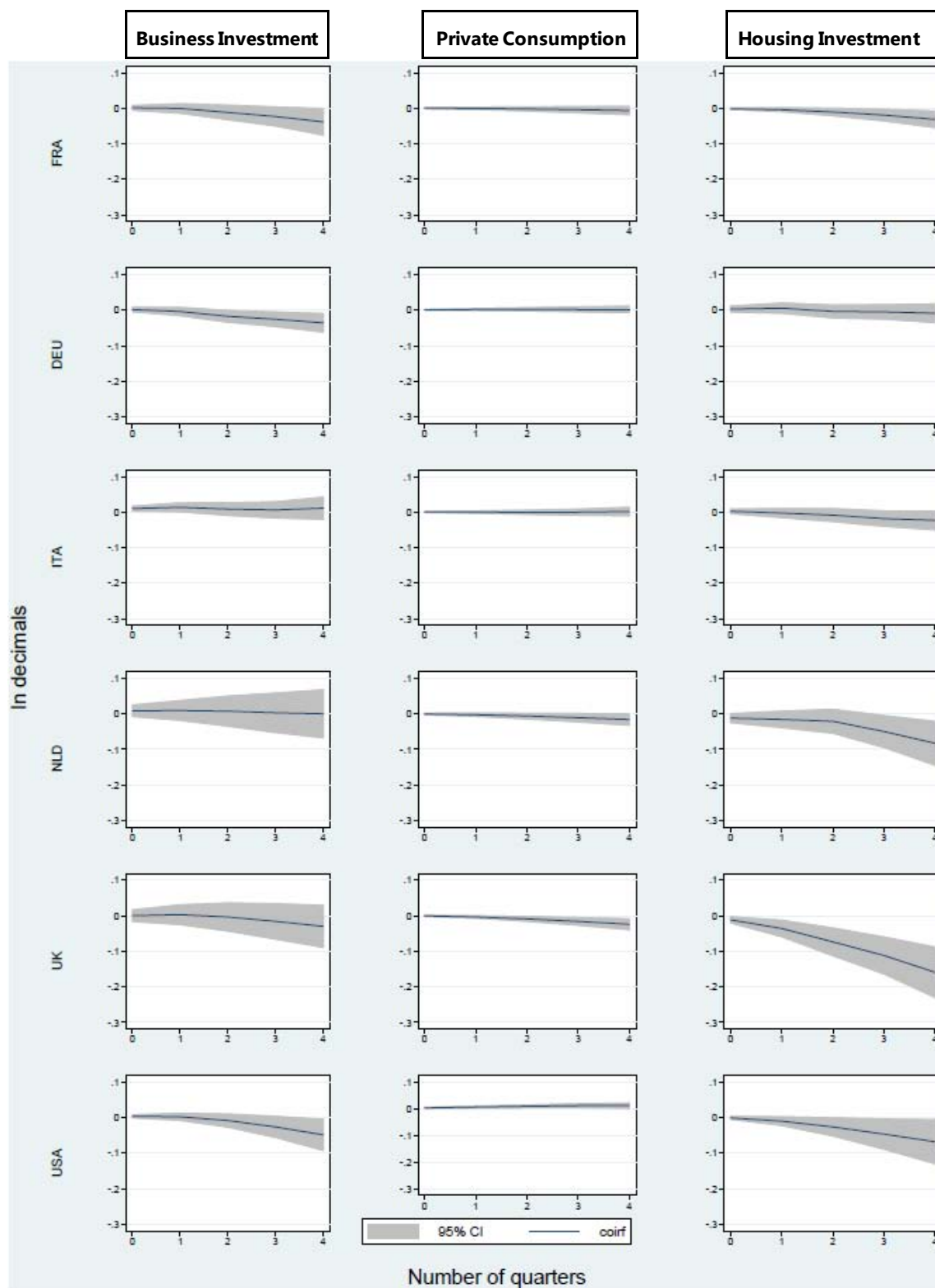
Sources: Haver Analytics and IMF staff calculations.

5. These correlations and magnitudes are broadly confirmed by econometric analysis. We perform basic vector auto-regressions (VARs) that include the financial stress index, components of credit, and the corresponding real variable for France and six comparator countries.⁷ The following country-by-country three-variable VARs were run with financial stress and: corporate credit and business investment; consumer credit and private consumption; and mortgage credit and residential investment, with the ordering of variables in the VAR from financial stress to credit to real variables. The impulse response functions suggest the following reactions to a one standard deviation shock to an innovation in the financial stress index:

- The reaction of business investment in France is similar in magnitude to that of Germany and UK. In France, there is a decline of 0.2 percent in business investment in the first quarter after the shock, and a cumulative decline of 4 percent four quarters later. In contrast, Spain has the largest response with a 1 percent decline in business investment one quarter after the shock and a cumulative 7 percent decline in business investment four quarters later. Spain and U.S. also have stronger responses of business investment than those seen in France, while Italy and Netherlands are quite a bit smaller. The response of credit to non financial corporations in France is small and confidence bands wide. For other countries, sometimes the result was counterintuitive, with credit *increasing* with financial stress, as seen in Italy and Germany. A possible explanation is that corporations could instead go to banks for credit when financial markets were stressed, including if the stress came from international sources and domestic credit conditions were not as strongly affected.
- The impulse response of private consumption to an innovation in financial stress is smaller than that seen for business investment in France, with a cumulative decline of less than one percent after four quarters. Germany, Italy and Spain show similarly muted responses, while Netherlands and U.K. in particular have stronger responses. In contrast to what was seen in the correlations above, the response in the U.S. was more muted, possibly because the analysis encompassed the entire period (pre and post crisis).
- The size of the response of housing investment in France is somewhat smaller than that for business investment. Those for Netherlands, UK, and US are particularly strong, likely reflecting the important role of housing in the crisis, while that for Spain is counter-intuitively positive.

⁷ These include Germany, Italy, Netherlands, Spain, United Kingdom, and United States. The regressions were run on quarterly data for the entire sample period, beginning in 1980, with data availability varying by country but all encompassing the global financial crisis period. Stationarity tests were conducted and have been taken into account; the macro aggregates (real and credit variables) were nonstationary.

Figure 3. Cumulative Orthogonalized Impulse Responses of Real Variables to FSI Shock



Sources: IMF staff estimates.

- Granger causality tests suggest that increases in financial stress precedes downturns.⁸ There is evidence of two-way feedback effects between financial stress and business investment growth in France. This is not the case with credit aggregates—there is no Granger causality between FSI and each of corporate, consumer, or mortgage credit growth in either direction. However, Granger causality cannot be rejected in France from all three real variables to their associated credit aggregates.

Table 1. Granger Causality Tests (GC)

	FRA	DEU	ITA	ESP	NLD	UK	US
FSI with differences in real variables							
Business investment GC FSI	*		***				
FSI GC business investment	***	***		**		**	***
Private consumption GC FSI			*	***		**	
FSI GC private consumption	***				**	***	
Housing investment GC FSI			***	**			**
FSI GC housing investment	***				**	**	**
FSI with differences in real credit variables							
Corporate credit GC FSI			***				
FSI GC Corporate credit		*			**		***
Consumer credit GC FSI			*			**	
FSI GC consumer credit							
Mortgage credit GC FSI			***			***	
FSI GC mortgage credit			*		**	***	
Differences in real and real credit variables							
Business investment GC corporate credit	**			**	**		
Corporate credit GC business investment			*	***	**		
Private consumption GC consumer credit	***					**	
Consumer credit GC private consumption	***		***			**	
Housing investment GC mortgage credit		**	**	**			
Mortgage credit GC housing investment		**				***	

*** indicates Granger causality cannot be rejected at at least the 1% level.

** indicates Granger causality cannot be rejected at at least the 5% level.

* indicates Granger causality cannot be rejected at the 10% level.

Source: IMF staff estimates.

6. Structural and institutional features could explain the more limited response of private consumption in France relative to business or housing investment. Firstly, studies have found wealth effects to be relatively weak, and the fact that house prices were relatively resilient during the global financial crisis relative to other countries may also help explain the weakness of wealth effects since the crisis.⁹ Secondly, consumer credit in France grew less than the average of the other countries considered, even pre-crisis, suggesting less reliance on this type of credit to start with. Further, policy actions taken starting from 2010 (e.g. *Loi Lagarde* of 2010, *Loi Bancaire* of 2013, and *Loi Consommation* of 2014) to prevent overborrowing by/lending to consumers have contributed to making consumer credits less sensitive to the cycle. These included more restrictive conditions on consumer credit; requiring more information to be provided to the consumer; delays before credit is disbursed; and capping renewable credits. More generally, the prevalence of fixed rates in both mortgage and business loans seem to reduce the immediate sensitivity of bank credit aggregates to developments in

⁸ Granger causality is a statistical procedure which tests for the joint significance of lagged variables of interest on a specific variable. For example, a test can be conducted whether past values of FSI are significant in a regression with current business investment on the left hand side, also controlling for lagged values of FSI at the same lag length. If the joint test is rejected, then FSI is said to “Granger-cause” business investment. Because the macro aggregates (real and credit variables) were non stationary, differences were used in the tests, while FSI was kept in levels.

⁹ See “Wealth effects on consumption plans: French households in the crisis”. Luc Arrondel, Frédérique Savignac and Kévin Tracol, 2011, and “Wealth Effects: the French case”. Valerie Chauvin and Olivier Damette, 2010. See also “France: Financial Sector Assessment Program—Technical Note on Housing Prices and Financial Stability”, June 2013, IMF Country Report No. 13/184.

financial markets, allowing the banking system to play more of a shock absorbing role than an amplifying one. This may however mean a slower transmission mechanism for monetary policy.

7. These results are suggestive, but it would be useful to try to capture financial conditions rather than financial stress per se, to understand better the linkages between financial developments and the real economy. For example, the stress index is based on financial market indicators, and currently excludes information on the housing market, as it is focused on more high-frequency events. It is also predominantly based on market indicators (e.g. equity prices and corporate bond yields), whereas continental European financial systems are more bank-centric. Better capturing financial conditions, and refining the econometric techniques to adjust for a possible break in the relationships because of the crisis, could also help shed light on whether the banking sector has become more of a shock amplifier rather than a shock absorber. These issues will be pursued as part of staff's continuing research agenda on macro-financial linkages.

B. How Exposed are France's Big Banks to Market Volatility?¹⁰

France's Global Systemically Important Banks (G-SIBs) have buttressed their balance sheets since the global financial crisis and have adapted to evolving prudential regulations.¹¹ They broadly meet all regulatory requirements, in particular the Basel III capital ratios and the Liquidity Coverage Ratio. However, they remain on average more reliant on wholesale funding and more leveraged than their global peers. Their profitability remains fragile, in line with European G-SIBs. Although on a risk-weighted basis their capitalization is strong, two French banks are among the four most leveraged G-SIBs, partly reflecting a high share of low-risk assets such as mortgages on their balance sheets. Empirical evidence suggests that G-SIBs with more wholesale funding, lower profitability, or higher leverage tend to be more affected than others by large financial shocks, but this was not observed for all French G-SIBs.

Overview of the French Global Systemically Important Banks

8. Before the global financial crisis, France's G-SIBs grew rapidly, in line with US and several European peers. Their global expansion was supported by a diversified universal banking business model with diversified earnings, a strong domestic retail base, especially for the two cooperative banks (*Crédit Agricole* Group and BPCE), and by access to wholesale funding markets. Acquisitions of smaller European banks contributed to the increase in their international assets (*Crédit Agricole* in Greece and Italy; BNP-Paribas in Italy; *Société Générale* in the Czech Republic, and Russia

¹⁰ Prepared by Thierry Tresselt (EUR).

¹¹ The analysis is based on publicly available data for BNP-Paribas, Société Générale, Groupe *Crédit Agricole* and BPCE. BPCE is dropped in analysis comparing publicly listed banks. For *Crédit Agricole*, stock price data are for *Crédit Agricole* S.A., which is the listed entity of Groupe *Crédit Agricole*. The latter also comprises local banks and regional banks.

and private banking in Luxembourg, and also retail operations in Belgium, Luxembourg and the US for BNP-Paribas).¹²

9. The French G-SIBs have diversified from traditional banking to various activities. The domestic branches of the banks traditionally offer various financial products, which, in addition to saving accounts at regulated rates, include life insurance products which benefit from tax advantages.¹³ Société Générale and BNP-Paribas are truly international, as they realize about ⅓ and 20 percent respectively of their operating income in the French retail market, while Groupe *Crédit Agricole* and BPCE have a strong domestic retail base and realize about 60 percent of their operating income in this market.¹⁴ The French big banks developed strong structured finance (including project finance and trade and commodity finance) as well as corporate investment banking activities, which were supported by reliance on wholesale funding from global markets. They have also developed strong asset management activities (Amundi, a subsidiary of *Crédit Agricole*, is the fourth largest asset manager) and private banking businesses which have further expanded in recent years while they retrenched investment banking and specialized financing activities. Société Générale and BNP-Paribas have built very strong expertise in the global equity derivative business.

10. The four banks are systemic for both France and globally. At the end of 2014, assets of these four banks accounted for 78 percent of France banking assets, about 300 percent of France's GDP. At the end of 2014, BNP-Paribas and *Société Générale* had respectively 44 percent and 30 percent of their total exposures across jurisdictions, while *Crédit Agricole* and BPCE remained more oriented on the domestic retail market with about 18 percent of their assets across jurisdictions, according to the Basel Committee indicators of systemic importance. The four banks had €11 trillion of asset under custody, and totaled €77 trillion of notional amount of OTC derivative assets. BNP-Paribas, *Société Générale*, BPCE and *Crédit Agricole* ranked respectively 8th, 16th, 18th and 20th among G-SIBs, based on 12 indicators of size, interconnectedness, substitutability, complexity and cross-jurisdictional activities (Figure 4). Their health and resilience is all the more important given how systemic they are, which could make them difficult to resolve. Given our focus on banks' preparedness for financial volatility and that these French banks compete and are systemic globally, the analysis that follows considers other banks that have been classified as G-SIBs as their comparators. This choice has the advantage that it compares banks that all are large, interconnected and systemic at the global level (Box 1).

¹² See Selected Issues Paper 2013, French Banks: Business Model and Financial Stability (by Amadou Sy).

¹³ Life insurance savings, which account for 40 percent of households' savings, are free of income tax if redeemed after 8 years.

¹⁴ For BPCE, the figure includes the operating income of Caisses d'Épargne and Banques Populaires banks.

Box 1. Sample of Comparators: G-SIBs or EU Banks?

Given the focus on banks' exposure to financial volatility and the fact that more than three quarters of France's banking sector is accounted for by four large and systemic banks, the analysis in this section compares them to the sample of banks that have been classified as G-SIBs by the Financial Stability Board (FSB) and the Basel Committee for Banking Supervision (BCBS).¹⁵ G-SIBs have in common that they operate and compete internationally, and that their business models generally place greater emphasis on trading and capital markets related activities, and rely more on capital market funding than other banks. Given their size and interlinkages, stress affecting one or several of these banks has the potential to generate global financial spillovers, and could affect the sovereign spreads in their home country.¹⁶ While G-SIBs share many characteristics, there are also differences, including their precise business models. For example, several G-SIBs such as *Crédit Agricole* and BPCE are universal banks with a high share of domestic retail banking activities. In contrast, banks such as Deutsche Bank, Goldman Sachs or Morgan Stanley have important investment banking activities and provide relatively less direct financing to the domestic economy.

An alternative comparator set would be for example the set of larger EU banks included in the European Banking Authority (EBA) transparency exercises. This would be particularly relevant for a comparative analysis of domestic credit and macro-financial linkages in the EU. But business models are heterogeneous in this sample as well: it contains G-SIBs, specialized banks, traditional retail banks mostly funded from deposits, and some holding companies of banks. Regulatory requirements differ in the EU sample, including because European G-SIBs are subject to an additional capital surcharge and the Total Loss Absorbing Capacity (TLAC) requirement by the Basel Committee.

By comparing France's large banks to other G-SIBs rather than the EBA sample, their position relative to the sample average in terms of performance and balance sheets is affected. For example, within the sample of EU banks, French banks have relatively strong capital adequacy ratios (including fully loaded CET1 ratios), above average returns on regulatory capital, below average non-performing exposures, relatively high coverage ratios, and little forbearance. By contrast, the leverage ratio of French banks is on the high side, as is the case when comparing to the G-SIB sample.¹⁷ Profitability is about average compared to the EBA sample but relatively low compared to non-EU G-SIBs, especially when considering returns on assets. An important difference between the samples is that US G-SIBs do not keep all mortgage credits on their balance sheets and several of them have a high share of investment banking activities, which tends to rise fee and commission income, while limiting leverage. It should also be noted that French banks performed well in the Single Supervisory Mechanism (SSM) comprehensive assessment of euro area banks in 2014, which showed that the risk weights of French banks were well adapted to their assets.

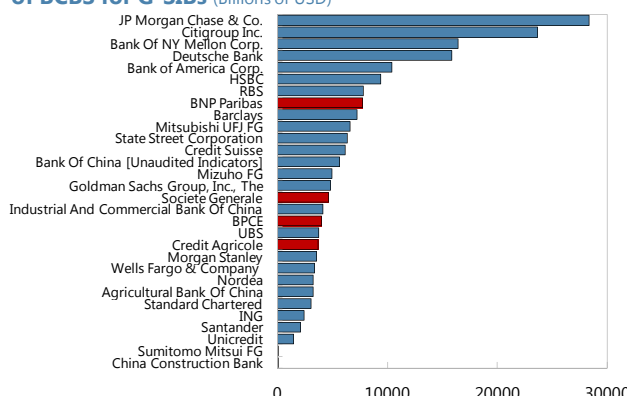
¹⁵ Basel Committee on Banking Supervision, 2011, "Global systemically important banks: assessment methodology", Basel.

¹⁶ See for instance: International Monetary Fund, 2012 Spillover Report, Background papers, July 10, 2012.

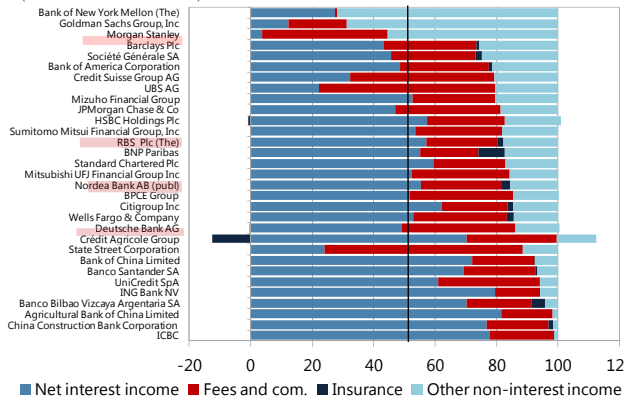
¹⁷ European Banking Authority, 2015, Report of the 2015 EU-wide Transparency Exercise, November 25, 2015.

Figure 4. Ranking and Income Sources of French G-SIBs

G-SIBs 2014 Ranking by Weighted Average of 12 Indicators of BCBS for G-SIBs (Billions of USD)



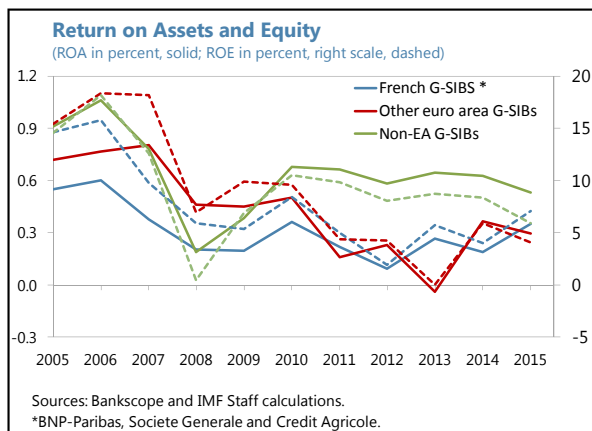
Sources of Income, Average of 2010-2015 (Percent of total income)



Sources: European Banking Authority, Board of Governors of the Federal Reserve System, and individual banks' annual reports, Bankscope and IMF staff calculations.

Evolution of financial performance and balance sheet resilience since the Global Financial Crisis

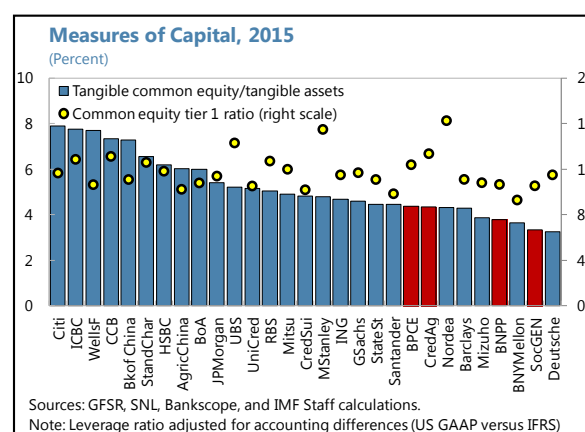
11. Performance of the French G-SIBs has improved since the Global Financial Crisis, in line with other EU G-SIBs, but profitability generally remains fragile (Figure 5). Average return on assets of the analyzed French G-SIBs has declined since the global financial crisis.¹⁸ It reached a trough in 2012, and has since moderately recovered. It has remained very close to the average profitability of other EU G-SIBs, and remains significantly below that of non-EU G-SIBs. Average return on equity has rebounded more strongly, and is broadly in line with global peers. Profitability is affected by relatively low net interest margins, partly reflecting regulated savings rates. Banks' average interest income on all interest yielding assets is close to the average of other G-SIBs, while average interest expenses, which have decreased sharply since crisis, remain somewhat above the average for non-EU G-SIBs (though in line with EU G-SIBs). Fee and commission income, as a share of income, is similar to the average of the full G-SIB sample, though below non-EU G-SIBs when measured against total assets, given France's banks relatively higher



¹⁸ The 2015 EBA transparency exercise showed that the return on regulatory capital of French banks is at the European average. Their main risk exposures are related to credit and operational risks.

leverage.¹⁹ Overhead costs (salaries, and other expenses) are broadly in line with peers' average in percent of revenues or in percent of income. The ACPR found that, while profitability of large French banking groups has slightly risen excluding exceptional items, there remain underlying weaknesses in France retail market, and poor profitability in a low interest rate environment raises questions on the banks' business models.²⁰

12. While balance sheets of French G-SIBs have been strengthened since the Global Financial Crisis, and they meet Basel III capital ratios and liquidity coverage ratios, they could remain exposed to large financial shocks (Figure 6). Capital buffers have increased significantly, in line with the average of G-SIBs, and French G-SIBs now meet the fully loaded Basel III capital ratios including the G-SIB surcharge, and the Liquidity Coverage Ratio (LCR), as a result of rising high quality assets (HQLA). Loan-to-deposit ratios continue to decrease.²¹ However, their leverage remains high; among the four G-SIBs with the highest leverage, two are French banks, and the still pending Net Stable Funding Ratio (NSFR) could require further adjustments. A counterpart of the high leverage is that their risk weights are generally low, and that low risk loans usually remain on their balance sheet.²² While the structure of banks' funding has improved over time since the Global Financial Crisis, the share of wholesale funding in total funding, and the share of wholesale funding with short-term maturity, remain above the average of European and non-European G-SIBs.



13. Reliance on wholesale funding, which was a source of risk in the past, remains high but has gradually declined, and the short-term liabilities are matched by buffers of liquid assets. The international expansion of French G-SIBs was partly funded by access to wholesale markets, including to some extent U.S. dollar money markets. Such funding played a significant role in the 2008 and 2011 crises. The funding market closed down in 2011, and France's banks had to roll over more than

¹⁹ Fees and Commissions on current accounts have increased recently as noted in the December 2015 *Evaluation des Risques du Système Financier Français* published by the Banque de France. US banks usually charges higher fees and commissions on mergers and acquisitions and on initial public offerings than their European peers.

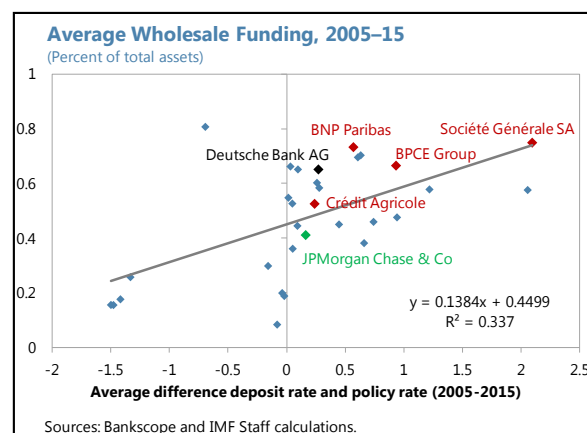
²⁰ Autorité de Contrôle Prudentielle et de Résolution, 2015, "French banks' performance in 2014", Note Analyse et Synthèse N.46, May 2015.

²¹ The 2015 EBA transparency exercise found that French banks meet the fully loaded Basel III capital requirements. See also the Global Financial Stability Report, Chapter one, April 2016.

²² The SSM comprehensive assessment in 2014 showed that the risk weights of French banks were adapted to their assets. According to the 2015 EBA transparency exercise, French banks have strong capital buffers and low non performing exposures, but high leverage among a large sample of European banks.

US\$200 billion of funding.²³ Typically a cheap source of funds needed to finance foreign activities of banks requiring US\$ (such as trade finance, project finance or commodity finance), these liabilities are of short duration and proved to be an underlying risk when money market funds caused sudden and large withdrawal of funding in periods of stress.²⁴ French banks' exposures to US\$ money market funds is below its pre-crisis peak, but according to Fitch ratings, their exposures to a subset of US prime money market funds reached about US\$ 70 billion in 2015:Q3, and exposures to European US\$ money market funds has increased.²⁵ However, France's banks have also accumulated buffers of liquid assets, including in US\$, which exceed their amount of short-term wholesale funding, and have lowered their loan-to-deposit ratio by increasing deposit taking.

14. Domestic retail deposits of French G-SIBs are structurally costly, partly reflecting regulated savings rates. The average cost of deposits is about 0.6 percentage points above the average cost for other EU G-SIBs and above the average cost for non-EU G-SIBs (Figure 6, bottom right chart). A possible explanation for the high cost of deposits is the impact of regulated interest rates on saving accounts (*Livret A*, *Livret de Développement Durable*, *Livret d'épargne populaire*): see also section C. The cost of deposits, which has not decreased much in recent years as the interest rates did not fully adjust to the decline in market rates, could be a factor contributing to the continued reliance on wholesale funding of the French G-SIBs to finance their large assets. We estimate that, between 2005 and 2015, the cost of deposits was on average above the ECB main refinancing rate, and that the average difference was about 2 percentage points, about 1 percentage point, 0.57 percentage points and ¼ percentage point respectively for Société Générale, BPCE, BNP-Paribas and *Crédit Agricole* (text chart).



15. Since the global financial crisis, French large banks have also reduced some of their foreign risk exposures. French banks have broadened their international exposures since the mid-2000s, but have retrenched since 2010–2011, especially their interbank exposures while exposures to

²³ See 2013 IMF Spillover Report – Analytical Underpinnings and Other Backgrounds, Chapter III; and Selected Issues Paper IMF country report 13/03, 2013, French Banks: Business Model and Financial Stability (by Amadou Sy).

²⁴ European Systemic Risk Board, 2015, "ESRB Recommendation on US dollar denominated funding of credit institutions (ESRB 2011/2) – follow up report overall assessment", ESRB European System of Financial Supervision. As a consequence of these risks, steps have been taken to strengthen risk management, risk monitoring, and contingency planning.

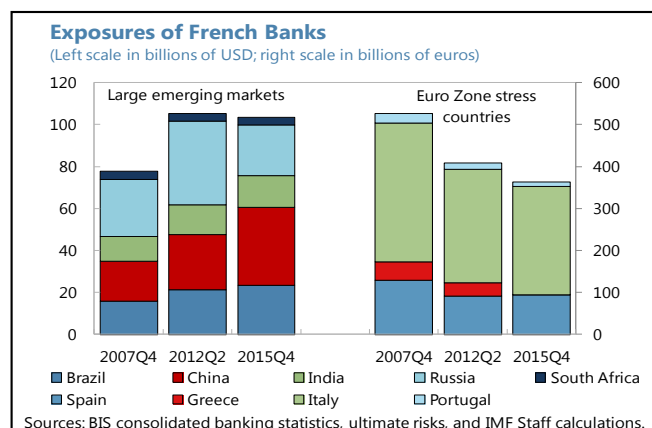
²⁵ According to S.E.C. money market fund statistics, French banks' exposures to US money market funds have averaged around \$160 billion in 2015.

the public sector continue to moderately increase.²⁶ For example, exposures to the euro area countries that experienced severe stress between 2010 and 2012 (Greece, Italy, Portugal and Spain) have declined substantially, from €526 billion at the end of 2007 to about €365 billion at the end of 2015.²⁷ During the same period, exposures to the large emerging markets (Brazil, Russia, India, China and South Africa) moderately increased from \$78 billion to €104 billion.

Impact of financial volatility on banks

16. Regression analysis can be used to isolate bank-specific effects of periods of volatility.

The objective is to analyze the extent to which banks are affected by volatility, and whether bank-characteristics can explain the bank-specific component of stress during volatility events. Our sample contains BNP-Paribas, *Crédit Agricole*, and *Société Générale*, and 24 other banks classified as G-SIBs at least once and for which we have balance sheet data going back to 2005.^{28 29} The analysis extracts the bank specific component of the monthly changes of stock prices or of CDS spreads during a financial crisis or during a period of severe market stress, after filtering out common and country specific determinants of stress, and after also filtering out “long-term” bank specific trends in stock prices or in CDS spreads (Box 2).



²⁶ For a detailed analysis of the evolution of the international activities of French banks, see Autorité de Contrôle Prudentielle et de Résolution, “The international banking activities of France’s main Banking groups since 2006”, Analyse et Synthèse N. 26, Octobre 2014.

²⁷ While further investigations are needed to draw definitive conclusions, these simple facts would suggest that the establishment of the Banking Union (the SSM, the SRM) has so far not reversed the fragmentation of the euro area banking system that took place between 2008 and 2012 (see: Goyal et al., 2013, “A Banking Union for the Euro Area”, IMF Staff Discussion Note 13/1.)

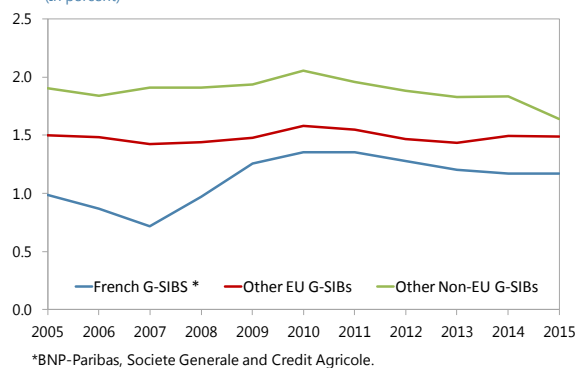
²⁸ Data are from Bankscope. Other G-SIBs include BBVA, Banco Santander, Bank of China, Bank of New York Mellon, Barclays, China Construction Bank, Citigroup, Credit Suisse, Deutsche Bank, Goldman Sachs, HSBC, Industrial & Commercial Bank of China, ING Bank, JP Morgan Chase, Mitsubishi Financial Group, Mizuho Financial Group, Morgan Stanley, Nordea Bank, Royal Bank of Scotland, Standard Chartered, State Street, UBS, UniCredit, and Wells Fargo.

²⁹ BPCE is not included because data are not available going back to 2005, and market data are not available.

Figure 5. Performance of French and Other G-SIBs

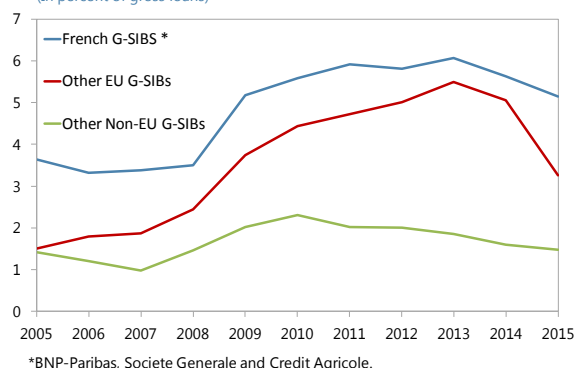
Net margins on loans have been stable.

Net Interest Margin (In percent)



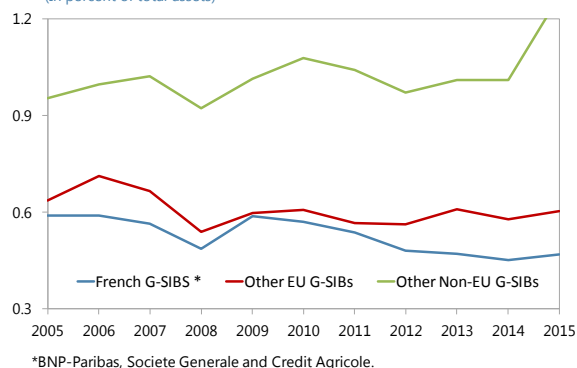
NPLs are driven by Italian subsidiaries.

Non-Performing Loans (In percent of gross loans)



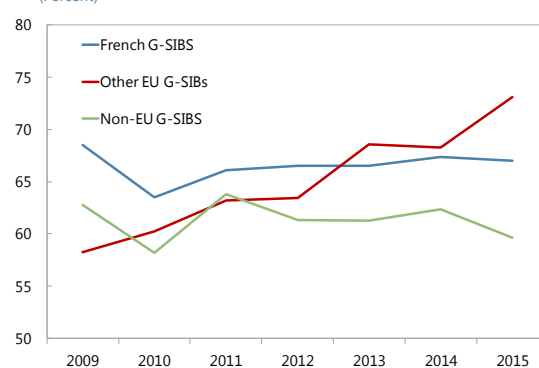
Fee and commission income, in percent of assets, is below the G-SIB average, partly reflecting higher leverage.

Fees and Commission Income (In percent of total assets)



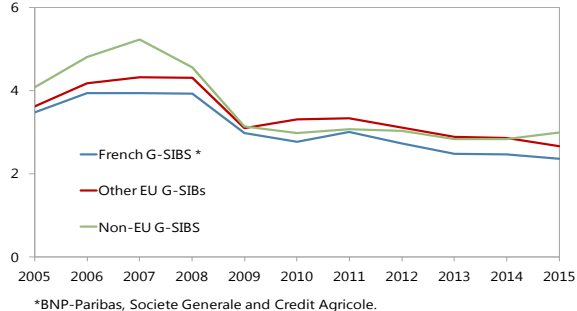
Overhead costs are in line with other G-SIBs...

Overhead Costs to Gross Revenues (Percent)



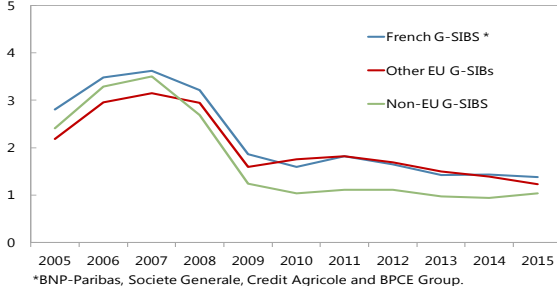
... and so is average interest income.

Interest Income to Average Earning Assets (Percent)



Costs of funds are in line with other EU G-SIBs.

Interest Expenses to Average Interest Bearing Liabilities (Percent)

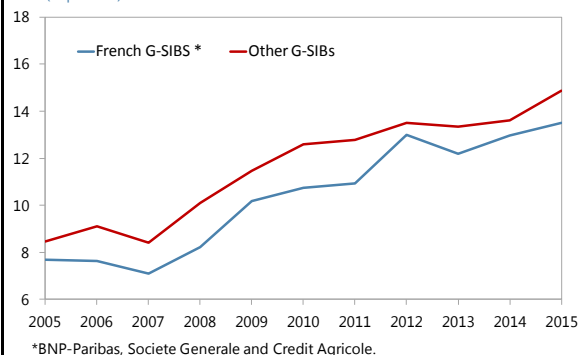


Sources: Bankscope and IMF staff calculations.

Figure 6. Balance Sheets of French and Other G-SIBs

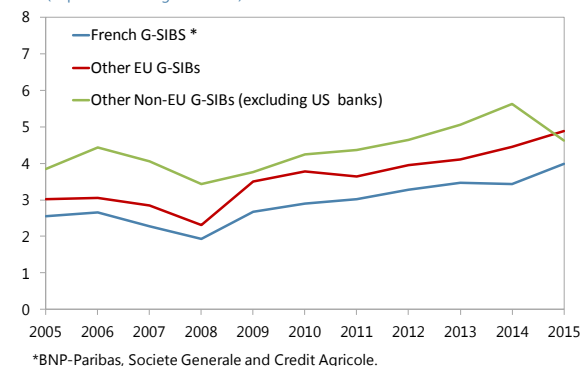
Capital has increased...

Tier 1 Capital Ratio (In percent)



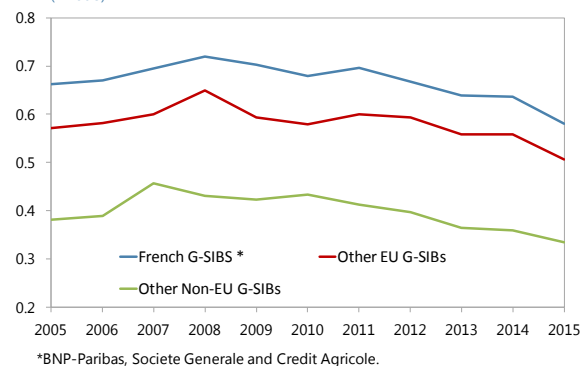
... but leverage remains high.

Tangible Common Equity (In percent of tangible assets)



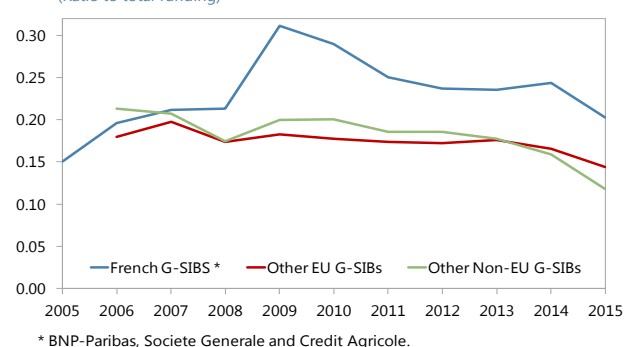
Reliance on wholesale funding has declined but remains relatively high,...

Wholesale Funding to Total Assets (In ratio)



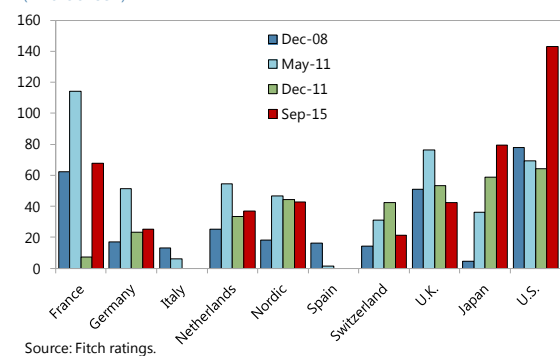
... with a high share of short-term funding.

Money Market and Other Short-term Market Funding (Ratio to total funding)



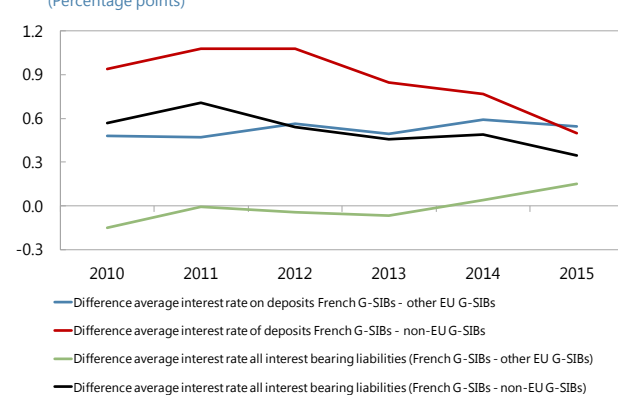
Exposure to US money market funds has increased.

Exposures of US Money Market Funds to Banks by Country (Billions of USD)



The cost of deposits remains elevated.

Difference Costs (Percentage points)



Sources: Bankscope and IMF staff calculations.

Box 2. Main Empirical Model

We regress the monthly percent change in bank equity prices or monthly changes in CDS spreads on the monthly percent change of the home country sovereign CDS spreads, an indicator of fiscal risks and availability of a backstop, and the monthly percent change in the home country's industrial production to control for the impact of the home country's real economy on banks' market performance. We also control for the monthly change in the VIX (an indicator of market volatility), to account for the co-movement in equity prices or CDS spreads related to global market volatility, and a set of bank fixed effects to control for banks' long-term trends in market performance. We identify the following periods of "intense financial stress": the first period is the Global Financial Crisis, which we define as lasting from September 2008 to March 2009; the second period is the euro area crisis, which comprises two event of severe market stress (May to September 2010, and July to December 2011), and a smaller volatility increase (March 2012 and July 2012); and the third period comprises the more recent events of market volatility (August 2015 to September 2015, and January 2016). The VIX, an indicator of global volatility, spiked during each of these periods during which stock prices declined significantly.

Specifically, we consider the following specification:

$$y_{it} = \alpha + \beta \cdot g_Sov_CDS_spread_{jt} + \gamma \cdot g_VIX_t + \theta \cdot g_IP_{jt} + \sum_i \delta_i \cdot bank_i + \sum_{k \in \{1,2,3\}} \phi_k \cdot crisis_k + \varepsilon_{it} \quad (1)$$

Where y_{it} is the monthly growth rate of the stock price of bank i (or the monthly change in bank i CDS spread), $g_Sov_CDS_spread_{jt}$ is the monthly growth rate of the sovereign CDS spreads in the stock price regression (its monthly change in the bank CDS spread regression), g_VIX_t the monthly growth (respectively change) in the VIX in the stock price regression (respectively in the bank CDS spread regression), g_IP_{jt} is the monthly growth of industrial production in country j , and $bank_i$ is a bank fixed effect. $crisis_k$ is an indicator that takes value one if a particular month belongs to one of the periods of severe financial stress above. The error term is clustered by country to correct for the potential correlation of changes in bank stock prices or CDS spreads between banks from the same country.

17. According to results reported in Panel A of Table 2, monthly changes in stock prices are negatively associated with changes in the sovereign CDS spreads, implying that the financial health of banks and of sovereigns are closely intertwined. These effects are significant: a one standard deviation increase in the monthly growth of sovereign CDS spreads is associated with a monthly stock price growth lower by 3.7 percentage points. Moreover, bank stock prices on average decline when market volatility increases. This comovement of stock prices, which is more intense during stress events, is large: a one standard deviation increase in VIX growth is associated with monthly bank stock price lower by 3.1 percentage points. We also find that, over and above the impact of sovereign health and market volatility, monthly changes in bank stock prices dropped on average by 1.8 percentage points, 2.8 percentage points and 5.4 percentage points respectively during the global financial crisis, during the euro area crisis and during the 2015/2016 episodes of financial market stress. Turning to bank CDS spreads (Panel B of Table 2), we also find significant impacts of sovereign CDS spreads and of market volatility of bank CDS spreads: a one standard deviation increase in the monthly change of sovereign CDS spreads (respectively of the VIX) is associated with an increase in the monthly change in bank CDS spreads of 16.8 basis points (respectively 4.8 basis points).

Table 2. Determinants of Bank Stock Prices and CDS Spreads**Panel A. Dependent variable:** monthly percent change in bank stock prices

	(1)	(2)	(3)
Sov. CDS spreads growth	-0.139***	-0.136***	-0.138***
VIX growth (m/m)	-0.122***	-0.125***	-0.109***
Ind. production (m/m)		0.210	
Indicators:			
Global financial crisis			-0.0188***
Euro area crisis			-0.0284***
Market stress 15/16			-0.0545***
Bank fixed effects			
Observations	2,867	2,847	2,867
R-squared	0.257	0.259	0.269

Panel B. Dependent variable: monthly change in bank CDS spreads

	(1)	(2)	(3)
Sov. CDS spreads change	0.918***	0.906***	0.906***
VIX change (m/m)	0.813**	0.853**	0.780**
Ind. production (m/m)		-55.31	
Indicators:			
Global financial crisis			2.900
Euro area crisis			8.105***
Market stress 15/16			6.687**
Bank fixed effects			
Observations	2,294	2,278	2,294
R-squared	0.274	0.275	0.280

Source: IMF staff calculations.

Bank Characteristics and Bank Specific Financial Stress

18. Leverage, wholesale funding, profitability, and efficiency tend to be associated with equity price movements of individual G-SIBs during periods of intense financial stress (Table 3 and Figures 7a, 7b, 7c). We investigate further the inter-relationship between the bank specific component of financial stress during each of the selected episodes of market volatility and various indicators of financial performance and of balance sheets, following the approach of Box 3.³⁰ Banks more leveraged, more dependent on wholesale funding, less profitable and less efficient consistently experience larger decline in stock prices during periods of intense financial stress (Table 3 and Figures 7a, 7b, 7c). During the acute phase of the Global Financial Crisis, leverage, measured by the inverse of the ratio of tangible common equity to tangible assets, and the share of wholesale funding to total funding, were two clear correlates of individual bank-specific financial stress uncovered in regression

³⁰ Other bank indicators such as the NPL ratio were also considered, but were not significant when other controls were added.

(2): the crisis hit more severely banks that were more leveraged and more dependent on wholesale funding. By contrast, indicators of financial performance (such as the ROA) or of costs (such as the cost to income ratio) were not clearly correlated with the bank-specific financial stress (Figure 7a). During the various periods of the euro area crisis from 2010 to 2012, reliance on wholesale funding, financial performance and costs were clearly correlated with the bank-specific component of financial stress: banks more reliant on wholesale funding, less profitable and less cost efficient experienced more severe declines in their stock prices. During the recent periods of market volatility in 2015 and in 2016, the extent of bank specific stress was larger for G-SIBs more reliant on wholesale funding, more leveraged, less profitable and less cost efficient (Figure 7c). The regression analysis reported in Table 3 shows that reliance on wholesale funding and profitability are two significant factors for the extent of decline in stock prices experienced by a bank.

Box 3. Empirical Model to Uncover Bank-Specific Equity Price Movements

We investigate further the inter-relationship between the bank specific component of financial stress during each of the selected episodes of market volatility and various indicators of financial performance and of balance sheets in two steps:

- *Extracting bank specific crisis effects.* we uncover from the regression analysis each bank i specific component of financial stress during the period k considered, after netting out common elements of financial stress measured by the VIX and sovereign CDS spreads, based on the following regression:

$$y_{it} = \alpha + \beta \cdot g_Sov_CDS_spread_{jt} + \gamma \cdot g_VIX_t + \theta \cdot g_IP_{jt} + \sum_i \delta_i \cdot bank_i + \sum_{k \in \{1,2,3\}} \phi_k \cdot crisis_k + \sum_i \sum_k \varphi_{i,k} \cdot bank_i \cdot crisis_k + \varepsilon_{it} \quad (2)$$

- *Determinants of bank-specific crisis effects.* In a second step, we perform a regression of the bank specific components $bank_i \cdot crisis_k = bank_{ik}$ on bank specific variables X_{ik} related to their financial performance or their balance sheet, measured at the end of the calendar year that precedes the crisis period k . We also show scatter-plots of these bank specific effects vis-à-vis balance sheet and financial statement indicators. For example, for the first period (the Global Financial Crisis), we use financial statements and balance sheet information of the calendar year 2007. For the last period encompassing the 2015 and early 2016 periods of financial volatility, we use financial statements and balance sheet information of the calendar year 2014.

For the euro area crisis, which comprises several periods of volatility between 2010 and 2012, we use banks' information of calendar year 2010. We rely on the R2 of these regressions and the significance of the coefficient estimates as guides of the importance of the bank specific information considered as a determinants of the banks' specific financial stress:

$$bank_{ik} = \mu + \sum_l \eta_l \cdot X_{lk} + \varepsilon_{ik} \quad (3)$$

19. The cross-sectional results do not translate to all of France's banks, suggesting that other, mitigating factors may play a role.

Considering the evidence for France's three banks included in the sample, a mixed picture emerges. The bivariate analysis suggests that, during the global financial crisis in 2008–09, the three French banks experienced a stock price decline below what would be predicted by the full sample based on their relatively high leverage and dependence on wholesale funding. In other words, France's banks were relatively far removed from the bivariate regression line of the full sample (Figure 7a, bottom two charts). In 2011–12, the negative impact of the financial shock on French banks was more in line with their observed characteristics (Figure 7b). During the more recent bouts of global market volatility in 2015 and early this year, the stock price declines of BNP-Paribas and of *Société Générale* were again significantly lower than the stress predicted by the cross-sectional results given their high wholesale funding and leverage, while *Crédit Agricole* appeared closer to the cross-sectional regression line (Figure 7c, bottom two charts). However, in the multivariate regression analysis (Table 3)—which confirms that wholesale funding, profitability, and to a lesser extent, leverage may be associated with bank specific stock market reactions to financial stress—France's banks do not appear as outliers.³¹ Taken together, these findings suggest that profitability, leverage, and reliance on wholesale funding are important factors that can help explain the extent to which banks are exposed to large financial shocks. However, the results for France's banks in particular also indicate that other unobserved, mitigating factors may be at play, which could include the quality of assets, the quality of management, or the diversification of risks.³²

Table 3. Bank Characteristics and Bank-Specific Stress

	(1)	(2)	(3)	(4)	(5)	(6)
Wholesale funding in percent of total funding	-0.0453**	-0.0447**	-0.0542**			
Short-term market funding to total funding				-0.0995***	-0.101***	-0.116***
Return on assets	0.0234*			0.0260**		
Return on equity		0.00178**			0.00192***	
Cost-to-income ratio			-0.000591*			-0.000597**
Tangible common equity to tangible assets	0.00184	0.00315	0.00303	0.0041	0.00562**	0.00638**
Dummy second crisis period (2011-2012)	0.0340*	0.0279	0.0277	0.0338*	0.0254	0.0239
Dummy third crisis period (2015-2016)	0.0690***	0.0645***	0.0634***	0.0672***	0.0603***	0.0565***
Observations	77	77	77	80	80	80
R-squared	0.417	0.434	0.424	0.425	0.441	0.423

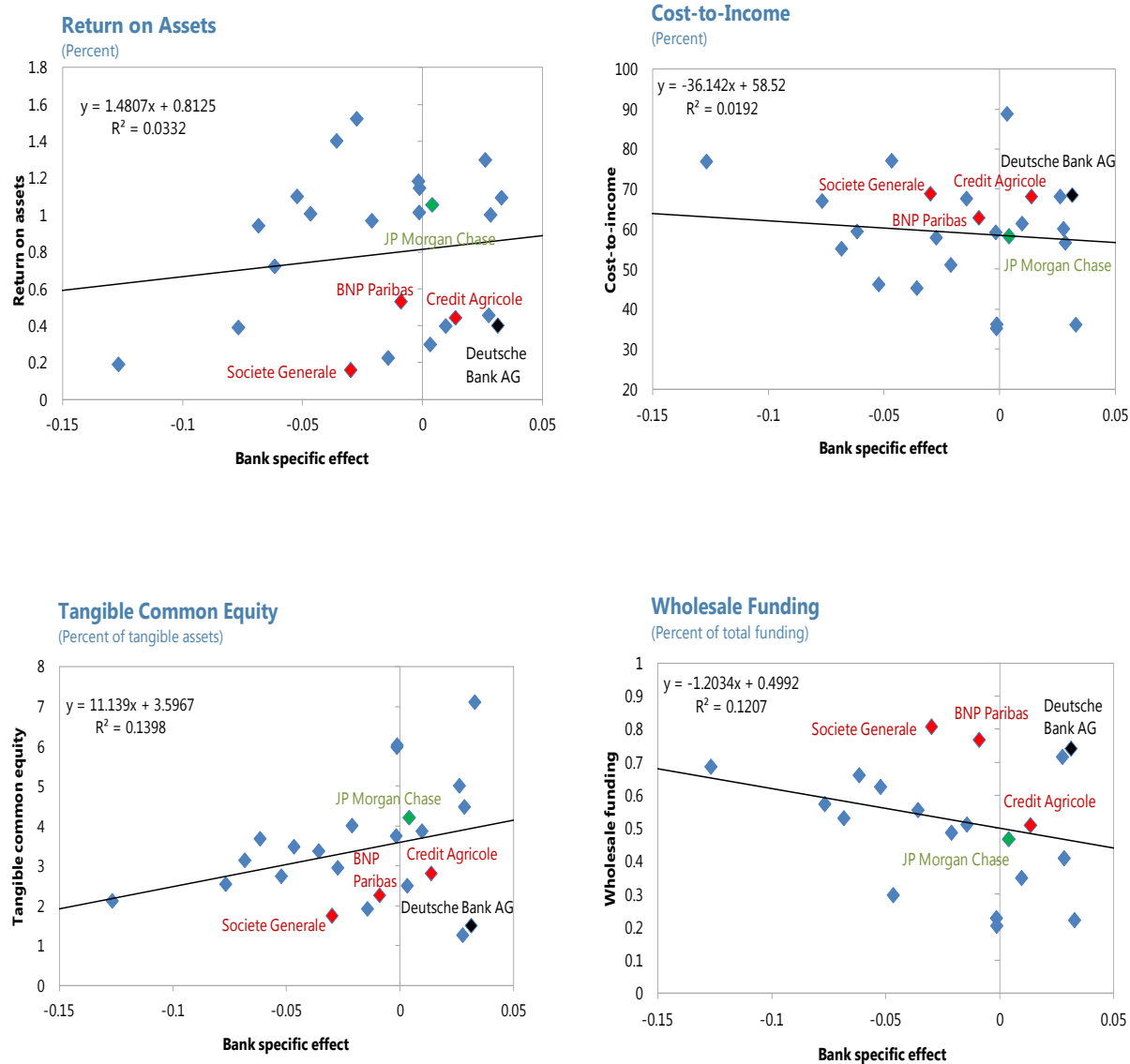
*** p<0.01, ** p<0.05, * p<0.1. Observations are clustered by bank.

Source: IMF staff calculations.

³¹ This conclusion is based on inspection of the standardized residuals of the regressions. Exclusion of one observation with a somewhat large standardized residual does not affect our main conclusions quantitatively or qualitatively.

³² The R² of the regressions reported in Table 3 suggest that the empirical model explains about 40 percent of the variation of bank-specific crisis effects.

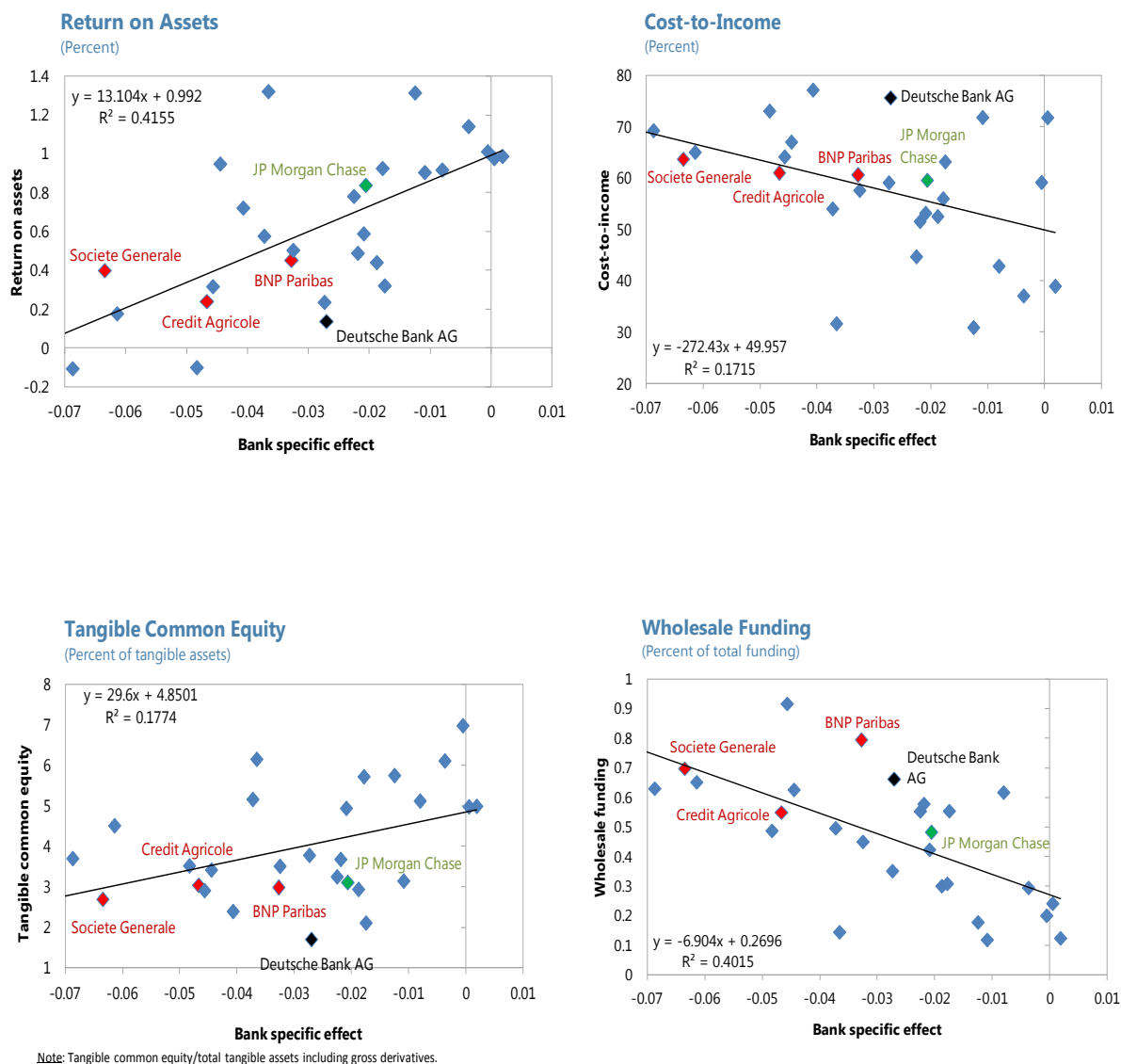
**Figure 7a. Global Financial Crisis (2008:Q3–2009:Q4):
Estimated Bank Specific Determinants of Monthly Changes in Equity Prices**



Sources: Bankscope and IMF staff calculations.

Notes: Bank specific effect during a crisis estimated from a panel regression described in the text. Bank indicators are measured at the end of 2007 and monthly average of percent change in sovereign CDS spreads between August 2008 and March 2009.

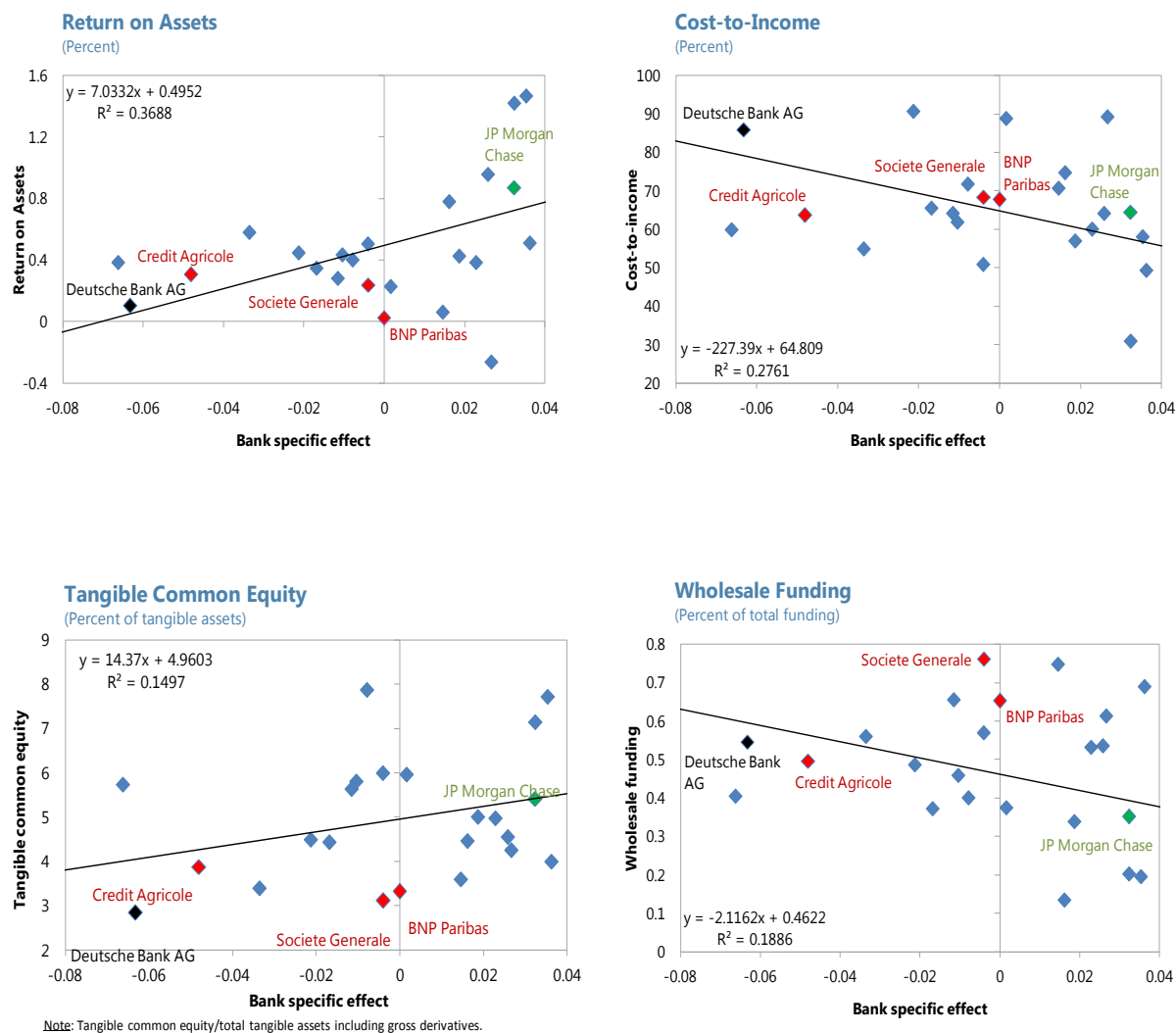
**Figure 7b. Euro Area Crisis (Selected Quarters in 2011 and 2012):
Estimated Bank Specific Determinants of Monthly Changes in Equity Prices**



Sources: Bankscope and IMF staff calculations.

Notes: Bank specific effect during a crisis estimated from a panel regression described in the text. Bank indicators are measured at the end of 2010 and monthly average of percent change in sovereign CDS spreads between July 2011 and July 2012.

**Figure 7c. Financial Market Stress (2015:08–09 and 2016:01):
Estimated Bank Specific Determinants of Monthly Changes in Equity Prices**



Sources: Bankscope and IMF staff calculations.

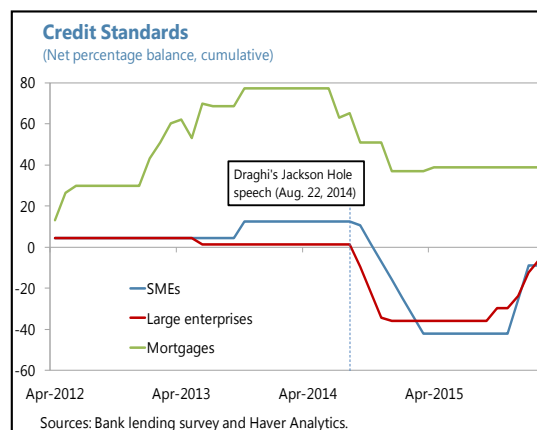
Notes: Bank specific effect during a crisis estimated from a panel regression described in the text. Bank indicators are measured at the end of 2014 and monthly average of change in sovereign CDS spreads is average bi-monthly change of February 2016 and September 2015.

C. How Would Prolonged Economic Stagnation Affect France's Banks?³³

³³ Prepared by Thierry Tresselt (EUR).

Background

20. Low growth can be costly to banks (Figure 8).³⁴ A sustained period of low interest rates associated with economic stagnation and accommodative monetary policies reduces bank income from term transformation activities.³⁵ French banks have also reportedly loosened their lending standards relative to mid-2014, which may be needed to attract customers in a competitive retail market, while their margins on loans to enterprises and on mortgages have declined. According to the Bank Lending Survey, they appear not to have fully compensated the decline in margins by an increase in non-interest charges on their loans – though other bank services, such as bank current accounts, have started to attract fees. There are indications, however, that spreads on new loans have started picking up in recent months. A prolonged period of low interest rates rendered necessary by economic stagnation also exposes banks to interest rate risks when normalization of monetary policy occurs, especially as households are refinancing their mortgages at very low interest rates.³⁶



21. Cyclical macroeconomic conditions in France (real GDP growth and inflation) have an impact on bank spreads, loan quality and credit growth. We regress spreads on large loans (> 1 million euros), spreads on small loans (<1 million euros), the growth of loans to non-financial corporations, and the growth of the ratio of NPLs to total loans to non-financial corporations on various lags of France's real GDP growth and CPI inflation during the period 2000:Q1 to 2015:Q4.³⁷ The analysis suggests that lower inflation and lower real GDP growth tend to be associated with smaller spreads on loans, slower credit growth and a deteriorating credit quality, and therefore tend to deteriorate the profitability of the main French banks by reducing their net interest margins and increasing their provisioning for non-performing loans (Table 4). The estimated impact is sizeable. For instance, based on the regression with the first lags only, a one standard deviation increase in inflation is associated with a 0.1 percentage point increase in spreads on large loans and a 0.2 percentage point increase in loan growth after one quarter. A one standard deviation increase in real GDP growth is associated, after one quarter, with an increase in spreads on large loans by 0.2 percentage points, an increase in the growth of credit to non-financial corporations by 0.4 percentage points and an increase in the growth rate of the NPL ratio of 1.5 percentage points.

³⁴ See also Banque de France, 2015, "Evaluation des Risques du Système Financier Français", Banque de France, Eurosystem, December 2015.

³⁵ Haut Conseil de Stabilité Financière, Rapport Annuel, Juin 2015.

³⁶ Most mortgages in France are fixed rate mortgages, which can be refinanced at the cost of 6 months of interest.

³⁷ Spreads are defined as the difference between the average lending rate for the loan category considered and the average deposit rate.

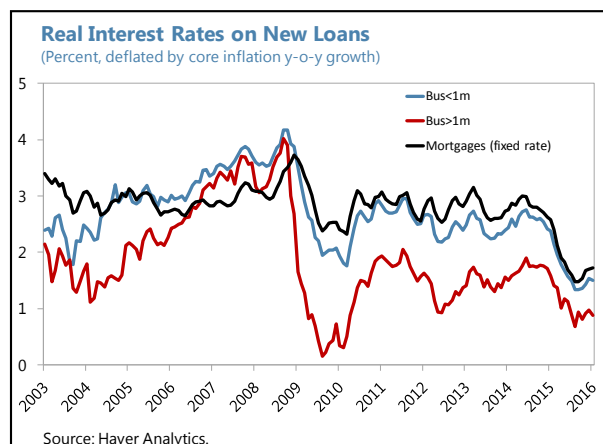
Table 4. Cyclical Impact of Real GDP Growth and Inflation on Bank Loans to Firms

Dependent variable:	Spreads on loans > 1 mil			Spreads on loans < 1 mil			Growth of credit to NFC			Growth of NPL ratio (QoQ)		
	euros			euros			(QoQ)			(QoQ)		
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
Inflation (QoQ)												
lag 1	0.581*	0.458	0.627*	0.555**	0.474**	0.331	0.941*	0.780	0.686	0.291	1.315	-0.429
lag 2		0.401	0.339		0.403*	0.354*		-0.106	-0.105		-1.750	-1.453
lag 3			-0.106			0.356			0.230			2.433**
Real GDP growth												
lag 1	0.378***	0.185	0.138	0.119	0.0799	0.0796	0.820***	0.411*	0.394	-2.909***	-1.976***	-1.711***
lag 2		0.404***	0.261*		0.103	0.0771		0.776***	0.723**		-1.768***	-1.067**
lag 3			0.310**			0.0789			0.168			-1.351***
Observations	52	52	52	52	52	52	62	61	60	62	61	60
R-squared	0.205	0.362	0.433	0.156	0.240	0.294	0.217	0.327	0.339	0.395	0.528	0.607

*** p<0.01, ** p<0.05, * p<0.1

Source: IMF staff calculations.

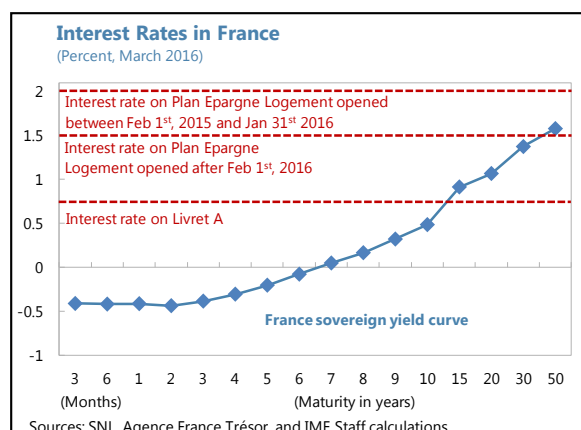
22. Quantitative Easing (QE) has helped support bank income.³⁸ It supports the recovery and the demand for bank loans by lowering real interest rates through the bank lending channel. QE appears to be working its way through the financial system as real borrowing rates for firms and households have declined since mid 2014 while credit to firms and mortgage credit have picked up since 2015 (text chart). However, inflation expectations remain on a downward trend, suggesting monetary policy may remain very accommodative for some time. Through portfolio rebalancing or direct purchases of private sector debt, QE has also boosted financial markets and a search for yield, which support bank income from asset or wealth management activities, and lifts the value of bank assets that are marked to market, which is positive in the short-term. QE has also lowered wholesale funding costs, which account for a large share of the funding of French banks. French banks' funding cost is also lowered directly through their participation in targeted



³⁸ QE has operated along several dimensions. In addition to rates on main refinancing operation (MRO) at zero since March 2016, it consists of: (i) targeted long-term refinancing operations linked to lending to specific sectors, with long maturities (2 to 4 years), and at rates that have varied with the MRO rate between 15 bps and 0 bps; (ii) asset purchases of €80 billion per months (initially sovereign debt, and extended to corporate bonds); (iii) negative rate on the deposit facility (-0.4 percent at the end of March 2016); and: (iv) some elements of forward guidance.

refinancing operations which may directly lower lending rates.³⁹ However, bank income is adversely affected by the flattening of the yield curve induced by QE.

23. Net interest margins are compressed. Average deposit rates have fallen by less than lending rates partly because regulated rates on savings accounts such as the Livret A, Livret de Développement Durable (both at 0.75 percent since August 2015), and Livret d'Épargne Populaire (at 1.25 percent), the Plan Épargne Logement, (which is renumeralated at the interest rate fixed at the time the account is opened), all remain significantly above market rates. In addition, the negative interest rate on the ECB deposit facility imposes losses to banks during periods of financial stress when banks tend to increase their deposits at the eurosystem: since volatility in global financial markets has picked up in 2015, euro area banks have increased deposits at the ECB facility, and French banks' deposits have reached €93 billion at the end of March 2016.



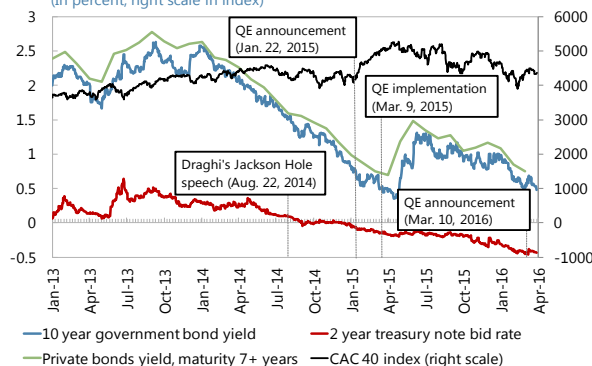
How do Low Growth and Low Inflation in the Home Market Impact the Performance of G-SIBs?

24. Macroeconomic conditions in the home country have a sizeable impact on global banks' profitability. We investigate the extent to which financial performance of G-SIBs is impacted by macro-economic conditions in their home country, according to the model described in Box 4. We find that, in countries with higher real GDP growth or higher inflation, G-SIBs tend to have higher profitability measured either by ROA or by ROE (columns 1 and 3 of Table 5). The estimated effect is large: G-SIBs from countries with growth (respectively inflation) higher by one standard deviation tend to have ROA higher by 0.17 percentage points (respectively 0.1 percentage points) annually. When we include bank fixed effects (columns 2 and 4), the effect of real GDP growth becomes insignificant, and the effect of inflation becomes very small (but remains statistically significant). These findings suggest that global banks which have as home market countries with low growth and low inflation tend to have low profits relative to global banks which have high growth countries as their home market. The impact on ROE of a one standard deviation increase in real GDP growth (respectively inflation) is also significant and large, estimated at, in absence of bank fixed effects, 1.7 percentage points (respectively 1.6 percentage points). We also find that, once controlling for bank specific effects, banks with larger spreads between their average cost of deposits and the home country policy rate have lower profitability. This effect is economically large: a one standard deviation increase in this spread is associated with ROA lower by 0.1 percentage points and ROE lower by 1.8 percentage points.

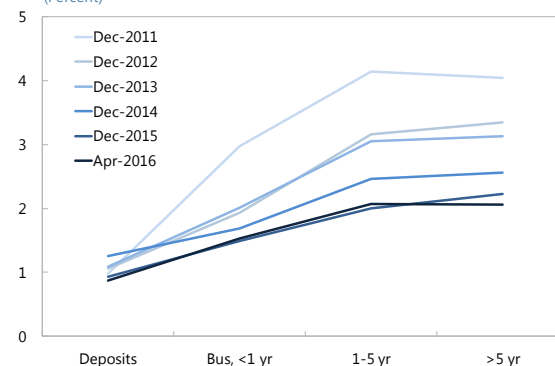
³⁹ At the end of March 2016, total lending by the eurosystem to French monetary and financial institutions reached €134 billion.

Figure 8. Impact of Monetary and Economic Conditions on Banks*QE boosts financial markets and lowers funding costs**but reduces bank profits from term transformation***Effect of QE on Financial Markets**

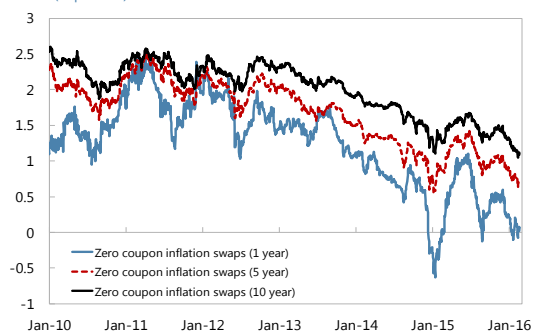
(In percent; right scale in index)

**Term Structure of Interest Rates**

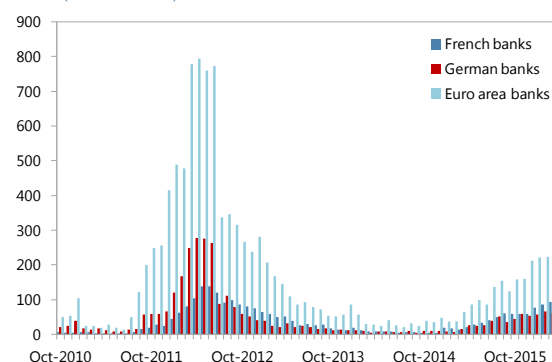
(Percent)

*Inflation expectations are not picking up***France: Inflation Expectations**

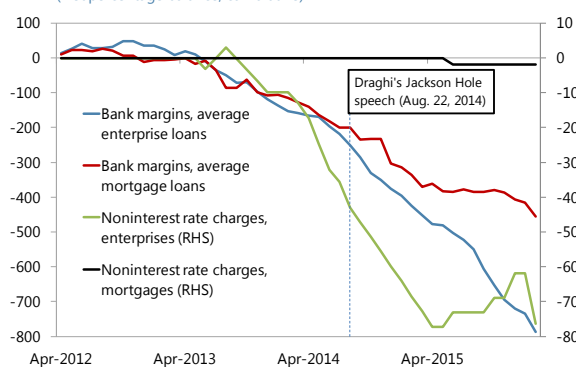
(In percent)

*and the negative rate on the deposit facility is costly to banks under stress***Eurosystem Deposit Facility Balance**

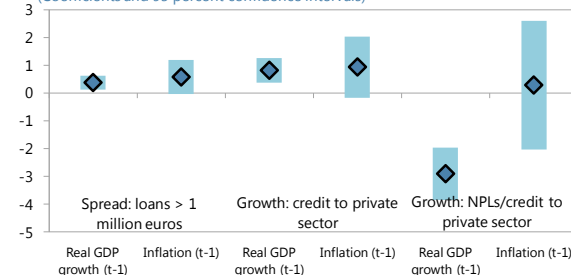
(Billions of euros)

*Banks margins have declined, and are reportedly not offset by higher fee income from loans***Bank Margins and Noninterest Rate Charges**

(Net percentage balance, cumulative)

*Low real GDP growth and low inflation are a drag on credit growth, spreads, and credit quality***Regression Estimates: Impact of Inflation and GDP Growth on:**

(Coefficients and 95 percent confidence intervals)



Note: Coefficient estimates and confidence intervals of a regression of spreads, credit growth or NPL to credit ratio on lagged real GDP growth and inflation at a quarterly frequency.

Sources: Bloomberg, Haver Analytics, Bank Lending Survey, and IMF staff calculations.

Box 4. Home Macro-Economic Conditions and Global Banks' Profitability

We investigate the extent to which financial performance of G-SIBs is impacted by macro-economic conditions in their home country in a panel of 31 banks in 10 countries that are or have been classified as G-SIBs, during the period 2005–2015. The determinants of banks' return on assets and return on equity are modeled as follows:

$$y_{it} = \alpha + \beta \cdot x_{it} + \delta \cdot z_{jt} + \Delta_i + \varepsilon_{it} \quad (1)$$

Where y_{it} is either the ROA or the ROE of bank i during year t , x_{it} is a set of bank i specific variables during year t , z_{jt} is a set of macro-economic variables for bank i home country j during year t , Δ_i is a set of bank fixed effects and ε_{it} is the equation residual (which we cluster by bank). Bank specific variables include a measure of capital (the Tier one ratio, or the ratio of tangible common equity to tangible asset), a measure of loan quality (the ratio of NPLs to gross loans), of cost efficiency (the overhead cost to income ratio). Macro economic variables include real GDP growth, the inflation rate, an indicator for the Global Financial Crisis (dummy equal to one for 2008 and 2009), and the spread between the average deposit rate and the monetary rate (main refinancing rate) to measure the extent to which deposit rates adjust to changes in monetary policy.^{40 41} We expect that in faster growing countries, demand for bank loans is higher, and therefore bank would tend to increase their margins. Higher inflation would be associated with higher nominal interest rates. Indeed, in such conditions, banks' setting of deposit rates would be less constrained by the zero lower bound and therefore they would be able to enjoy larger margins. Similarly, a larger spread between deposit rates and the monetary rate suggests that banks are less likely to pass on a loosening of monetary policy to depositors, and therefore that they are more likely to compress their margins as a result of such a loosening.

Table 5. Home Country Macroeconomic Conditions and G-SIBs Profitability

Dependent variable:	ROA		ROE	
	(1)	(2)	(3)	(4)
Macro variables:				
Average deposit rate - policy rate	-0.0227	-0.0958**	-0.258	-1.716**
Real GDP growth	0.0479***	0.0167	0.467**	0.147
Inflation rate	6.583***	0.0531**	107.1**	0.759*
Dummy Global financial crisis	-0.511***	-0.388***	-13.19***	-10.67***
Bank specific variables:				
Tier one capital ratio	-0.0313*	0.0205*	-0.680**	0.120
NPL to gross loans ratio	-0.0685***	-0.0811***	-1.383***	-1.983***
Overheads to total assets	7.896	-16.27	-99.03	-254.8
Bank fixed effects	NO	YES	NO	YES
Number of banks	31	31	31	31
Observations	258	258	258	258
R-squared	0.424	0.697	0.380	0.587

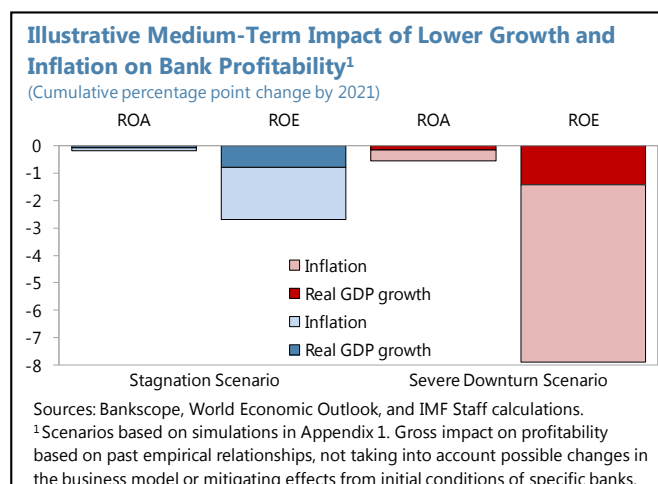
*Note: Robust standard errors clustered by banks. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$*

Source: IMF staff calculations.

⁴⁰ Annual average of the monthly spread between the deposit rate and the main refinancing rate.

⁴¹ A recent study of the Federal Reserve Board found that low interest rates impact bank net interest margins as interest expenses adjust by less than interest income to a decline in interest rates, particularly in a low interest rate environment (Claessens, Stijn, Coleman, Nicholas, and Michael Donnelly, 2016, "Low-for-long" interest rates and interest margins of banks in Advanced Foreign Economies", International Finance Discussion Paper Note April 2016, Board of Governors of the Federal Reserve System).

25. A protracted low growth and low inflation environment, combined with a high cost of deposits relative to the monetary policy rate, could squeeze the profitability of the four large French G-SIBs. Under staff's illustrative downside scenarios (described in Appendix I of the staff report), the profitability of France's banks could decline appreciably over the medium term based on the historical empirical cross-sectional relationships and assuming no change in their business models. In an illustrative simulation of a severe downturn



scenario with global financial stress, the gross impact of lower growth and inflation in France could imply a more than 7½ percentage point (respectively ½ percentage point) cumulative reduction in the return on equity (respectively return on assets) for the French G-SIBs by 2021. Under a protracted euro area stagnation scenario, the cumulative decline would be more than 2½ percentage points (respectively 0.2 percentage points) in the return on equity (return on assets) by 2021. This may, over time, weaken their ability to build capital from retained earnings or to distribute dividends, and hamper their ability to lend to the real economy. However, given their diversification, French G-SIBs may be less sensitive to large cyclical shocks than many other EU banks, and a protracted stagnation would likely induce further changes in the business model to adapt to the new macroeconomic environment.

D. How Can France's Banks Adapt to The Changing Environment?⁴²

Overall, French G-SIBs have maintained their diversified universal banking model and have been gradually adapting their activities. Further adaptation to the evolving financial landscape seems needed, including banking union, still-pending regulatory requirements, changes in market structure in the financial sector driven by technological advances, in the context of still-high costs and a weak macroeconomic environment that limits growth and profitability prospects.

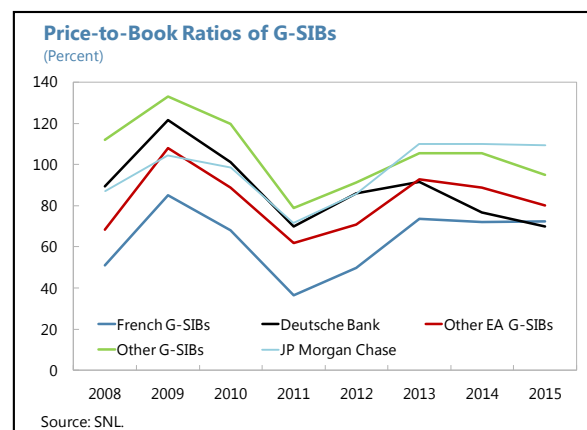
26. European banks are in the process of adapting to a number of common challenges. First, banking union is still young and incomplete, and banks continue to position themselves differently across countries (both within and outside the EU) and activities (e.g. investment banking, asset management, insurance, digital banks). Second, regulatory uncertainty is gradually being resolved as new standards and practices are set globally (e.g. Total Loss Absorbing Capacity (TLAC)) and within the banking union (e.g. harmonization of practices such as the use of internal models), though several elements remain outstanding and banks continue to adjust to comply. Finally, the financial sector landscape is evolving, with new non-bank players and new channels of credit provision (e.g. "fintech", crowd funding) that could come to threaten banks' traditional businesses. Rapid technological change

⁴² Prepared by Piyabha Kongsamut (EUR).

also could lead to major shifts in the behavior of consumers, for example toward more mobile banking, implying less need for physical branches.

27. The low equity price to book ratio relative to other global banks is a market-based indication of the perceived magnitude of these challenges.

The listed part of the French global entities is persistently valued lower than most other G-SIBs, suggesting that the market views French banks' prospects as worse than for some other G-SIBs.⁴³ The combination of low margins and regulatory uncertainty was seen as the main reasons for this outcome. Another possible contributing factor is their systemic nature, broad geographic exposures and diverse business activities, making valuation difficult.



28. Similar to other EU G-SIBs, French banks have adapted to the crisis and these main challenges by shifting the composition of exposures, and by reducing foreign exposures.⁴⁴

- At the system level (based on BIS data whose coverage is broader than the four G-SIBs), since their peak in 2007, foreign exposures of banks have declined relative to GDP in 60 percent of the countries with G-SIBs (Figure 9),⁴⁵ with banks in Switzerland and Netherlands experiencing particularly large declines of more than 100 percent of GDP. French banks have mirrored this trend, and in particular have reduced their exposures to foreign banks and other potential exposures, most of which was a decline in guarantees, but also in derivatives and credit commitments. French banks are quite well diversified geographically and are primarily focused on activities in advanced economies, with exposure to other euro area countries reaching almost 40 percent of foreign claims. Their exposures to emerging market countries have also risen from 6 percent to around 8 percent of total foreign claims in 2015.⁴⁶ This could reflect efforts to diversify their income sources, as their focus on advanced economies may mean difficulty in raising profits given more subdued economic prospects.

⁴³ The listed entity differs from the group entity for two of the French G-SIBs: *Crédit Agricole* SA, and Natixis of BPCE.

⁴⁴ See also Selected Issues 2013, "French banks: business model and financial stability," by A. Sy.

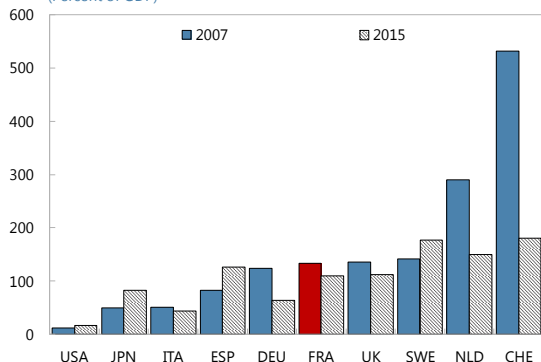
⁴⁵ Data for China, another country with several G-SIBs, is not available.

⁴⁶ Within the top 20 foreign exposures of French banks, emerging markets Poland, China, Turkey, and Brazil have joined the list, along with Hong Kong and Singapore, even as Greece, Korea, Norway, and Austria have dropped out.

Figure 9. Global Banks' Adaptation of Exposures

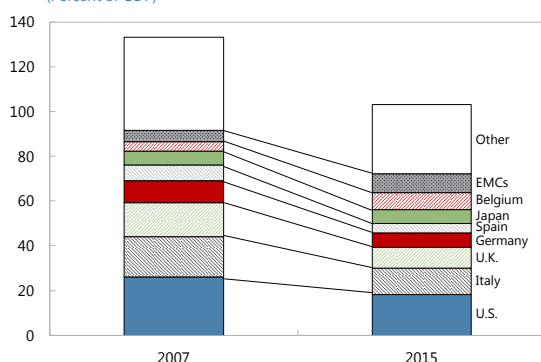
French banks reduced their foreign exposures along with several other European banks ...

Foreign Exposures in Countries with G-SIBs
(Percent of GDP)



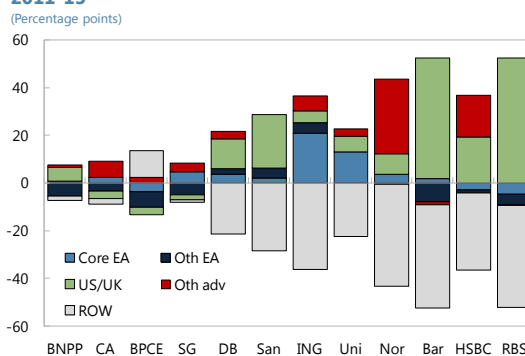
French banks have maintained most of their top exposures by country, mostly to advanced economies.

French Banks' Foreign Exposures
(Percent of GDP)



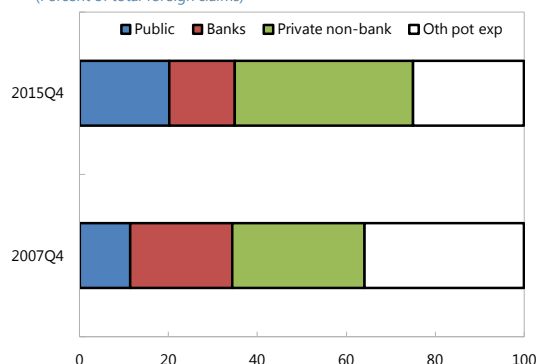
... but the G-SIBs seem to have overall adjusted by less than some of their peers.

Change in Share of Foreign Credit Exposure of EU G-SIBs, 2011-15
(Percentage points)



By sector, they have reduced claims on other banks and other potential exposures, while increasing those to the public and non-bank private sector.

Foreign Claims by Sector
(Percent of total foreign claims)



Sources: Haver Analytics, EBA databases, and IMF staff calculations.

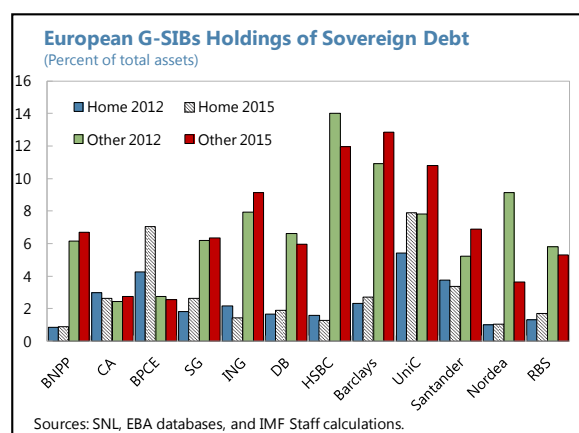
- At the bank level, the four French G-SIBs seem to have made smaller shifts in foreign exposures since 2011 than many other European G-SIBs.⁴⁷ The four banks have all reduced their exposure to some vulnerable euro area countries (e.g. Greece), but have gone different ways on exposures to core euro area countries, with *Crédit Agricole* and *Société Générale*'s shares increasing, even as *BPCE*'s has declined and *BNPP*'s remained broadly unchanged. Despite this seemingly small adjustment, the banks have been actively adjusting their balance sheets; *Crédit Agricole* sold off Emporiki bank in Greece; *BNPP* is selling a private bank in Netherlands, and Poland is now among its top 10 exposures.

⁴⁷ Data for 2011 have less granular detail on specific country exposures for certain G-SIBs relative to 2015 data (Santander, Unicredit, ING); in these banks the "rest of the world" category may be overstated in 2011.

- Some French G-SIBs have also undertaken “de-risking” activities by reducing correspondent banking relationships. These changes have come in the wake of a tightening of global anti-money-laundering standards and practices, as well as fines for violating U.S. economic sanctions on certain countries. This appears to have been less prevalent among French banks than others such as UK and US banks.⁴⁸ The banks noted that these changes were mainly driven by profitability considerations; the revenues at stake were too low to justify the compliance costs to cover both the correspondent banks and the customers they serve.

29. At the same time, the banks have been adjusting to ongoing regulatory changes, and more are on the way. Many of the regulatory

uncertainties have been resolved and adjusted to higher quality capital requirements, Liquidity Coverage Ratio (LCR), while others are still in the pipeline (Figure 10). For example, in the context of the LCR, the principal six French banks have increased their exposure to the public sector significantly, particularly in high-quality liquid assets which have more than doubled since 2010. Nevertheless, their holdings of sovereign debt are not out of line with



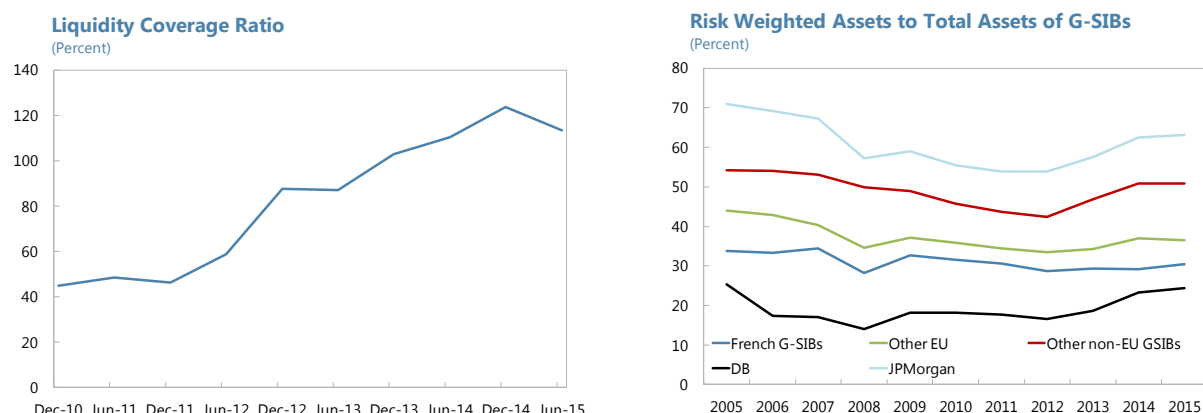
other European G-SIBs. The still-pending Net Stable Funding Ratio (NSFR) could prove more challenging for French banks than other EU banks, as they need to hold more stable funding to meet the requirements; nevertheless, progress has been made at the aggregate level. Liquidity buffers have thus been strengthened significantly. Upcoming challenges are driven by initiatives either at the global or European level, and include for example the Total Loss Absorption Capacity requirement by 2019, Minimum Required Eligible Liabilities at the European level, NSFR, leverage ratio, harmonization of the use of internal models for credit risk and the treatment of risk-weighted assets, greater standardization of operational and market risk, interest rate risk, sovereign risk, and others that might affect the scope of activities or the range of market-making activities. Estimates have varied on how specific changes will impact French banks, as shown above. The French authorities have proposed a new class of debt in between senior debt and subordinated debt that would fulfill the TLAC requirement; this is in parliament and is expected to be adopted in the second half of the year. Some of the key regulatory initiatives which could result in significant additional capital needs for French banks involve the harmonization of internal models for credit risk and reform of the standardized approach and the use of standardized methodology for operational risk. The possible discontinuation of the treatment of capital holdings in insurance subsidiaries would also imply an impact on capital allocation within French financial conglomerates. Legal risk with respect to market conduct and possible sanctions violations also remains for some banks. Nevertheless, regulators have publicly stated that these regulatory initiatives should not result in significantly higher capital requirements for banks.

⁴⁸ See “The decline in correspondent banking relationships: a case for policy action”, forthcoming Staff Discussion Note.

Figure 10. Regulatory Progress and Challenges

The liquidity coverage ratio has been strengthened in line with regulatory requirements ...

... while uncertainty on risk-weighted assets remains



Estimates of needed adjustment in French banks from various regulatory initiatives

Author	Estimate coverage	Impact	Portfolios considered 1/	Date of study
JP Morgan	Needed capital increase upon risk weight harmonization	2.5	C, R, M, S	4/15
Deutsche Bank	Reduction in Core Tier 1 ratio	-1.6	Credit, market and operational RWA; Danish compromise; deferred tax credits	6/15
Bank of Italy study	Sovereign exposures	-0.1	S	4/16
Banks' own estimates	CA notes it already complies; BNPP plans to issue around €10 billion a year by 2019; BPCE plans to meet TLAC through internal capital generation; SocGen notes need for additional issuance for TLAC of around €3.5-4 billion a year by 2019		Total Loss-Absorbing Capital (TLAC)	2/16

1/ C=corporate; R=retail; M=mortgage; S = sovereign. RWA = risk weighted assets.

Sources: ACPR, SNL, and IMF staff calculations.

30. An evolving financial landscape poses another challenge to the banks. Technological change is bringing new players and new ways of doing business, such as “fintech” firms which are pushing into specific activities while being less regulated than banks, blockchain technology, and crowd funding for smaller businesses.⁴⁹ The outcome of all these trends is difficult to foresee and will likely take many years to play out, but how banks position themselves now will likely have strong implications for how successful they are in the new landscape. French banks are being proactive, for example BNPP and *Société Générale* have opened digital banks, and banks are also evolving their mix of activities. For example, some are experimenting with the use of blockchain, *Credit Agricole* hosts a

⁴⁹ See Banque de France’s 2016 Financial Stability Review.

fintech accelerator, and BNP Paribas and *Société Générale* are reducing their investment banking activities, which could reflect efforts to conserve capital. Many are expanding into asset management or targeting increased insurance; *Société Générale* recently expanded its leasing activities in France.

31. An important element of successful adjustment is addressing relatively high costs and low yields, including adjusting the structure of costs and income. The main French and other EU G-SIBs rely more on net interest income than peers (Figure 11), suggesting some scope for increasing the share of fee income. Fees are already being increased, for example on current accounts, as noted in the December 2015 *Evaluation des Risques du Système Financier Français*. On the cost side, French banks pay higher deposit costs than peers, partly due to savings accounts with regulated rates which have not tended to fully adjust to changes in market rates. And, while French G-SIBs' overall cost to income ratios are not out of line with peers, the banks have been relatively slow to reduce the size of their workforce. Further, branch networks appear to be more numerous per population size relative to other countries, once also taking into account credit unions and financial cooperatives. Preferences for maintaining physical relations by segments of the population, as well as the historical role of one of the banks in also providing postal services in certain areas, help explain the relatively high figures. Further reductions have already been announced by all four G-SIBs, to be implemented in the coming three-four years.⁵⁰ Some of the banks' plans also include investments in information technology, to improve efficiency.

32. Despite the adaptations so far, consolidation efforts within the union have been more limited in scope, reflecting banks' concerns regarding remaining regulatory uncertainties as well as existing disincentives. The principal French banks see the universal banking model as a source of strength, and have made only marginal adjustments to their business lines since 2011. The banks have prioritized retail banking both domestically and internationally, with France's share accounting for almost 45 percent of net income in 2015, while revenues from international retail banking have also increased. Asset management has also increased, reaching almost 15 percent of net income in 2015. These changes have come at the expense of investment banking and specialized financing activities. Aggregate evidence suggests this pattern of change is broadly consistent with that of other EU significant banks.⁵¹ These banks have moved more toward retail banking and away from investment banking and wholesale lending activities (e.g. international leasing, trade finance and shipping). Nevertheless, overall these represent relatively minor movements, especially in the context of banking union, where more cross-border consolidation might have been expected. This seems due to two main factors – firstly, the large banks are not contemplating major cross-border acquisitions because this could imply the need for more capital add-ons based on size; and secondly, banking

⁵⁰ For example, *Société Générale* recently announced plans to reduce the branch network by 20 percent by 2020.

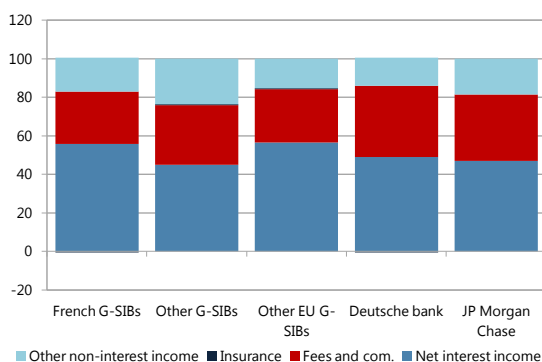
⁵¹ ECB's Financial Stability Review, May 2016, Chapter C. "Recent trends in euro area banks' business models and implications for financial sector stability".

union is not yet complete, with single resolution in course for implementation and a single deposit insurance scheme not yet in place.⁵²

Figure 11. Cost Indicators

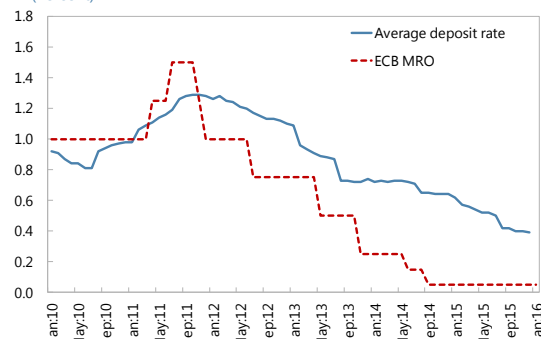
French banks rely less on fees and commissions than other G-SIBs.

Sources of Income, Average of 2010-2015



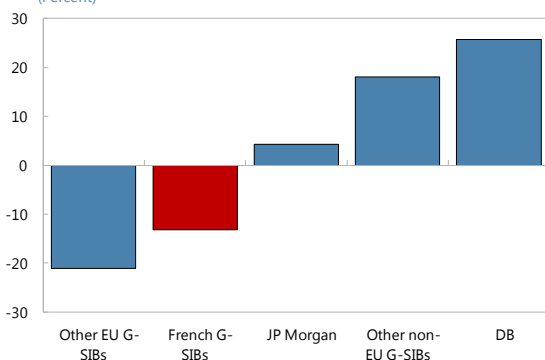
Deposit rates have been slow to adjust to monetary policy rates, squeezing banks' margins.

Average Deposit Rate in France and ECB Refinancing Rate (Percent)



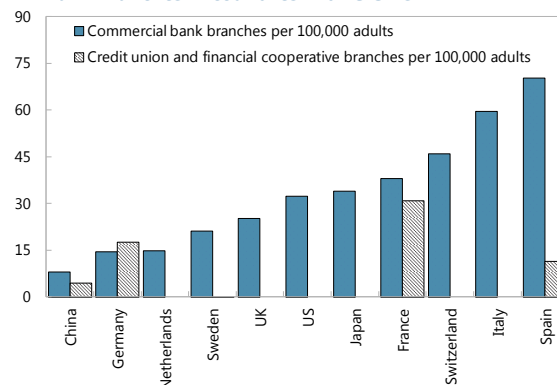
French G-SIBs have shed less staff than EU peers ...

Change in the Number of Employees at G-SIBs, 2008-15 (Percent)



And the branch network remains relatively wide, especially considering credit unions and financial cooperatives.

Bank Branches in countries with G-SIBs



Sources: Bankscope, SNL, and Financial Access Survey database.

⁵² In this context, the authorities have requested authorization from the European Commission for French banks to contribute up to 0.5 percent of eligible deposits rather than the 0.8 percent harmonized level agreed under the Deposit Guarantee Scheme Directive. This request is based on the (foreseen and allowed for under the Directive) condition that the sector is highly concentrated, with large banking groups which would be more likely to be resolved than liquidated in case of failure, therefore not requiring recourse to the deposit guarantee fund.

33. The above chapters suggest that French banks have come a long way since the crisis, but continued pressure from low interest rates and low growth and the challenges discussed above suggest that there is still some way to go.

- French banks are an important provider of credit to the economy, and may have helped absorb some of the financial stress rather than fully transmitting them to the real economy. This is likely due to certain practices such as fixed rate loans, which slow the transmission of interest rate shocks to credit aggregates. Further work to understand better financial conditions and the transmission mechanism to credit and real aggregates would be useful.
- French G-SIBs have strengthened capital and liquidity buffers, and their stock prices have been affected relatively less than most other global banks in various stress episodes. While they broadly meet regulatory requirements, they remain comparatively leveraged, with fragile profitability along with European peers, and exposed to severe wholesale funding shocks.
- Banks' margins will likely be squeezed by a prolonged period of low growth, inflation, and interest rates. Though fees associated with mortgage refinancing have boosted profits in the past couple of years, this effect is expected to taper off as the bulk of refinancing is completed and banks' income streams from those loans become solely reliant on lower interest income. Even with hedging in place, banks would remain vulnerable to a reversal in interest rates. Adaptation to this environment remains unfinished, suggesting scope for further cost reductions, branch closures, and possible consolidation within the banking union.
- Macroprudential authorities could help by closely monitoring banks' adaptation efforts to ensure financial stability is preserved, including that of less regulated non-bank entities which could be the conduit of more risky search for yield activities.

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