INTERNATIONAL MONETARY FUND

FRANCE

SELECTED ISSUES PAPER

August 2013

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INTERNATIONAL MONETARY FUND

FRANCE

SELECTED ISSUES

July 12, 2013

Approved By
The European Department

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EXTERNAL DEVELOPMENTS AND COMPETITIVENESS[1] [2]

Over the past decade, the current account has deteriorated from a surplus of 1.2 percent of GDP in 2002 to a deficit of about 2.3 percent in 2012, as France lost ground in goods trade and services recorded just a slight increase in global market shares. The slight improvement of the trade deficit seen in 2012 may suggest a change in trend, although it is still too early to determine. Past deterioration in export performance points to competitiveness weaknesses, rooted in significant rigidities in labor and product markets. On recent financial account movements, currency and deposits inflows registered historical highs while equity and debt securities lowered their contribution to the financing of the current account. Following past trends, FDI inflows and outflows shrank further in 2012, leaving France in a near balanced position in this category.

A.   Recent External Developments

1.   **Current Account** (Table 1, Figure 1). The current account in 2012 recorded a deficit of -2.3 percent of GDP, driven by a worsening income balance. The turnaround in the income balance—on an upward trend since 2009—likely reflect the significant drop in the rate of return on net portfolio holdings (debt and equity). The trade deficit in goods improved slightly in 2012 aided by strong sales in transport equipment, particularly of aeronautical products, while the surplus in the services trade account remained strong at 1.6 percent of GDP. The gradual deterioration of the current account over the last decade, reflects an increasingly negative contribution of goods (coupled with a reduced share in goods' volume in the current account, only partly offset by an improvement in the net trade in services. In this respect, the recent reorientation of exports towards dynamic markets in Asia, and away from sluggish demand in the euro area, is a positive development. From a saving-investment perspective, the weakening of the current account balance since the early 2000s reflects a deterioration in the net borrowing position of the government and non-financial corporations, only partly offset by the slight improvement in the net lending position of households and financial corporations altogether (text chart).

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[1] Prepared by Esther Pérez Ruiz.

[2] For a complete list of references please see page 30.

France - Net Lending/Borrowing by Sector
(In percent of nominal GDP, 2000-12)

Legend:
- General government
- Financial corporations
- Non-financial corporations
- Households
- Total economy
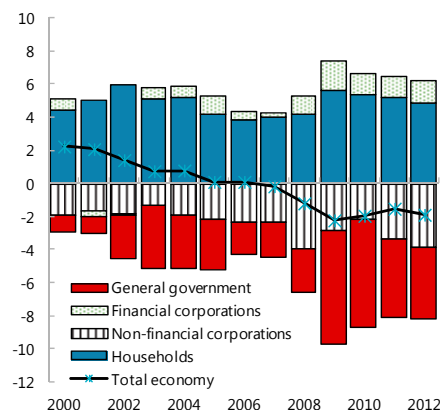
France - Saving - Investment Balance
(In percent of nominal GDP, 2000-2018)

Legend:
- Government net borrowing
- Nominal private saving
- Nominal private investment (inverted)
- Current account balance

Source: Haver Analytics; and Staff calculations.

Table 1. France - Balance of Payments, 2000–12 (in percent of GDP)

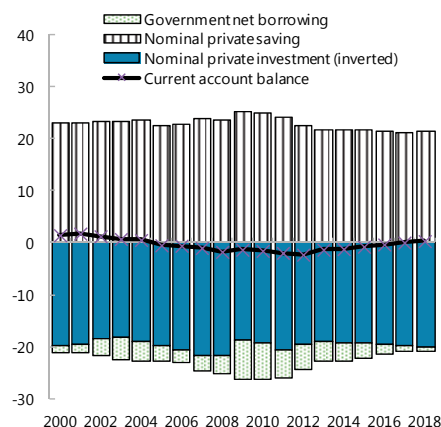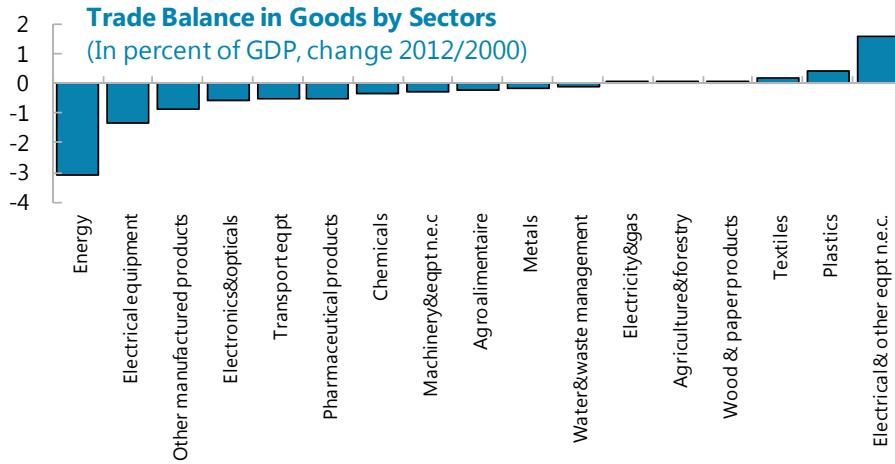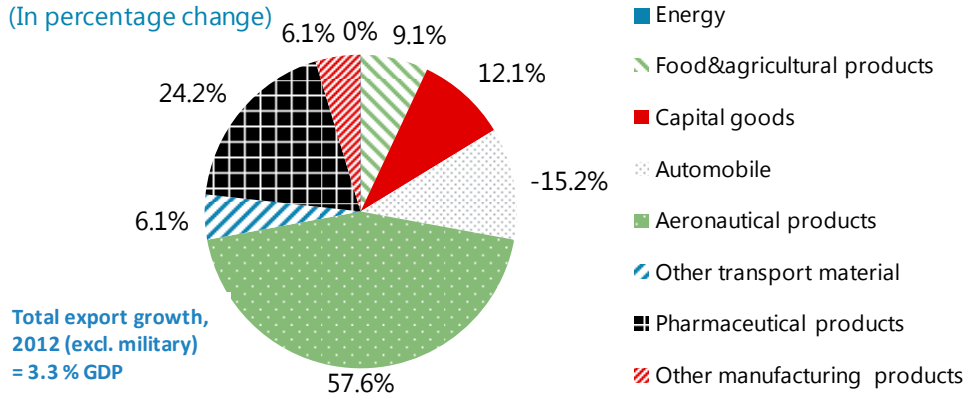|	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Current account	1.5	1.8	1.2	0.7	0.5	-0.5	-0.6	-1.0	-1.7	-1.3	-1.3	-1.8	-2.2
Net exports of goods	-0.2	0.3	0.5	0.2	-0.2	-1.3	-1.7	-2.2	-3.1	-2.3	-2.8	-3.8	-3.5
Exports of goods	22.4	22.0	21.1	20.2	20.5	20.6	21.5	21.2	21.2	18.4	20.2	21.2	21.5
of which:													
Transport Equipment	4.8	5.2	4.9	4.9	4.9	4.8	4.9	4.7	4.5	3.9	4.4	4.3	4.6
Computers, Electrical & Other Mach/Eqpt n.e.c.	5.7	5.3	4.9	4.4	4.4	4.4	4.8	4.5	4.3	3.6	3.9	4.1	4.1
Chemicals, Products & Pharmaceuticals	2.5	2.4	2.4	2.3	2.3	2.4	2.5	2.5	2.5	2.2	2.4	2.6	2.6
Food, Beverages & Tobacco	1.9	1.9	1.9	1.8	1.8	1.7	1.8	1.8	1.9	1.7	1.9	2.0	2.1
Imports of goods	-22.7	-21.7	-20.6	-20.0	-20.7	-21.9	-23.2	-23.4	-24.3	-20.7	-23.0	-25.0	-25.0
of which:													
Computers, Electrical & Other Mach/Eqpt n.e.c.	6.4	5.8	5.2	4.9	5.1	5.2	5.5	5.3	5.2	4.4	5.0	5.2	5.0
Transport Equipment	3.4	3.7	3.6	3.5	3.5	3.7	3.8	4.0	3.9	3.5	3.7	3.8	3.8
Mining & Quarrying	1.8	1.7	1.5	1.6	1.8	2.3	2.6	2.4	3.2	2.0	2.3	2.9	2.9
Chemicals, Products & Pharmaceuticals	2.1	2.0	1.9	1.9	1.9	2.0	2.1	2.1	2.1	1.8	2.0	2.2	2.2
Net exports of services	1.3	1.1	1.1	0.8	0.7	0.7	0.7	0.8	0.9	1.0	1.1	1.6	1.6
Exports of services	6.2	6.2	6.1	5.7	5.6	5.7	5.7	5.8	5.8	7.3	7.7	8.5	8.3
of which:													
Travel	2.5	2.4	2.4	2.2	2.2	2.1	2.1	2.1	2.0	1.9	1.8	2.0	2.1
Transportation	1.4	1.3	1.3	1.2	1.3	1.3	1.4	1.5	1.4	1.4	1.7	1.7	1.7
Imports of services	-4.9	-5.0	-5.0	-4.9	-4.9	-5.0	-5.0	-5.0	-5.0	-6.3	-6.5	-6.9	-6.7
of which:													
Travel	1.7	1.7	1.6	1.6	1.5	1.5	1.4	1.5	1.4	1.5	1.5	1.6	1.5
Transportation	1.3	1.3	1.2	1.2	1.5	1.5	1.5	1.5	1.5	1.5	1.7	1.8	1.8
Income balance	1.5	1.5	0.6	0.8	1.1	1.4	1.7	1.7	1.7	1.7	2.0	2.3	1.5
Compensation of employees	0.5	0.5	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.66	0.73	0.00
Investment income	0.9	0.9	0.1	0.3	0.6	0.9	1.2	1.2	1.2	1.2	1.32	1.52	0.70
Direct investment	0.7	0.9	0.3	0.6	0.9	1.2	1.5	1.3	1.3	1.4	1.87	1.94	1.58
Portfolio investment	0.3	0.1	-0.1	-0.3	-0.2	-0.1	0.0	0.4	0.4	0.0	-0.45	-0.45	-0.90
Other investment	0.0	-0.1	-0.1	0.0	-0.1	-0.2	-0.3	-0.5	-0.5	-0.2	-0.10	0.04	0.02
Current transfers	-1.1	-1.1	-1.0	-1.1	-1.1	-1.3	-1.2	-1.2	-1.3	-1.8	-1.6	-1.8	-1.8
Capital and financial account	-2.2	-2.1	-1.1	0.1	-0.4	-0.1	1.4	1.7	1.0	1.2	1.3	2.7	3.6
Capital account	0.1	0.0	0.0	-0.5	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Financial account	-2.3	-2.1	-1.1	0.6	-0.5	-0.1	1.4	1.6	0.9	1.2	1.3	2.7	3.7
Total Asset Transactions, Net	-20.5	-16.8	-12.0	-14.7	-19.7	-29.6	-26.6	-27.7	-7.3	-4.6	-7.6	2.4	2.1
Total Liability Transactions, Net	18.2	14.7	10.9	15.3	19.3	29.5	28.0	29.3	8.3	5.8	9.0	0.3	1.6
Direct investment	-10.1	-2.7	-0.1	-0.6	-1.2	-1.4	-1.7	-2.6	-3.2	-3.2	-1.2	-0.8	-0.5
Direct investment abroad	-13.4	-6.5	-3.5	-3.0	-2.8	-5.4	-4.9	-6.4	-5.5	-4.1	-2.5	-2.1	-1.4
Direct investment in France	3.3	3.8	3.4	2.4	1.6	4.0	3.2	3.7	2.3	0.9	1.3	1.4	1.0
Portfolio investment	2.8	1.6	-0.7	0.4	-3.2	-0.8	-6.0	-6.4	1.3	12.8	6.1	11.4	1.9
Equity securities	1.4	-0.4	-1.5	-1.5	-1.5	0.6	1.0	-1.9	-2.6	1.0	-0.9	2.2	-1.1
Debt securities	1.4	2.0	0.8	1.9	-1.7	-1.4	-7.0	-4.5	3.9	11.9	7.0	9.2	3.0
Bonds and notes	1.1	2.2	1.6	2.7	-1.9	-1.8	-6.2	-5.5	4.4	9.4	5.6	8.4	5.9
Money market instruments	0.2	-0.2	-0.9	-0.8	0.2	0.4	-0.8	0.9	-0.5	2.5	1.4	0.8	-2.9
Financial derivatives	0.4	0.2	0.4	-0.4	0.3	0.3	0.2	2.2	-0.8	-0.9	1.4	0.7	0.7
Other investment	4.5	-1.6	-0.9	1.4	3.8	1.4	9.5	8.5	3.3	-7.8	-4.6	-9.0	1.7
Trade credits	0.3	0.0	-0.2	-0.1	0.3	0.5	0.3	-0.1	0.3	0.3	0.2	0.3	0.1
Loans	4.2	-1.6	-0.9	2.1	3.7	22.6	19.7	12.3	-1.6	-12.9	-3.3	-5.0	-4.0
Currency and deposits	0.0	0.0	0.2	-0.6	-0.2	-21.6	-10.5	-3.7	4.5	4.8	-1.4	-4.2	5.9
Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.3
Reserve assets	0.2	0.4	0.3	-0.1	-0.2	0.4	-0.5	0.0	0.4	0.2	-0.3	0.3	-0.2
Errors and omissions	0.7	0.4	-0.1	-0.8	-0.2	0.5	-0.9	-0.7	0.8	0.1	0.0	-0.9	-1.4

Source: IMF, Balance of Payments Statistics; and Direction Générale des Douanes et Droits Indirects for goods exports and imports.

Figure 1. France - Developments in Goods Trade

Trade Balance in Goods by Sectors
(In percent of GDP, change 2012/2000)

Sectors (left to right): Energy, Electrical equipment, Other manufactured products, Electronics&opticals, Transport eqpt, Pharmaceutical products, Chemicals, Machinery&eqpt n.e.c, Agroalimentaire, Metals, Water&waste management, Electricity&gas, Agriculture&forestry, Wood & paper products, Textiles, Plastics, Electrical & other eqpt n.e.c.

Contributions to Goods' Exports Growth by Sectors, 2012
(In percentage change)

6.1% 0% 9.1%
24.2%
12.1%
-15.2%
6.1%
57.6%

Total export growth, 2012 (excl. military) = 3.3 % GDP

- Energy
- Food&agricultural products
- Capital goods
- Automobile
- Aeronautical products
- Other transport material
- Pharmaceutical products
- Other manufacturing products

Contributions to Goods' Export Growth by Geographical Areas, 2012
(In percentage change)

6.4%
21.5%
46%
24.8%
-5.4% 6.7%

Total export growth, 2012 (excl. military) = 3.3 % GDP

- EU
- Non-EU Europe
- America, North
- America, South
- Middle East
- Asia
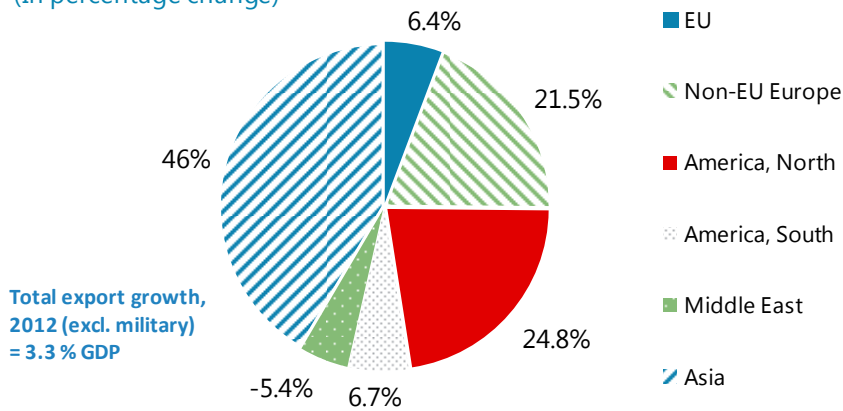
Source: Direction Générale des Douanes et Droits Indirects

2.   **Financial account**. In 2012, the financial account recorded a surplus of 4.8 percent of GDP.

- *Portfolio and other investment*: Reflecting safe-haven effects, the surplus in 2012 was marked by a strong improvement in other investment inflows (in the form of currency and deposits), which reached 1.7 percent of GDP (or around 45 percent of the overall financial account surplus). The foreign holding of French bonds, and in particular treasury bonds, contributes the most to the surge of portfolio inflows. It is noteworthy that France has played an intermediary role in gross financial flows between the euro area and the rest of the world: net inflows from non-EU inv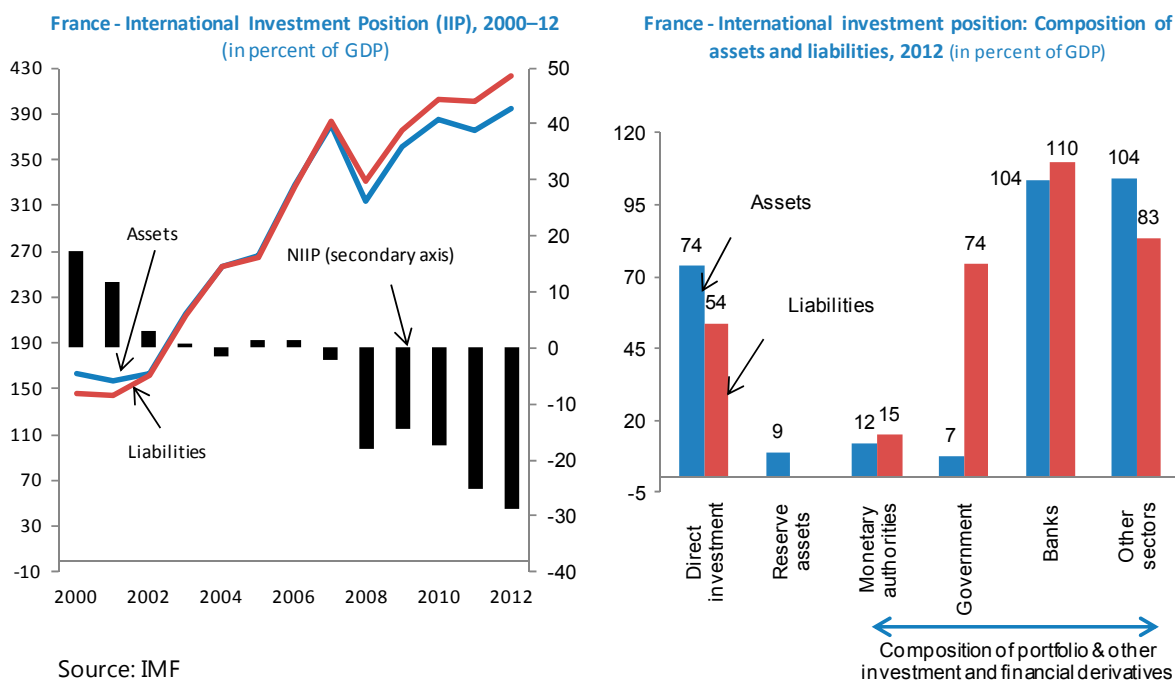estors are mainly directed towards treasury bonds, hence contributing to the financing of the government deficit; meanwhile, French savings are channeled to the euro area deficit countries via inter-bank loans or bonds.

- *Foreign Direct Investment (FDI):* In a context characterized by a contraction in global FDI flows (by 14 percent from 2011), 2012 also saw in France a continuation of the decline in net FDI that started in 2008. This was due to declines in both FDI inflows and outflows. Net FDI stood at -0.5 percent of GDP, down from -3.2 percent of GDP in 2008. FDI in France fell from 3.7 percent of GDP in 2007 to 1 percent of GDP in 2012, faring poorly against the 2000-07pre-crisis average of 3.2 percent of GDP. FDI abroad dropped from 6.4 percent of GDP in 2007 to 1.4 percent of GDP in 2012—the lowest level over the past 15 years. The main factor underlying FDI's decline abroad during the past year is the repatriation of funds from foreign subsidiaries back to the French parent company, which could reflect attempts to strengthen their capital, to deleverage, or to restructure operations. Despite recent unfavorable developments, France still features amongst the top six investing and recipient FDI countries, with outward and attracted FDI each accounting for around 4.5 of global flows, respectively. In 2012, 44 percent of global FDI flows were hosted by China, the United States, Brazil, the United Kingdom, and France; and 58 percent of global FDI outflows were performed by the United States, Japan, Belgium, the United Kingdom, Germany, China and France.

3.   **International Investment Position** (IIP). France's net IIP turned negative in 2007 and dropped to almost -29 percent of GDP by the end of 2012. About 2/3 of the deterioration in the IIP since 2007 was due to valuation losses, which could be reversed in a stronger global recovery. The IIP is being supported mainly by a net positive position in direct investment and reserve assets (about 20 and 9 percent of GDP, respectively), but these are more than offset by the combined negative net position of the other components (portfolio investments, other investments, and financial derivatives). The bulk of France's net negative position is due to the government's net liabilities which have been accumulating in 2010-12. Small net positions may mask large gross positions. This is the case for the banking sector, which at the end of 2012 had a net position of 0.5 percent of GDP but gross assets and liabilities of 104 and 110 percent of GDP, respectively,

consistent with the G-SIFI status of major French banks.[3] Reflecting the shedding of assets, the net IIP of banks improved slightly compared to 2013 (by 2.3 percentage points of GDP).

France - International Investment Position (IIP), 2000–12 (in percent of GDP)

France - International investment position: Composition of assets and liabilities, 2012 (in percent of GDP)

Source: IMF

B. A Closer Look at Services

4.   **France is a services economy** (text table; and chart)**.** Over 2001-08, the France economy grew at an average rate of 1.6 percent per year. Services contributed 1.4 percentage points, against 0.2 percentage points in manufacturing and construction, and a zero contribution from the primary sector. Services sectors accounted for around 79 percent of total value added in 2012—up from 72 percent in 1995 and 9 percentage points above the average of Germany, Italy, and Spain. Within services, specialization is concentrated on public administration and social services, business activities, and the real estate.
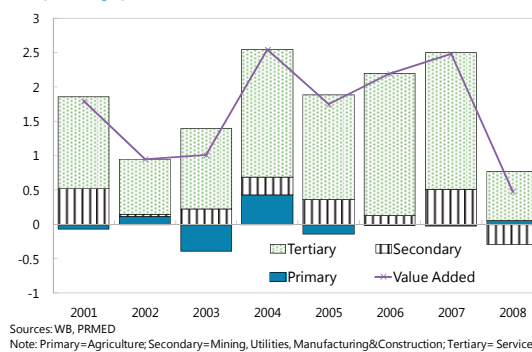
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[3] See "French Banks: Business Model and Financial Stability,' By A. Sy, in France: Selected Issues, IMF Country Report No. 13/3 (January 2013).

**Big 4 Euro Area Countries - Share of Gross Value Added of Total Economy**

	France	Germany	Italy	Spain
	2012	2012	2012	2012
Wholesale and Retail Trade, Transport, Acco	18.3	16.0	20.7	25.5
Information & Communication	4.5	3.9	4.1	4.3
Financial Insurance	4.8	4.0	5.3	4.3
Real Estate	13.2	11.4	14.1	8.1
Professional, Science & Tech	12.4	10.7	9.0	7.6
Public Admin, Education & Social Work	22.6	18.0	16.8	17.7
Arts, Entertainment & Recreation	3.4	4.5	3.8	3.8
Services Sector	**79.2**	**68.4**	**73.8**	**71.3**
Agriculture, Forestry & Fishing	2.0	1.0	2.0	2.7
Industry excl Construction	12.5	26.1	18.3	16.9
Construction	6.3	4.6	5.9	9.1

Source: Eurostat.

Note: The classifications listed add up to the total NACE.

France - Value Added Growth, Contributions by Sector
(In percentage points)

Sources: WB, PRMED

Note: Primary=Agriculture; Secondary=Mining, Utilities, Manufacturing&Construction; Tertiary= Services.
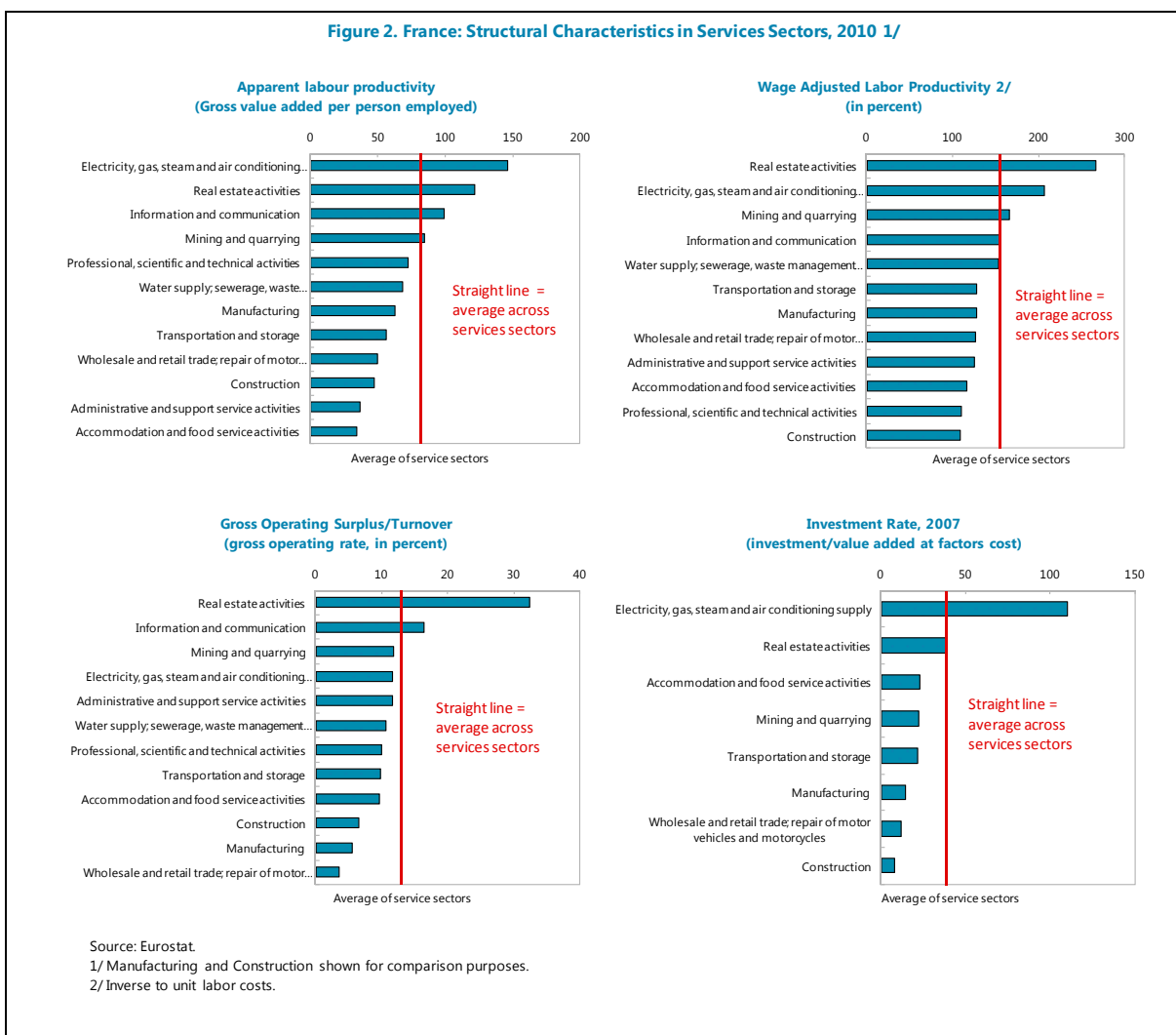
5. **External developments arising from an increasing specialization towards services have been mixed**. After a decrease up to 2005, services' export market shares and net trade rebounded slightly, which helped finance the deterioration in the goods balance. The balances of business services and royalties grew particularly rapidly. However, other services (transportation, computer and information services) showed little dynamism or even recorded a deficit position.

Export Market Share of Services
(2005=100)

Source: Haver Analytics.
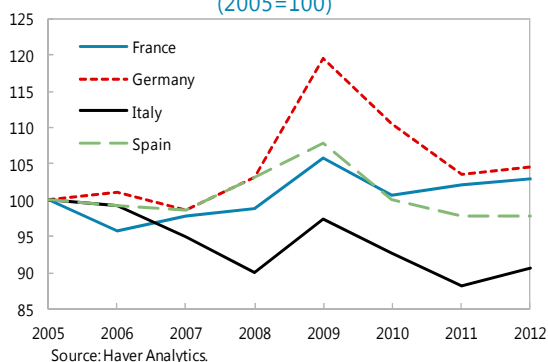
Services Balance by Sectors
(In percent of nominal GDP, 2000-12)

Sources: IMF, Balance of Payments.
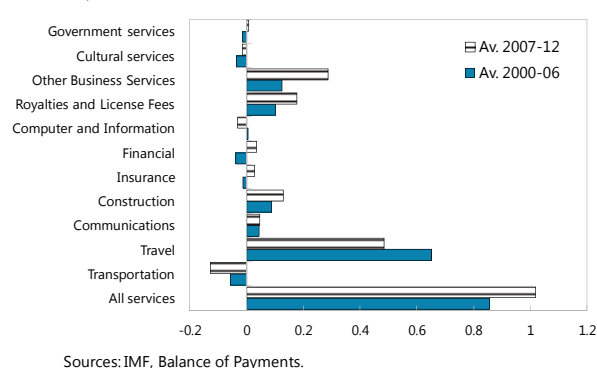
6. **From a structural perspective, the economic performance of services activities has been comparatively poor**. Relative to manufacturing, a number of services sectors feature comparatively lower productivity levels, higher unit labor costs and rents, and inadequate investment rates (Figure 2).

- *Productivity and unit labor costs*: The shortfall in labor productivity levels is substantial (and unit labor costs are particularly high) in wholesale and retail trade, administrative and support services, accommodation and food, transportation and storage, and professional services. To some extent, higher unit labor costs in non-tradable sectors is an equilibrium phenomenon in a situation where wages reflect economy-wide standards, while the potential for productivity gains is limited (e.g., hospitality business).

- *Profitability*: The average gross operating rate in services reached nearly 13 percent of total turnover in 2010, against 5.5 percent in manufacturing activities. There are nevertheless considerable differences in profitability across sectors (ranging from around 3.5 in wholesale and retail trade to about 32 percent in real estate activities). While the wide dispersion in profitability ratios may be a reflection of sector-specific capital intensities and technological progress, high profits, when coupled with comparatively low productivity levels, may also be an indication of competition-constraining regulation.

- *Investment ratios*[4]: At around 100 percent of value added, electricity and gas supply registered the highest investment rates amongst services. Investment dynamism lagged well behind in other sectors, such as wholesale and retail trade, and construction.

Figure 2. France: Structural Characteristics in Services Sectors, 2010 1/

Source: Eurostat.
1/ Manufacturing and Construction shown for comparison purposes.
2/ Inverse to unit labor costs.

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[4] Data availability on investment ratios is more limited than for the other structural indicators.

7. **Services sectors induce significant strong forward-linkage effects to the rest of the economy**. Economic sectors differ in terms of their incidence on economic activity. Input-output analysis allows for a classification of sectors according to their backward/forward linkages they create with other branches via intermediate consumption. For each sector, backward (forward) linkages can be measured as the proportion of intermediate consumption to the gross output of the sector demanded from (supplied to) other sectors. Production in sectors inducing strong backward linkages tends to stimulate economic activity through higher demand of inputs from other sectors. By contrast, branches whose production serve as inputs to others can play an important role in stimulating (internal and external) demand through their moderating impact on other sectors' costs. Market services sectors tend to display above-average forward linkages and below-average backward linkages (text chart).

France - Services' Linkage Effects to the Rest of Economy
(Mid-2000s)
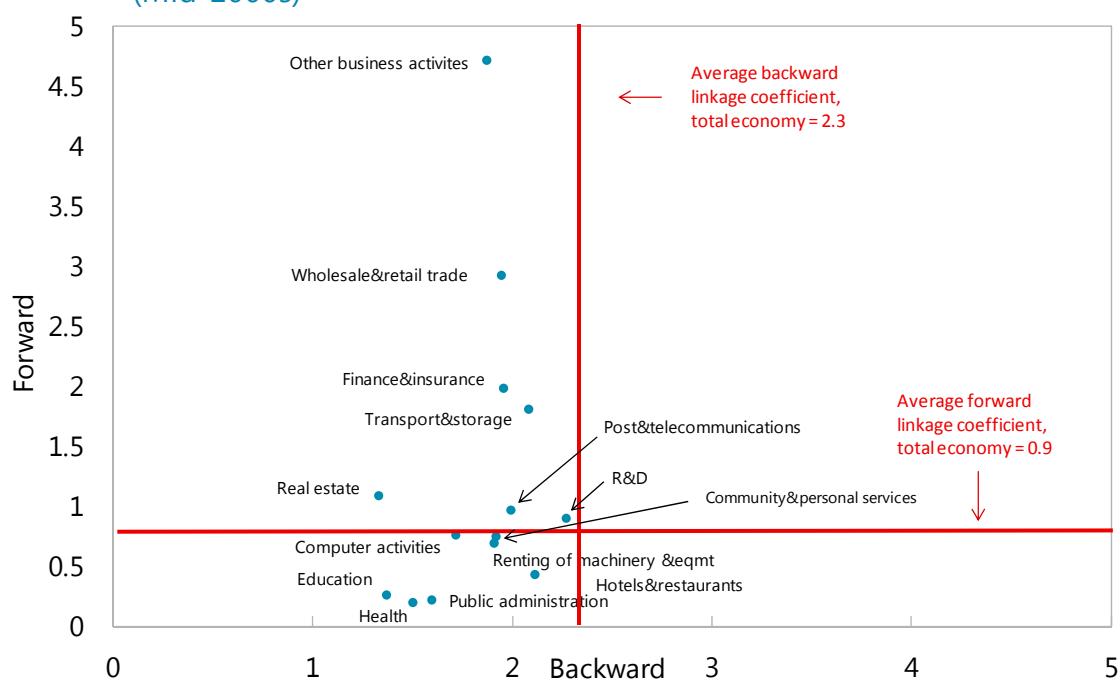
Sources: OECD Input-Output table for France; and Staff calculations.
Note: Chart shows services branches only. Average forward and backward linkages are averages across all economic sectors.

8. **By virtue of their significant forward-linkage effects, the price moderating effect of competition-enhancing reforms in services is substantial**. Using the Input-Output table for France, the impact of a cost reduction in services is calculated in the following manner:

$$\delta P = (I-A)-1\ \delta V$$

where P denotes the (n*1) the column vector of sectoral prices (with n the total number of economic sectors); I is the (n*n) identity matrix; A is the (n*n) matrix of technical coefficients; V is the (n*1)

column vector of value added per unit of gross production for the n sectors of the economy; and δ stands for (percentage) changes.

9.   The simulation presented in this paper assumes no input substitutability and that increases in costs are fully transmitted to output prices. Following a coordinated 10 percent cost reduction in all services sectors and construction, aggregate prices are estimated to fall by around 7.5 percent. When the cost reduction shock is conducted in each services sector separately, we find that the largest reductions on aggregate prices are induced by other business services; real estate activities; wholesale and retail trade; finance and insurance; and transport and storage (Table 2).

Table 2. Impact on Aggregate Prices of a Sector-by-Sector 10 percent Reduction in Services Costs	
(Deviations from baseline, in percent)	
Other business activities	-1.42
Real estate activities	-0.98
Wholesale and retail trade; repairs	-0.93
Finance and insurance	-0.63
Transport and storage	-0.52
Health and social work	-0.45
Public admin. and defence; compulsory social security	-0.43
Construction	-0.39
Education	-0.34
Other community, social and personal services	-0.29
Computer and related activities	-0.27
Post and telecommunications	-0.26
Electricity, gas and water supply	-0.19
Hotels and restaurants	-0.18
Renting of machinery and equipment	-0.12
Research and development	-0.12
Source: OECD Input-Output table for France and Staff calculations.	

10.   Progress in opening up services to competition has fallen short of the ambitions of the EU Services Directive. The objective of the EU Services Directive adopted in 2006 was to release the untapped growth potential of services markets in Europe by removing legal and administrative barriers to trade in services. Whereas the implementation of the Directive has strengthened competition in a number of sectors in France, such as information and telecommunications, several others, including wholesale and retail distribution, transportation, and professional services, remain protected. The principles of "necessity, proportionality, and public interest" embedded in the Directive have given EU member countries considerable latitude in how strictly to implement the directive. As suggested by the simulation results presented above, down-stream producers relying

on these services as inputs would benefit from lower costs, generating trickle-down effects on growth throughout the economy. Consumers' purchasing power would also be enhanced by the price moderating effect of liberalization measures.

C. External Assessment

11.   Methodology. The assessment of external developments relies on the External Balance Assessment (EBA) methodology, developed by the IMF. The EBA results discussed hereafter are based on an update using spring 2013 World Economic Outlook (WEO) data. EBA comprises three complementary approaches: the current account (CA) method, the real effective exchange rate (REER) method, and the external sustainability (ES) method.

- The CA method is a panel-regression based analysis that decomposes the current account into a norm and a current account gap, in turn equal to the sum of a policy gap and an unexplained component (regression residual). The norm is the level of the current account at staff's recommended policies (on fiscal policy, interest rates, private credit, social protection, capital controls, and reserve accumulation). Any deviations from benchmark policies are captured by the policy gap.

- The REER approach, also panel-regression based, estimates the exchange rate misalignment with a breakdown between policy gap and unexplained component. Regressors for each country are defined relative to the values of their trading partners, using the same country weights as in the actual REER. As a reflection of the expenditure-switching role of REER movements, some rough proportionality can be expected between the coefficients of the separate CA and REER regressions. Still, theory implies that such correspondence is not exact, as some factors may influence the REER without any clear implication for the CA.

- The ES method is model free and calculates the current account gap as the difference between the medium-term current account (that is, the WEO projection for 2018) and the net-foreign-asset (NFA) stabilizing current account. The NFA/GDP benchmark for France is set at the 2011 level.

12.   CA method. This approach suggests a current account gap of some -2.5 percent of GDP.[5] The latter is the result of the difference between a norm (where policies are at recommended values) of -0.2 percent of GDP and the cyclically-adjusted, 2012 current account balance of -2.7 percent of GDP. The current account gap has two components: policy gaps (that is, actual policies deviating from recommended policies) contributed -0.4 percentage points of GDP, while the regression residual contributed 2.1 percentage points of GDP. The policy gap is mostly explained by actual spending on social protection being significantly higher than the recommended benchmark. The large residual suggests that country-specific factors (which are difficult to capture in worldwide

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[5] The CGER approach yields a somewhat different CA account gap of +1.4 percent of GDP.

panel regressions as the ones conducted by the EBA methodology) are at play. As discussed in this report, these factors could include heavy labor taxation, small firm structures, and rigid labor and product market regulation, all having a bearing on the capacity of French enterprises to innovate and remain competitiveness in international markets.

13. REER method. This approach estimates an overvaluation of the (CPI-based) real effective exchange rate of around 1 percent, relative to medium-term fundamentals.[6]

14. ES method. Over the medium term, the current account would record a modest positive gap of about 0.3 percent of GDP. The benchmark current account that would stabilize

France - External Balance Assessment, Current Account
(In percent of GDP) 1/

Legend:
- Policy gap
- Estimated CA, current policies
- Regression residual
- Norm
- Cyclically adjusted 2012 CA

Total explained by regression

Total CA gap

Sources: IMF staff calculations
1/ Results based on data as of April 2013; estimations are adjusted to ensure multilteral consistency

NFA in percent of GDP at the end-2011 level is -0.7 percent of GDP. This benchmark is compared with the 2018 WEO projection for the current account (adjusted to ensure closed output gaps) of -0.4 percent of GDP.

15. Overall assessment. On staff projections, the trade and current account deficits should gradually decline over time (to -1.8 and 0 percent of GDP by 2018, respectively) aided by moderate growth and imports. Market shares are projected to remain broadly stable over the medium term. This assumption already takes into consideration France's improved export performance over the last couple of years, as well as the impact of recent actions to reduce the labor tax wedge and to reform the labor market. These important steps towards addressing the competitiveness challenge notwithstanding, the external environment is changing rapidly with euro area periphery countries undertaking far-reaching structural reforms and registering large competitiveness gains. From a saving-investment balance perspective, the improvement of the current account over the medium term is driven by fiscal consolidation, with a partial offset from lower private sector net saving (saving minus investment).

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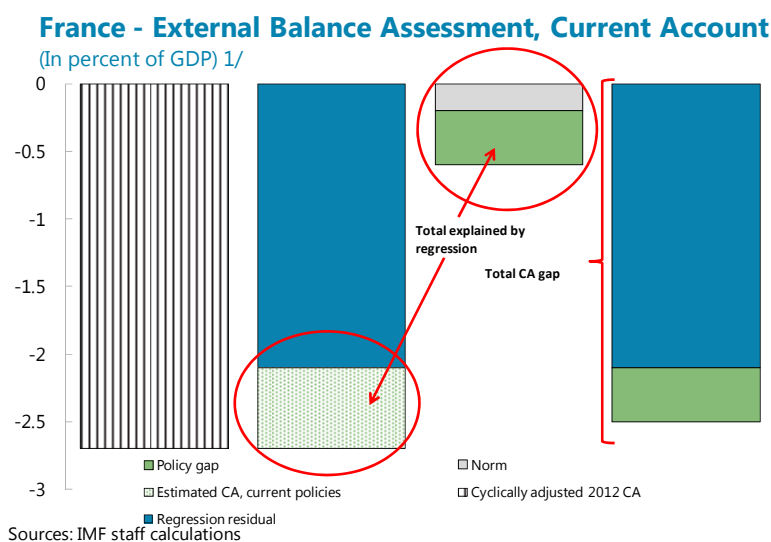
[6] This estimated overvaluation is smaller than the one implied by the current account EBA methodology, under standard exchange rate elasticity assumptions.

POTENTIAL GDP ESTIMATES FOR FRANCE: PRUDENT (AND CALLING FOR ACTION)[1]

A. Introduction

1.   The Fund has been recommending that countries adopt a structural approach to fiscal policy. The recently adopted EU Fiscal Compact requires countries to incorporate structural targets as part of their fiscal rules, against which fiscal performance will be evaluated by the European Commission (EC). However, implementation of structural targets rests on accurate estimation of potential output and potential growth.

2.   Estimates can vary considerably depending on assumptions and estimation techniques. Every method requires a number of arbitrary choices, either at the level of parameters (in statistical techniques) or the underlying economic theory (in structural approaches). As a result, real time estimates of potential growth are often subject to significant revisions. By way of illustration, in hindsight, the EC and the Fund would have overestimated France potential GDP growth over 2005-11 by roughly the same amount—0.2 percentage points on average. The largest downward revisions (of around 0.6-0.7 percentage points) were recorded in 2007 and 2011.

France - Revisions in GDP Potential Growth
(2005-2011)

European Commission
(Annual growth rates)

WEO
(Annual growth rates)
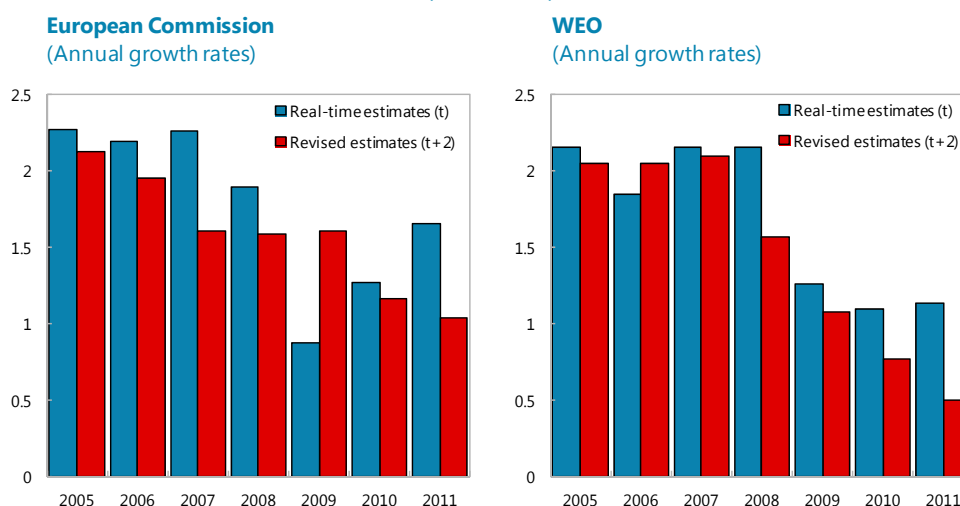
Source: AMECO and WEO databases; and Staff calculations.
Note: The real-time and revised estimates are those produced in the Spring of years t and t+2 respectively.

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[1] Prepared by Jaromir Benes and Esther Pérez Ruiz.

3. **This paper has a twofold aim**. First, we update France's potential GDP estimates provided by Cheng (2011). Second, looking forward, we relate the implementation of a more structural approach to fiscal policy to the robustness to new data of alternative de-trending methods.
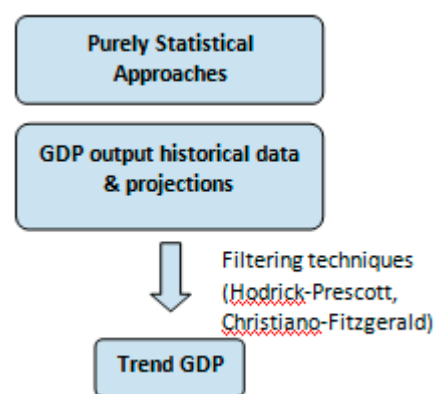
4. **The main lesson emerging from the analysis is that, while multivariate techniques improve robustness relative to univariate filters, they are also subject to revisions as new information becomes available.** This means that, despite every effort to produce reliable, real-time potential growth estimates, uncertainty will inevitably remain a fact of life for policy makers. To make fiscal recommendations time proof, estimates for potential output should therefore take this uncertainty into account.

5. **The rest of the paper is laid out as follows**. Section II provides an overview of the methodologies covered, be they purely statistical or economic-based. Section III presents the estimates and projections of potential output for France during 1980-2018. Section IV calls for prudence in the use of potential output to inform fiscal advice. Section V concludes.

B. Cycle Extraction Methods

6. **This study focuses on four de-trending methods**. The Hodrick-Prescott and Christiano-Fitzgerald filters are purely statistical. The "production function" and "gaps" approaches combine filtering techniques with economic theory, therefore establishing a meaningful link between potential output and their underlying factors. This puts a premium on achieving consensus on the modeling and estimation methods to be employed. A brief description of each method is provided below.

- **The HP filter** (Hodrick and Prescott, 1997): The trend GDP is the result of minimizing the distance between the trend and the original series as well as the curvature of the trend series. The exact trade-off between the two goals is judgmental. The filter suffers from asymmetry: with the exception of the central values, HP-filtered series are time-displaced compared to the underlying cycle, with revisions being particularly large for the most recent observations.

- **The CF filter** (Christiano and Fitzgerald, 1999): This filter passes (rejects) frequencies within (outside) a certain range. It belongs to the class of band-pass filters, which can be either symmetric or asymmetric. Symmetric variants (e.g. Baxter-King filter) are free from phase shifts but this comes at the expense of series trimming. In contrast, CF uses the whole time series. CF outperforms the BK filter real time.

Purely Statistical Approaches

GDP output historical data & projections

Filtering techniques (Hodrick-Prescott, Christiano-Fitzgerald)

Trend GDP

- **The PF approach** (for EU countries see Denis *et al.*, 2010): Instead of making statistical assumptions on the series properties of trends, PF makes assumptions based on economic theory, in particular the functional form of the production technology, trend technical progress (TFP), and the utilization of production factors. Below is a stylized representation of the PF methodology as currently applied by the EC (in collaboration with EU countries).
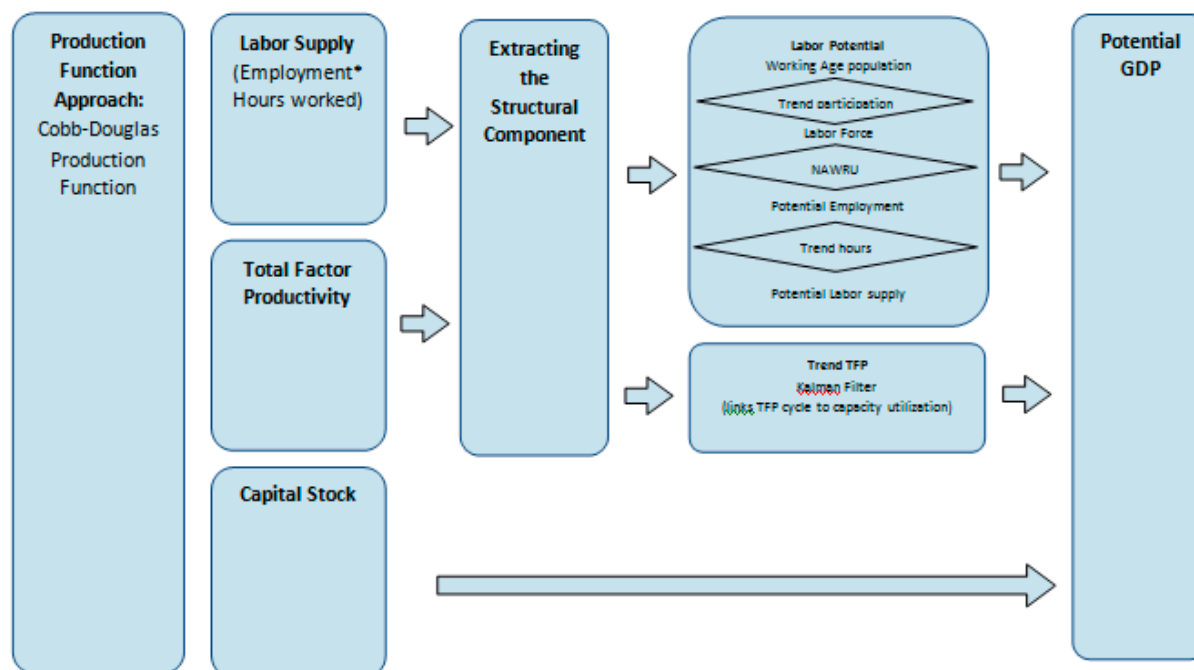
- **The gaps approach** (Benes *et al.*, 2010): To extract trend components, this method focuses on imbalances-type equations, specifically a Phillips curve, an Okun's law, and a capacity utilization equation. Trend GDP, capacity utilization and the NAWRU are then made consistent through a multivariate filter. For the purposes of this paper, the overall estimate for potential GDP growth calibrated through the gaps approach is subsequently distributed across labor, capital, and total factor productivity via standard growth accounting techniques.
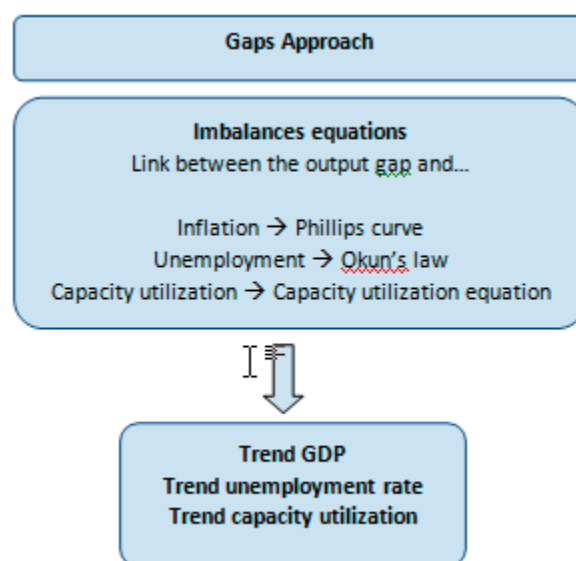
C. Results

7.   Potential GDP growth in France declined markedly as a result of the crisis (Table 1; Figure 1). The downward trend is evident across methodologies. Potential GDP grew at an average

Table 1. Potential GDP Growth, 1992-2012				
	Hodrick-Prescott	Christiano-Fitzegarld	Production Function, EC	Gaps Approach	Average across Methodologies
1992-2000	2.0	2.0	1.9	1.7	1.9
2001-2007	1.7	1.8	1.8	1.9	1.8
2008-2012	0.5	0.4	1.1	0.9	0.7
Source: Staff				

rate of around 1.9 percent during the 1990s and 2000s, and decelerated to about 0.7 over 2008-12.

8.   Economic approaches can identify the channels through which the crisis has influenced potential output. By the gaps approach, around ¾ of the shortfall in potential growth during 2008-12 relative to 1992-2007 would come from a declining TFP, with labor and capital contributing about evenly to the remaining shortfall (Figure 2).

- *TFP*: The crisis would have aggravated the capacity of France firms to innovate and remain competitive both in domestic and abroad. The production switch initiated in the past from the relatively high-TFP growth manufacturing sector towards services would also weigh down on overall productivity (see, e.g., Molagoda and Perez-Ruiz, 2011).

- *Labor*: A somewhat less dynamic labor force, together with a higher rate of structural unemployment, would have pushed the labor contribution downwards. Indeed, Bonthius *et al*. (2013) provide recent evidence of an outward shift in France's Beveridge curve and a higher structural unemployment.

- *Capital*: Lower capital accumulation would reflect heightened risk aversion amongst entrepreneurs, weak demand prospects, as well as more cautious bank lending.

Figure 1. France: Potential GDP Across Methodologies
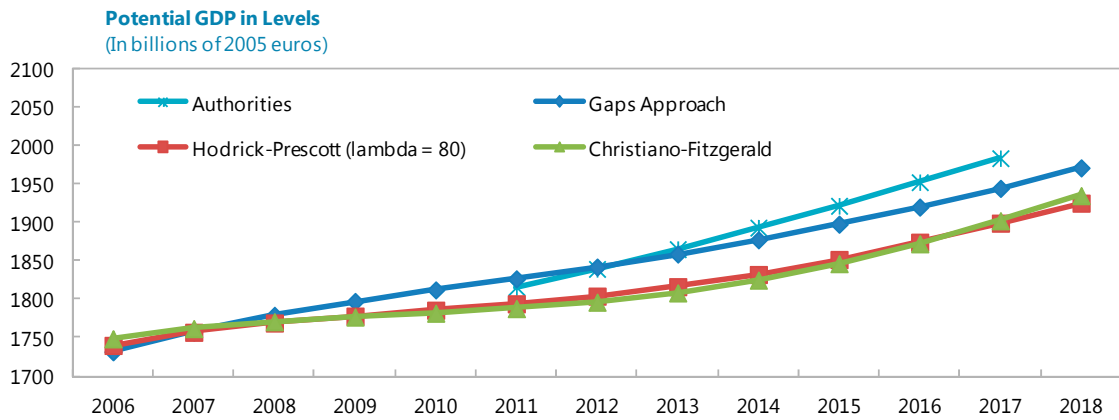
Potential GDP in Levels
(In billions of 2005 euros)

Authorities — Gaps Approach — Hodrick-Prescott (lambda = 80) — Christiano-Fitzgerald

Sources: European Commission (EC), France Stability Program (SP), and Staff.

Potential GDP Growth
(Annual Percentage Change)

Authorities — Gaps Approach — Hodrick-Prescott (lambda = 80) — Christiano-Fitzgerald

Sources: European Commission (EC), France Stability Program (SP), and Staff.

Output Gap
(Percent of Potential GDP)

Authorities — Gaps Approach — Hodrick-Prescott (lambda = 80) — Christiano-Fitzgerald

Figure 2. France: Factors Underlying Potential GDP Growth, Gaps Approach

Source: Staff calculations.
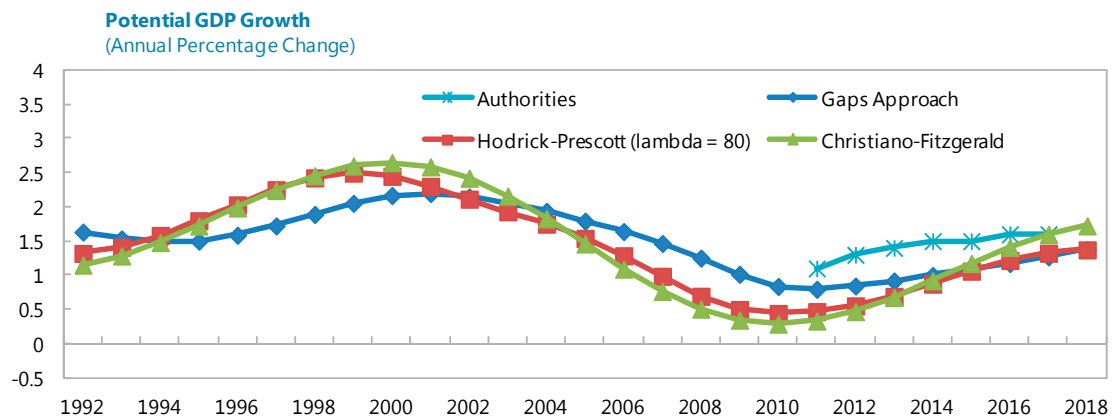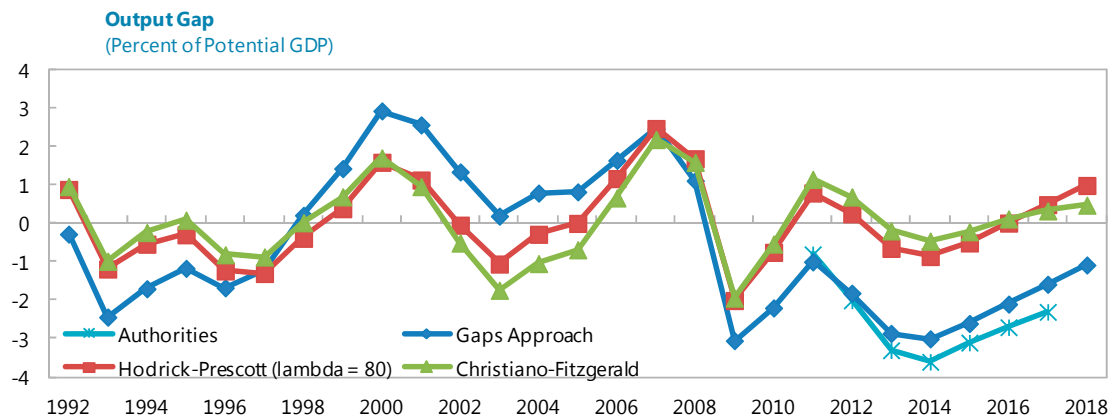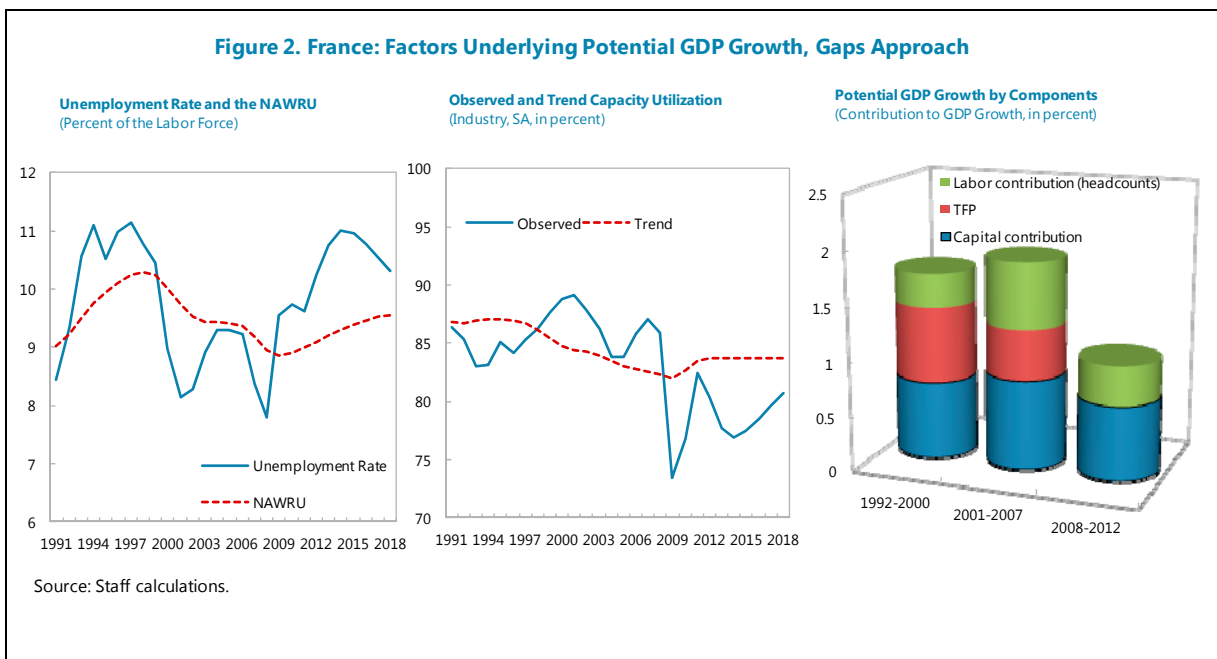
9.   The estimated gaps for GDP, the unemployment rate, and capacity utilization are closely linked together. As predicted by Okun's law, the unemployment gap is strongly correlated with the current and lagged output gap. It is also apparent that the unemployment gap has smaller cyclical fluctuations. This would reflect well-known features of the labor market, such as labor hoarding and the discouraged-worker effect during recessions. The capacity utilization gap displays pronounced volatility, the decline during recessions being particularly steep.

Gaps Approach - Estimated Gaps

Sources: Staff calculations.
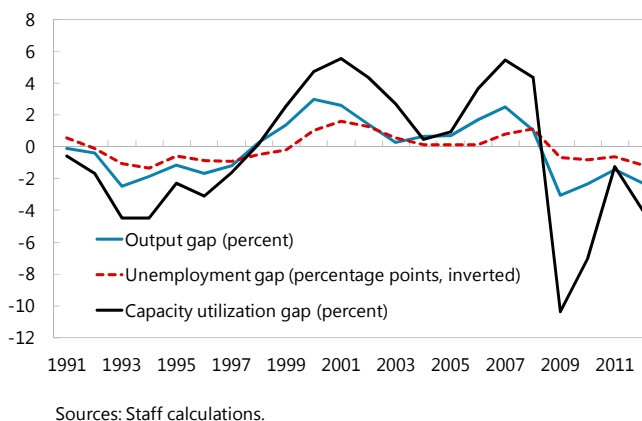
10.   The loss of potential GDP levels induced by the crisis thus far could be substantial. The shortfall in potential GDP levels could have reached around 4 percent by 2011 (10 percent cumulatively over 2008-11). These losses have significant implications in terms of living standards, and create strains for public finances. In this connection, it is important that supply-side policies aim at minimizing such losses going forward. Section V illustrates the scope for policy reform. Before we turn to that, we discuss prudence as a main operating principle to inform fiscal policy recommendations in Section IV.

D. Potential GDP Estimates: Dealing With Uncertainty

11.   We take potential GDP by the gaps approach as our baseline scenario. Following a marked, transitory downturn in potential growth rates, and a gradual medium term recovery, it is expected that potential growth increases from about 0.9 during 2012-13 to 1.4 percent in 2018 (the last WEO projection year), and to 1.6 (average growth rate 1991-2012) by 2021.

12.   To understand the gains from using the gaps approach to estimate and project potential GDP, it is helpful to recall the two major problems with univariate filters: they ignore relevant economic information, which can create biases; and they give excessive weight to revisions to the most recent observations. To make this clear, Section A discusses the performance of both univairate and multivariate techniques in terms of robustness to new data. Still, it is important to stress that, just as any other method to estimate potential GDP, the gaps approach also rests on a number of choices (Section B and Section C).

Robustness to New Information

13.   The potential GDP estimates presented in this study, based on multivariate filtering techniques, are found to be more stable than alternative univariate methods. To illustrate this point, we examine the performance of HP, CP, and the gaps approach as news arrives to the set of information used for projections. This comprises new data for GDP (HP and CF filters), along with data on capacity utilization and the unemployment rate (gaps approach). The performance evaluation excludes the EC's production function methodology because the exact specification of the NAWRU and TFP extraction methods, two key inputs for calculating potential GDP, are unavailable to staff.

14.   We inspect the prediction error over one-to-six quarters ahead. The revisions for each quarter t are therefore defined as:

$$R_{i,t} = yp_{t,t+i} - yp_{t,t+i-1} \ (1)$$

where $R_{i,t}$ is the i-th revision of observation t, and $yp_{t,t+i}$ is the estimate of potential output for period t, by using information up to period t+i. We then obtain the root mean square revision (RMSR), a standard measure of predictive power, by aggregating the forecast errors up to six quarters ahead across all observations, that is

$$RMSR = \sqrt{\sum_{i=1}^{6} \frac{R_{i,t}^2}{6}} \ (2)$$

RMSR is therefore the square root of the mean of the squares of the prediction errors $R_{i,t}$ for horizons 1 through 6 quarters ahead.

15.   We report RMSR for both the level and the growth rate of potential GDP (table 2). As expected, all three methods have increasing revisions over time. The revisions grow steeply between the first and second quarter. This may reflect the timing of national accounts releases: each quarter's

estimates can be significantly improved upon the release of the flash estimates for such quarter (realized at *t+45*).

Table 2. Root Mean Square Revisions						
	Out-of-sample revisions at quarter...					
	1	2	3	4	5	6
Level of potential GDP						
Gaps Approach	0.2	0.3	0.4	0.5	0.6	0.6
Hodrick-Prescott	0.2	0.5	0.6	0.8	0.9	1.0
Christiano-Fitzgerald	0.3	0.5	0.6	0.8	0.9	0.9
Annualized growth rate in potential GDP						
Gaps Approach	0.1	0.1	0.1	0.1	0.2	0.2
Hodrick-Prescott	0.1	0.2	0.2	0.3	0.4	0.4
Christiano-Fitzgerald	0.1	0.2	0.2	0.3	0.3	0.4
Source: Staff calculations.						

16.   The gaps approach outperforms both HP and CF. As well documented in the literature, the HP filter has a tendency to attribute part of the cycle to the trend, given its excessive sensitivity to the last observations in the sample. Multivariate techniques such as the gaps approach are partly immune to the end-point bias problem as they can extract the information about the cycle from additional, observable indicators strongly linked to output (capacity utilization and unemployment in Benes *et al.*, 2010).

17.   Recent methodological improvements to the PF approach adopted by the EC have sought to reduce the size of forecast errors. For instance, the size of the revisions at one-year horizon from switching to a Kalman filter TFP extraction were reduced as much as 20 percent for most countries (Denis *et al.*, 2010). Older and Kalman-filter-based estimates differ the most at turning points—the periods where precision is most crucial for policy makers.

Choices

18.   The set of choices embedded in the estimates presented in this paper fall under three main categories: (i) assumptions affecting the exact specification of the Phillips curve, the Okun's law, and the capacity utilization equation; (ii) assumptions affecting the smoothness properties of potential GDP; and (iii) assumptions on the account of the impact of policy reforms (in train or announced). This section discusses (ii) and (iii). For a detailed description of the model equations the reader is referred to Benes *et al.* (2010).

- **Smoothness properties of potential GDP**. The same approach can deliver higher or lower variability of potential output depending on the relevant time horizon under consideration. The longer the reference time horizon is, the less production factors are affected by cyclical fluctuations relative to structural drivers. To illustrate, Central banks, whose primary purpose is the prevention of inflationary tensions, will tend to favor shorter horizons and relatively flexible potential outputs. By contrast, if the main focus is to target structural deficit targets, we would give preference to a longer time horizon and a low-volatility trend. To serve this latter purpose, we choose a cut-off periodicity of 56 quarters to separate the short- and long-term fluctuations: the trend is defined in such a way that more long-term movements are captured in it.

- **Treatment given to policy reforms**. An important issue when estimating potential GDP is whether policy effort is incorporated to the underlying trend series, particularly the NAWRU. Overall, staff generally views the recently adopted reforms (the reduction in the tax wedge pursued by the Crédit Impôt Compétitivité Emploi (CICE); the move towards "flexicurity" embedded in the labor market reform; and the expansion of employment subsidies)[2] as a good basis for lifting France potential GDP. These reforms are, however, not fully incorporated in the estimates presented in this paper as uncertainties remain about their timing and implementation—insofar as their success critically hinges upon behavioral changes by social partners, enterprises, or even the judiciary.

- **In estimating potential output, an important consideration should be the impact of estimation errors on policy**. If the cost of projection errors is asymmetric (i.e., high in the event of an overvaluation of potential output), this would argue for using more conservative assumptions. This consideration is relevant, for instance, when potential growth estimates are used to anchor fiscal policy, since the cost of overestimating potential output is a loss of fiscal space which is harder to adjust to than the opening of additional fiscal space (in the event of an underestimation of potential output). Having estimated the cumulative fiscal adjustment required under prudent assumption, there is then room to decide on a speed and profile of adjustment that takes into account cyclical conditions.

Permanent or Temporary Effects from the Crisis? Probably Temporary

19.   **Conceptually, the damage of a crisis on an economy's potential can be either temporary or permanent**. Do recessions shrink the pace of growth only temporarily or more durably? The length of the downturn is critical in this respect: a protracted recession can be expected to affect the pace of growth persistently through hysteresis effects. Focusing on labor, for instance, the longer people are out of work, the more likely their skills will fade or become less suitable for the available jobs. Thus, high levels of long-term unemployment may portend high levels of structural unemployment.

20.   **It is challenging, however, to distinguish in real time permanent versus temporary effects.** The 2013 WEO proposes to use inflation as an instrument to separate temporary vs. permanent effects. Inflation stickiness, the argument goes, could be indirect evidence that output gaps are small, the observed increase in unemployment mostly structural[3], and potential GDP much lower than prior to the crisis. The competing view is that most of the economy's potential has been preserved throughout the crisis, and, consequently, the output gap is currently sizable. This can, in turn, be reconciled with a relatively stable inflation provided that the Phillips curve has flattened

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[2] See Staff Report for the 2013 Article IV consultation with France for a detailed description of these reforms.

[3] If those who are unemployed cannot effectively compete for jobs, they may have much less influence on the wages of those who are employed. This can translate into less influence on the prices firms charge for their goods and services. Such unemployment is termed "structural".

(inadequate responsiveness of inflation to economic fluctuations in a low inflation environment) and/or that inflation expectations remain well-anchored.

21.   The potential GDP estimates presented in this paper are consistent with the view that France will largely recoup crisis-induced losses in potential GDP growth (i.e., the losses in growth are temporary but the loss in the level of output is permanent). The inflation projections embedded in WEO are set to decline marginally this and next year and gradually converge to the 2 percent anchor thereafter. This presumes a low sensitivity of wages to unemployment conditions (i.e. a relatively flat Phillips curve).

France - Output Gap and CPI-Inflation
(Annual Percentage Change)

Sources: European Commission (EC), France Stability Program (SP), WEO, and Staff
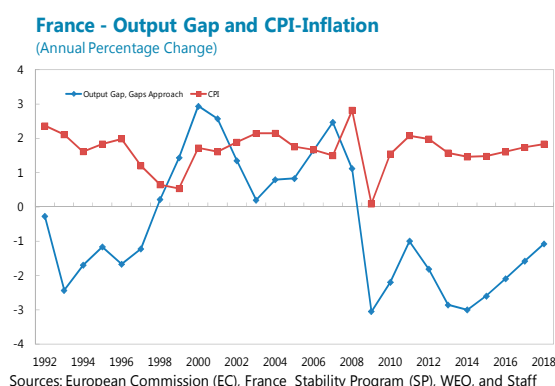
Calling for Action: Medium-Term Prospects and Policy Scenarios

22.   This section gauges the impact on potential growth of alternative paths for its underlying drivers. These simulations are meant to illustrate the scope for higher potential growth from structural reforms that would operate through these channels. The assumed shocks would get France closer to best performers on key growth drivers in the way described below.

- **TFP shock**. France productivity growth pre-crisis (av. 2000-08) stood at 0.7 percent per year, lagging behind innovation leaders, including Sweden and Finland (1.7 percent each); and the UK (1.4 percent). All three countries outperform France by the World Bank Doing Business and the Global Competitiveness indicators. Reducing the administrative burdens and tax complexity, and enhancing competition in services are some of the levers to influence TFP (see companion Selected Issues Paper on "France: External Developments and Assessment"). The simulated scenario would allow France to close by 2018 half of the gap between the current level of TFP growth and the 2000-08 average rate across best performers (Sweden, Finland, and the UK). This amounts to a yearly positive TFP shock of 0.1 percent point relative to the baseline.

- **Participation shock**. Workforce participation in France stood at around 71 percent of the working age population in 2011–4 percentage points below the OECD average. The gap with best performers is at its highest for the 55-64 years old cohort (51.2 percent against around an average of 73 percent for Germany, Denmark, Finland, Sweden, and Switzerland). The implicit tax on continuing work (in terms of contributions paid and foregone benefits) is still high in France relative to peers. As in the "high participation" scenario by INSEE (Filatriau, 2011), we simulate a shock where each year the labor force is, on average over 2013-18, 0.65 percent above the baseline. This portrays a situation with enhanced participation from both older and young

workers.[4] Instruments to increase employment rates include the forthcoming pension reform, and the reform of unemployment insurance. The duration of unemployment spells could also be lowered by reducing mobility costs both across regions (cost of services and housing) and professions (consolidation of multiple pension and benefit systems).

Labor Force- Baseline and Policy Scenario
(In thousands)
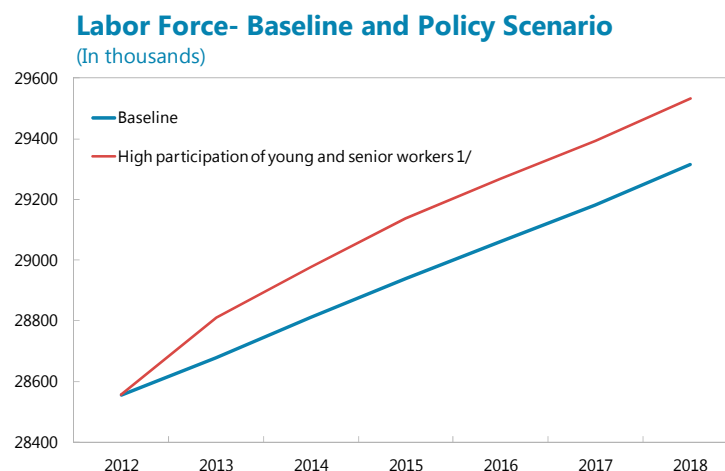
Sources: INSEE, 2011.
1/ Young and old workers are, respectively, 25 years old or less and 55-59 years old.

- **Structural unemployment shock**. On the eve of the crisis, France's structural unemployment reached almost 9 percent of the labor force, largely exceeding the NAWRU featured by labor markets with greatest "flexicurity", such as those of Denmark (5.2), Netherlands (3.6), Sweden (6.3), or Finland (6.9). Continued efforts to reduce tax wedges along with employment-friendly wage policies (temporary freeze of the minimum wages), lower dismissal costs) are potential instruments to curb structural unemployment. The simulated scenario assumes a yearly ¼ percent point reduction in the NAWRU relative to the baseline over 2013-18. This would allow France to cover half of the distance with best performers.

23.   **The simulations are indicative of substantial gains from reform** (Figure 3). By 2018, potential growth would outpace that embedded in the baseline by between around 0.1 and 0.4 percentage points, depending on the scenario under consideration. The combined impact of those changes would raise potential growth to around 1.8 percent by 2018 (against 1.4 percent in the baseline).

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[4] The 2010 pension reform is already incorporated in the INSEE central scenario used in our central projections.

Figure 3. France: Simulations on Potential GDP

Potential GDP - Policy Scenarios
(In billions of 2005 euros)

Potential GDP Growth - Policy Scenarios
(Growth yields, p.p.deviation from baseline, by 2018)

Source: Staff calculations.
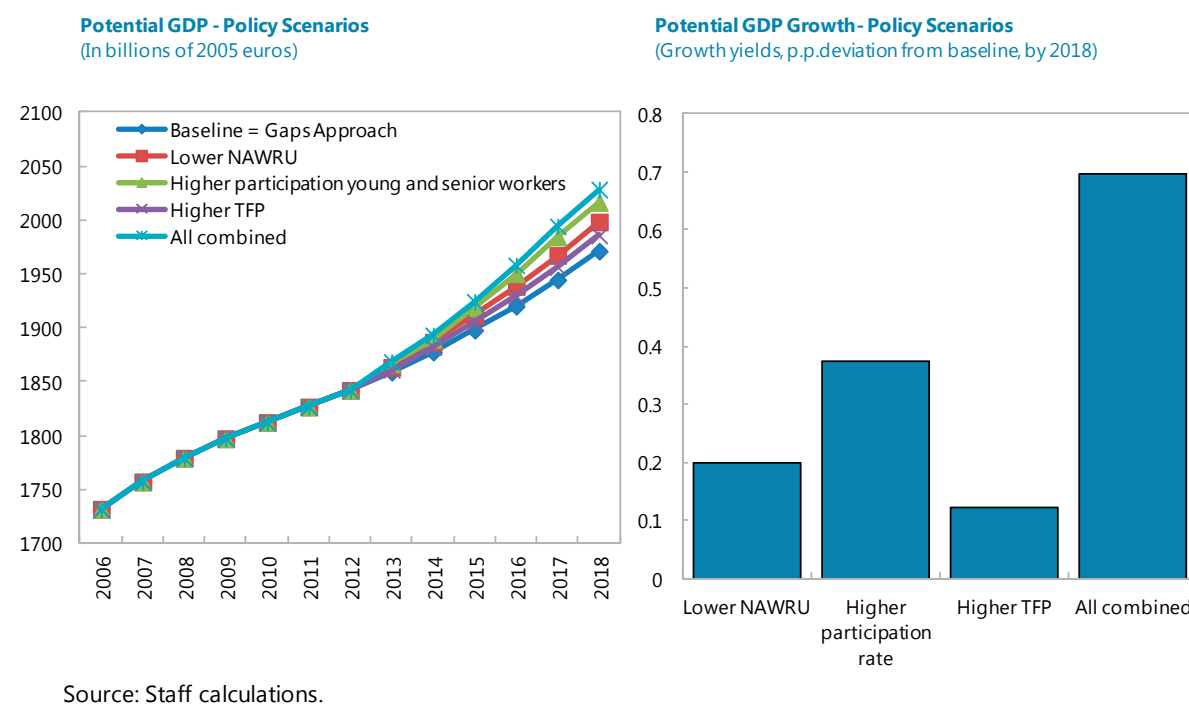
Conclusion

24.   This paper has updated projections for France potential GDP, discussed its main drivers, and the scope for policy reform. We have also evaluated the real-time performance of alternative methods to estimate potential output—the HP and CF filters, and the termed "gaps methodology".

25.   The main lesson is that potential growth estimates are inevitably subject to revisions as new data become available. Therefore, uncertainty about the true level of potential output will remain a fact of life for policy makers. There will always be a need to periodically fine-tune the method with developments in the literature, new data sources, and alternative estimation approaches. Under these conditions, it is important that the methodology underlying potential growth estimates (and its limitations) be well understood. Given this inherent uncertainty, it is particularly important to rely on assumptions, parametric choices, and estimation techniques that do not expose policies to costly mistakes. For fiscal policy, this would argue in favor of conservative assumptions.

26.   The structural approach to potential growth projection also allows to gauge the potential impact of structural reforms which can increase the contributions of the various factors of production. France has already embarked on structural reforms that could trigger some of these increases, provided these reforms are sustained and deepened. This paper illustrates how a broad-based structural reform program aimed at closing the gap relative to best performers (in terms of labor force participation, structural unemployment, and total factor productivity) could increase potential growth by as much as 0.5 percent on average over 2013-18.

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WHICH EXPENDITURE SAVING TO SUSTAIN MEDIUM-TERM FISCAL CONSOLIDATION?[1]

1.   **Much of the fiscal imbalance that was opened during the crisis has been corrected, but the structural fiscal deficit still stood at 3.5 percent of GDP in 2012**.[2] France's fiscal deficit widened markedly during the crisis (from 2.7 percent of GDP in 2007 to 7.5 percent of GDP in 2009). Automatic stabilizers contributed to about 2/3 of this deterioration, with the rest coming from a discretionary fiscal stimulus. Thus, over the same period, the structural fiscal balance widened by 1.5 percent of GDP. The fiscal consolidation undertaken since 2010 reduced the structural imbalance by just over 2 percentage points of GDP by 2012, with an additional adjustment of nearly 2 percentage points projected for 2013. An additional adjustment of 1.7 percent of GDP will be needed to meet the government medium term objective of a balanced structural position.

2.   **The Stability Program of April 2013 envisions that fiscal consolidation, which has so far relied mostly on revenue measures, will shift to expenditure containment**. The tax-to-GDP ratio increased by 3 points over 2009-12 and is projected to increase by one additional point in 2013. In contrast, the expenditure-to-GDP ratio, which had increased by over 4 points between 2007 and 2009, has remained at its peak level of close to 57 percent of GDP and is the largest in the euro area (Figure 1)[3]. The increase in the expenditure ratio during the crisis is not fully cyclical as almost 1/3 is due to structural spending increases. Going forward, the authorities intend to shift from revenue-based consolidation to expenditure-based consolidation. The share of revenue measures in the structural adjustment should decline from 85 percent in 2012 to 79 percent in 2013 and to 33 percent in 2014. In 2015 and 2016, the structural adjustment would come entirely from expenditure containment.

Figure 1. France: Main Fiscal Indicators
(2000-2013, in percent of GDP)

Sources: INSEE and IMF Staff projections.

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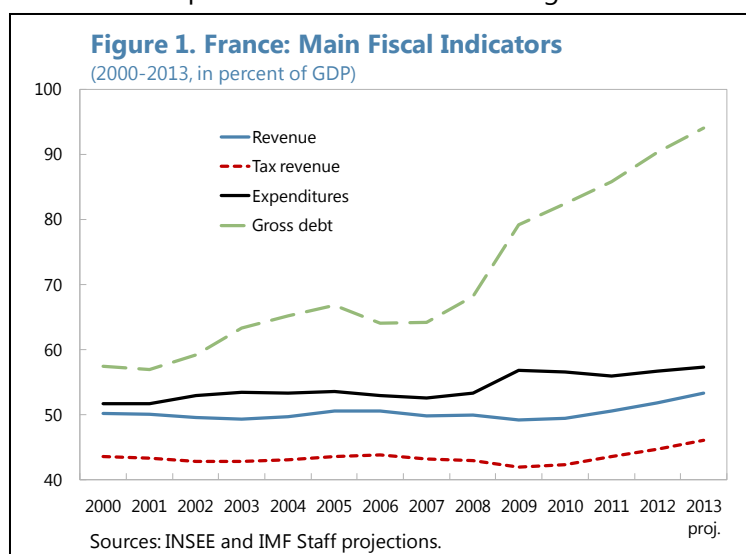
[1] Prepared by Jean-Jacques Hallaert.

[2] In this paper, structural numbers are in percent of IMF estimated potential GDP.

[3] Averaging 2.2 percent per year in 2008-09, real expenditure growth outpaced its trend growth of 1.5 percent (average real structural spending was 2.0 percent). Stabilizing the nominal and structural expenditure ratios required limiting real expenditure growth to 0.6 percent per year in 2010-13 (0.4 percent for structural spending).

3.   **The purpose of this paper is to identify the areas of expenditure saving that could sustain medium term fiscal consolidation**. The first section discusses the size of the fiscal adjustment needed to meet the objective of a balanced budget. The second section draws lessons from international experience with fiscal consolidation for the design of an expenditure-based consolidation in France. The last section identifies possible areas of expenditure saving.

A. A Historically Large Adjustment

4.   **To reach their medium-term fiscal objective, the authorities estimate that they will have to reduce the spending-to-GDP ratio by about 3 percentage points during 2013–17** (République Française, 2013). Under the authorities' macroeconomic projection, such reduction in the expenditure ratio implies a structural adjustment of close to 2½ percent of GDP and would deliver a structural surplus of 0.5 percent in 2017. Under IMF staff's macroeconomic framework and potential growth, the same reduction in the expenditure ratio would balance the structural budget and would require a structural adjustment of close to 2 percent of GDP.

5.   **Such a reduction is large by historical standards**. Figure 2 shows periods of declining expenditure-to-GDP ratio shaded in green. In the past 35 years, the largest reduction in the expenditure-to-GDP ratio reductions amounted to 3 points between 1986 and 1989 and 2.8 points between 1996 and 2001.

6.   **More than in the past, the reduction in the expenditure ratio will have to come from discretionary expenditure saving**. The red shaded areas of Figure 2 show that policy measures were short lived. They explain only 0.76 point of the 3 points reduction in the expenditure ratio during 1986-89 and 0.56 points of the 2.8 point reduction in 1996-2001. In other terms, the drop in the expenditure ratio was achieved without substantial expenditure containment: real structural primary expenditure grew on average by 2.0 percent a year in the two periods

Figure 2. France - General Government Spending (left axis, in percent of GDP) and Real Growth (right axis, in percent)

Sources: INSEE, Devries *et al.* (2011), and Author's calculation.
Note: Shaded in green are periods of decline in the expenditure-to-GDP ratio, in red are the periods of policy-driven spending cuts.
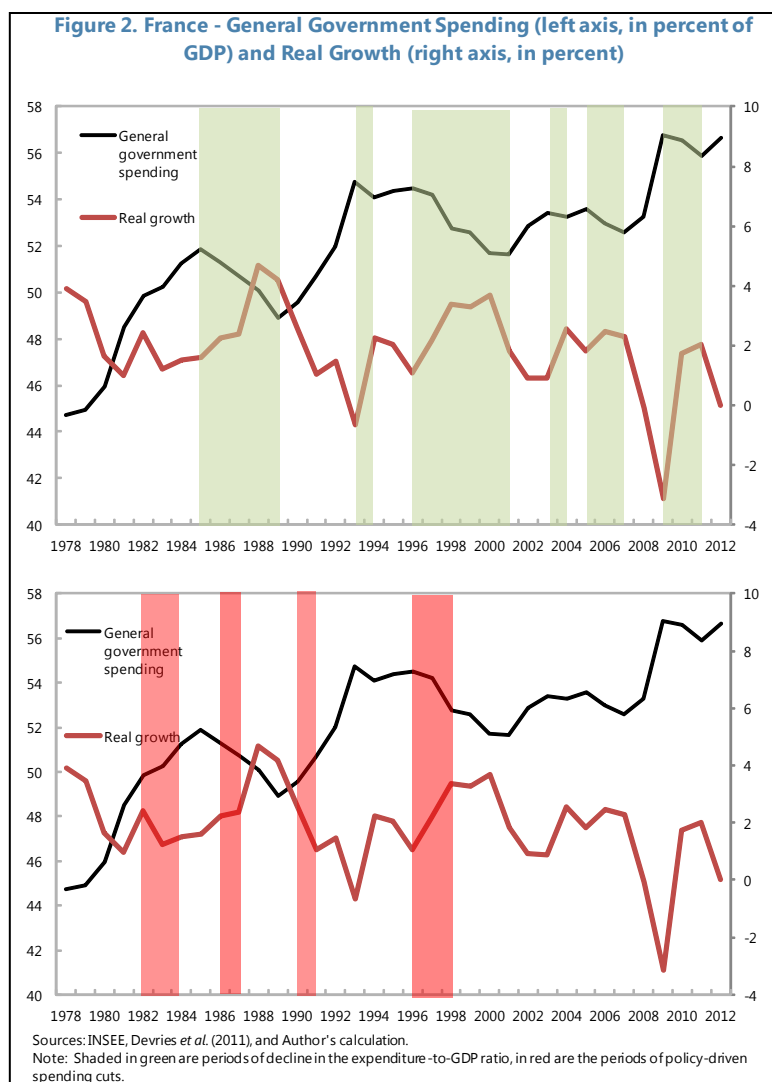
that is only below their average growth rate of 2.5 percent during 1981-2007. Rather, the main reasons for the reduction in the expenditure ratios were strong economic growth (3.4 percent on average during 1986-89 and 2.6 percent during 1996-2001) and inflation. Nominal GDP grew by 7.1 percent on average during 1986-1989 and 3.8 percent during 1996-2001. This is much more than what can be expected in the coming years. The French authorities expect, on average, a real growth of 1.5 percent over 2013-17 (1.1 percent in IMF staff scenario) and a nominal GDP growth of 3.2 percent (2.8 percent in IMF staff scenario). Therefore, more than in the past, the reduction in the expenditure ratio will have to come from discretionary expenditure saving.

Figure 3. General Government Spending
(In percent of GDP)

Source: Eurostat.
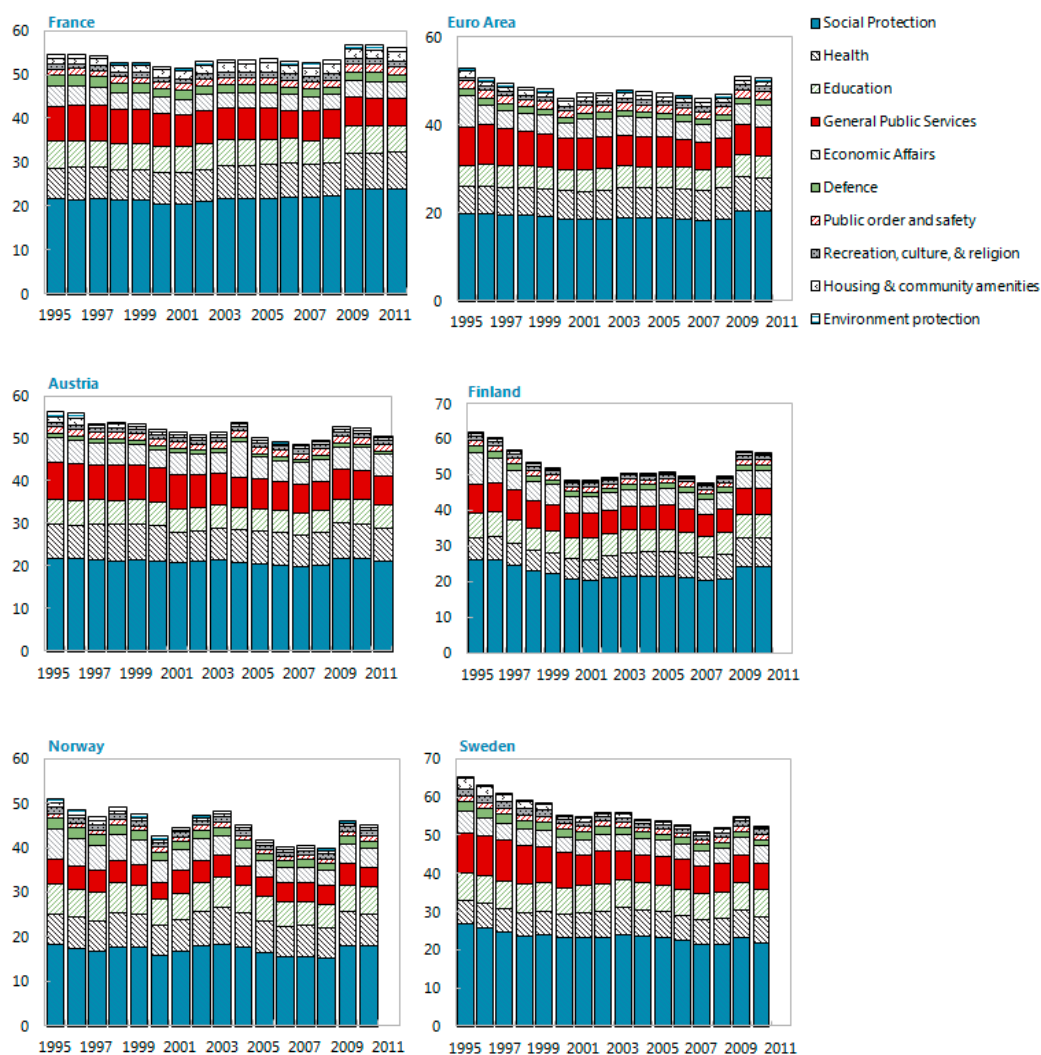
7.   Although large, a 3 points reduction in the expenditure ratio is achievable. To put the effort in perspective, reducing the expenditure ratio by 3 points would only bring it back 1 point

above its 2008 level. Moreover, other European countries have managed to do more while preserving their social model (Figures 3 and 4). In two years (1995-97), Austria reduced its expenditure-to-GDP ratio by 5.6 points, 2.7 percentage points of which was due to policy measures. Between 1993 and 2001, Finland reduced its expenditure ratio by 17 points. In the first four years, the reduction reached 8.7 points of which 7.5 points were policy driven. Between 1992 and 1998, Sweden reduced its ratio by 11.4 points of which 6.8 points were due to policy measures (Table 1). Norway is another example of substantial adjustment, even if less steady. In all cases, the fiscal balance improved significantly. In the Scandinavian countries, it shifted from substantial deficits to surpluses. Moreover, the debt-to-GDP ratio was stabilized or substantially reduced putting these countries in a better position to face the fiscal impact of the current crisis.

Table 1. Discretionary Budget Measures in Recent Fiscal Adjustment

		Total	Revenues	Expenditures
Austria	1996	2.41	0.88	1.53
	1997	1.56	0.44	1.12
	2001	1.02	0.90	0.12
	2002	0.55	0.00	0.55
	Composition		40 percent	60 percent
Finland	1992	0.91	0.00	0.91
	1993	3.71	0.00	3.71
	1994	3.46	0.69	2.77
	1995	1.65	-0.63	2.28
	1996	1.47	0.00	1.47
	1997	0.23	-0.70	0.93
	1998	0.00	0.00	0.00
	1999	0.00	0.00	0.00
	Composition		-6 percent	106 percent
Sweden	1993	1.81	0.42	1.39
	1994	0.78	0.19	0.59
	1995	3.50	1.40	2.10
	1996	2.00	0.80	1.20
	1997	1.50	0.60	0.90
	1998	1.00	0.40	0.60
	Composition		36 percent	64 percent

Source: Devries *et al*. (2011).

Note: Perotti (2011) argues that the Swedish and Finnish discretionary expenditure cuts were smaller than estimated by Devries *et al*. and that their fiscal adjustment was mainly revenue based. However, this is a minority view. Von Hagen *et al*. (2002) estimate that primary expenditures accounted for 55 percent of fiscal consolidation in Sweden and for 65 percent in Finland. According to the OECD (1995) the measures announced for 1995-1998 were for 60 percent on the spending side and for 40 percent on the tax side. Broadbent and Daly (2010) estimate that "cut to primary current expenditure account for 80 percent of the improvement in the cyclically-adjusted primary balance" in Sweden during 1994-98. The Swedish Minister of Finance estimates that the adjustment was 53 percent expenditure based and 47 percent tax based (Anders Borg, 2010).

Figure 4. Impact of Past Expenditure Cuts
(in percent of GDP)

France

Euro Area

Austria

Finland

Norway
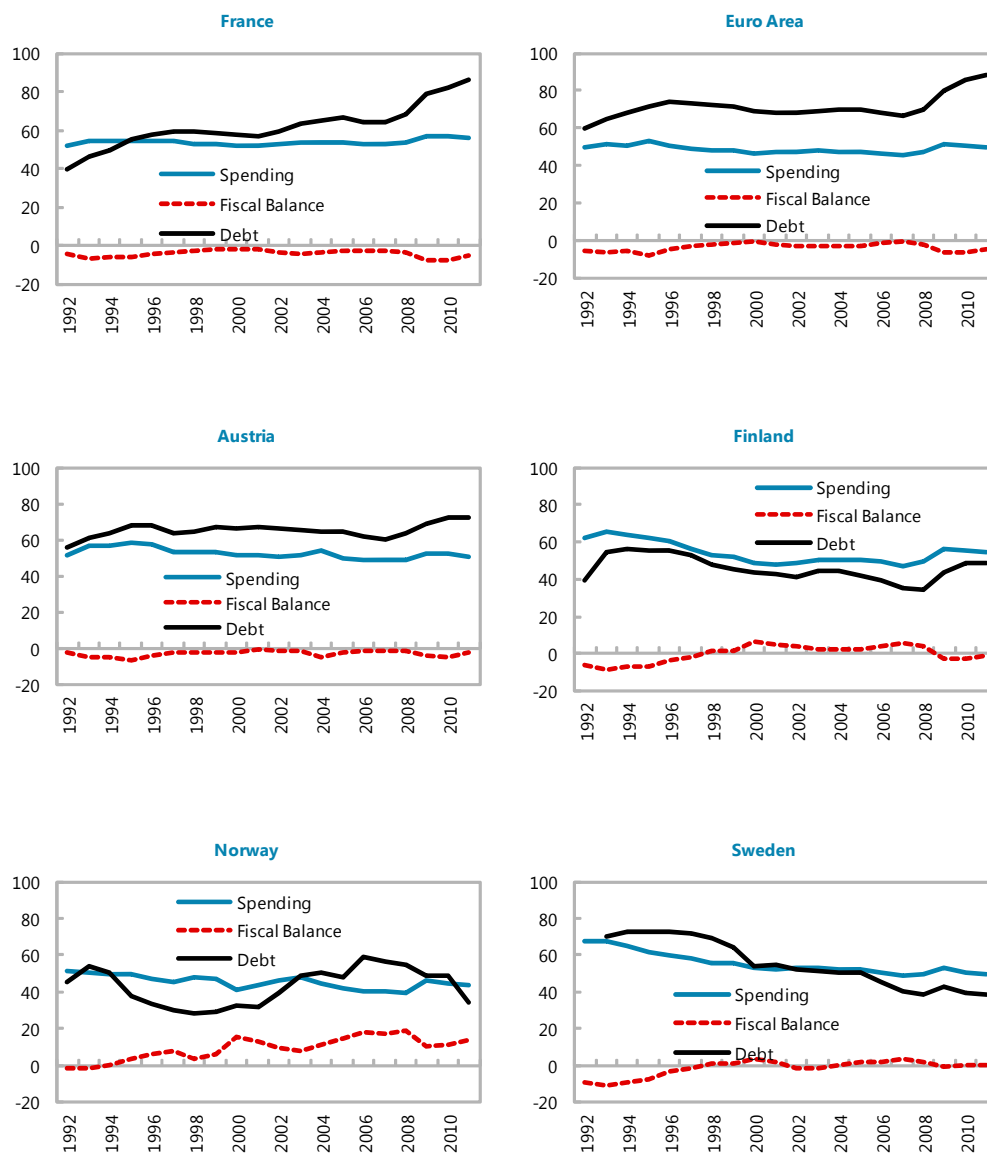
Sweden

Source: IMF, WEO.

B. What Makes a Successful Fiscal Consolidation?

8.   Based on the findings of empirical literature and on the case of Sweden, this section draws five lessons for the design of fiscal consolidation in France. A large empirical literature has looked at past international experience with fiscal adjustment. Through econometric work, it has aimed at identifying the factors that are more conducive to a successful consolidation (notably looking at the composition of the adjustment) and its sustainability over the medium term.

9.   First, empirical literature finds that expenditure-based consolidations have been more successful than revenue-based consolidations (Alesina and Ardagna, 1998 and 2009; Barrios *et al*., 2010; Broadbent and Daly, 2010; Guichard *et al*., 2007; Hauptmeier *et al*., 2007; Molnar, 2012; and von Hagen *et al*., 2002). However, revenue measures can also have a role to play in fiscal consolidation if there is room to increase the revenue-to-GDP ratio or to reduce inefficient tax spending and if the taxes less harmful for growth (such as environmental taxes, property taxes, and value-added taxes) are used (Tsibouris *et al*., 2006).

10.   In practice, countries have relied on a mix of expenditure and revenue measures (Table 1). Based on the experience of Sweden in the 1990s, the Swedish Finance Minister Borg (2010) stated that: "to be credible, the government must use all means available, which implies increasing taxes and reducing spending. Only focusing on expenditure cuts would excessively harm socio-economically disadvantaged groups, who rely extensively on the social programmes that would inevitably suffer. This is neither politically desirable nor politically acceptable. Only relying on tax hikes would massively distort incentives to work. Moreover, empirical evidence shows that fiscal consolidation based solely on higher taxes is not as effective and does not create as lasting effects as a balanced consolidation, with sizeable expenditure reductions. The key is hence to find an appropriate balance between tax and expenditure adjustments." Although the exact split between revenue and expenditure measures is subject to debate (see note in Table 1) the decline of the expenditure-to-GDP ratio in Sweden far exceeded the decline in the revenue-to-GDP ratio (EEAG, 2012).

11.   France planned medium term adjustment also relies on a mix of expenditure and revenue measures. The authorities' plan to shift the fiscal adjustment toward expenditure containment is intended to achieve a roughly equal balance over the medium term, between revenue and expenditure measures. It also reflects the fact that the tax-to-GDP ratio is already high by international standard, and that margins to raise taxes that are less harmful for growth have already been partly exploited, *e.g*., property tax (Norregaard, 2013), and the increase in VAT and environmental taxes expected in 2014.

12.   Second, econometric studies of past adjustments highlight that reducing the government wage bill and social expenditure is the most conducive to a successful consolidation (Alesina and Ardagna, 2009; Alesina and Perotti, 1995 and 1997; Bermperoglou *et al*., 2013; Hernández de Cos and Moral-Benito, 2011; Guichard *et al*., 2007; Molnar, 2012; and von Hagen *et al*., 2002). Molnar (2012) cautions that the specific spending cut matters for the size of the consolidation with cuts on social protection and housing and community amenities boosting the size of the consolidation. Hauptmeier *et al*. (1997) emphasize that ambitious reforms tend to focus the cuts on transfers, subsidies, and public consumption.

13.   Third, the composition of the adjustment is also crucial for the persistence of multi-year adjustments. The reasons why reducing the wage bill and social expenditure are more conducive to a successful consolidation may be that they can be more easily sustained in the medium term than other types of spending cuts. Once implemented, pressures to reverse cuts in the wage bill and social spending may be limited, especially if accompanied with reforms that increase

efficiency. By contrast, other types of expenditure are more likely to be reversed because they are more damaging for growth and cannot be sustained indefinitely, e.g. investment (Broadbent and Daly, 2010). Indeed, reducing the government wage bill and social spending are also found to have a comparatively smaller adverse impact on growth making them easier to sustain. Estimated fiscal multipliers for France suggest that trimming down transfers to households will have the smallest immediate impact on growth followed by public consumption cuts while investment cuts would have the largest impact (Table 2). Consistent with this, Bermperoglou *et al.* (2013) find in an analysis on four advanced economies that public investment cuts have been associated with output losses and increases in unemployment. They also find that a reduction in the wage bill would have the same outcome if achieved through vacancy cuts but would not imply output losses and can even be expansionary and reduce unemployment if achieved by wage cuts.

Table 2. France: Estimated Short-Term Fiscal Multipliers			
	Transfers to households	Public consumption	Public Investment	Total public spending
OECD (2013)	0.6	0.8	1.0	
Barell *et al.* (2012)	0.3	0.7		0.7 (2 during recession)
Klein and Simon (2010)			1.1	
Batini *et al.* (2012)				2.1 during recession
Biau and Girard (2005)				1.4
Bouthevillain and Dufénot (2010)				0.4
Créel *et al.* (2011)				1.0
Marcellino (2002)				0.8

14.   **Supporting this economic rationale, the findings of the empirical literature show that the composition of an adjustment is a key determinant of its persistence**. International experience shows that the longer a fiscal consolidation lasts, the greater the likelihood of a reversal (von Hagen *et al.*, 2002; Ahrend *et al.*; and 2006, Guichard *et al.*, 2007). The risk of an adjustment fatigue should not be underestimated in the case of France, which has been implementing a fiscal adjustment since 2011 and plans to do so until 2016-17. However, the design and the composition of the adjustment matters for its sustainability. For example:

- Alesina and Perotti (1995) find that adjustments that reduce the deficit mainly by cutting social expenditure and the wage bill are the more persistent. In contrast, adjustments that rely primarily on labor-tax increases and on capital-spending cuts do not last.

- Von Hagen, *et al.* (2002) find that expenditure-based adjustments are more likely to last than revenue-based adjustments. Consistent with this result, they also find that (1) a fiscal consolidation starting with rising taxes and later switching to reduced spending (i.e., the strategy

followed by the French authorities) is less likely to be sustained than a consistently expenditure-based consolidation and (2) fiscal adjustments undertaken when the economy is recovering or when there is a tightening fiscal stance in other countries have more chances to be sustained because in this context "governments tend to turn to expenditure cuts rather than raising taxes to achieve budgetary consolidations."

- As credibility and predictability are crucial for the sustainability of any medium-term policy, concrete measures should be announced as early as possible in the adjustment process, For this reason, half of all saving undertaken by Sweden were decided in 1994.

15. **The experience of Sweden, which managed to preserve a generous welfare state while compressing social spending, provides additional useful lessons on the composition of a successful and sustainable adjustment**. Finance Minister Borg (2010 and 2011) emphasizes that spending cuts though necessary should be selective. Spending that enhances growth and employment prospects, such as education, professional training, key public investments and infrastructure projects, as well as research and development spending should be preserved.[4] Moreover, spending cuts should be designed to boost incentives to work and join the labor force. In practice, this means that spending cuts should aim at eliminating unemployment traps and at encouraging people to work more and stay longer in the workforce by starting working at an earlier age and retiring later.[5] As part of this approach, half of the 15.6 percent drop in Sweden's expenditure ratio between 1993 and 2001 came from reduced transfer payments (pensions, early retirement benefits, housing subsidies, and social and unemployment insurance) and the other half from government consumption (Borg, 2010 and Hauptmeier *et al.*, 2007).[6] This represented a substantial effort with social benefit spending declining in real terms (Figure 5). Another crucial factor in Sweden's successful fiscal consolidation was that it was backed by structural reforms. Social protection programs were evaluated with a view to identify how they could be reformed in order to increase incentives to work and to increase their targeting. Tax reform and labor market reforms (though late in the fiscal consolidation process) were also undertaken to further increase incentives to join (or stay longer in) the

Figure 5 - Sweden: Real Growth in Expenditures (In percent)

Source: WEO and Author's calculation.

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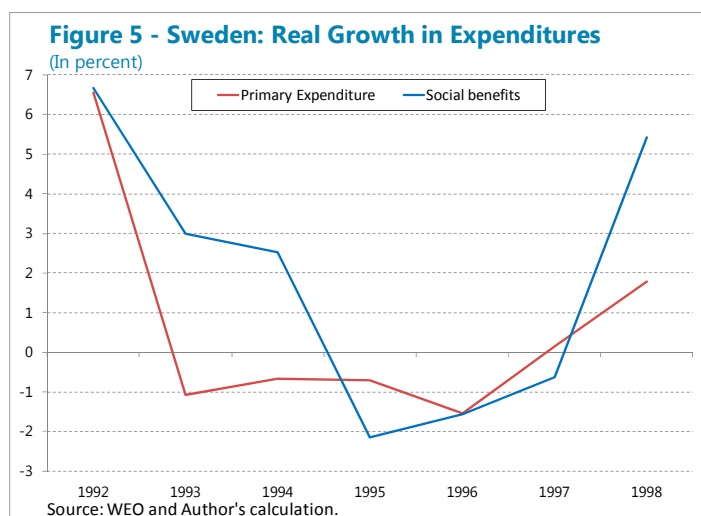
[4] The same recommendation was made more recently by the European Commission (2012) and the IMF (2012a).

[5] IMF (2012b) shows how better designed tax and expenditure policies could significantly boost employment.

[6] For more details on Swedish reforms, see among others EEAG (2012) and Perotti (2011).

labor force.

16.   Fourth, a consolidation by the sub-national governments tends to increase the probability of success of a fiscal adjustment initiated by the central government (Molnar, 2012). Though, literature does not identify a consistent role of sub-national government in the success of consolidation episodes, it appears crucial in the case of France for several reasons. As emphasized by the Cour des comptes (2012), a consolidation in the amount of 3 percent of GDP cannot be achieved only by the central government. Because central government spending is limited to about 15 percent of GDP and 27 percent of General Government spending, other levels of government (including the social security system) should share the burden of the adjustment.

17.   Finally, if fiscal consolidation needs to be undertaken in difficult times, it should be accompanied by structural reforms that will foster growth as rapidly as possible. Economic growth has been a crucial element of successful fiscal adjustments. Finland and Sweden started a large multi-year fiscal consolidation in the 1990s when their output gap ranged between 2 and 4 percent (Baker, 2010).[7] However, growth picked up early because a substantial depreciation implemented before the start of the fiscal consolidation and wage moderation during the adjustment allowed Sweden and Finland to seize the opportunity of a strong export demand. A fall in interest rates further fostered growth. At about 3 percent in 2013, France's output gap is similar to the one Sweden and Finland[8] had when they embarked on their fiscal consolidation. However, France cannot count on external demand to offset the contractionary impact of fiscal consolidation: its major export markets are experiencing low growth and exports accounts for a smaller share in France's GDP than in Sweden or Finland. Furthermore, France cannot expect a significant drop in interest rates which are currently at historically low levels. In this context structural reforms are thus the main lever of growth, notably through a deepening of labor market reforms and opening of product and services markets to greater competition which are an important lever of productivity growth and employment creation.

C.   Which Expenditure Saving Should France Consider?

18.   Although the French authorities announced their intention to reduce expenditures, the specific measures that have so far been announced cover only a small part of the needed expenditure adjustment. International experience, described in the previous section, suggests that targeting social spending and the wage bill would be both the most conducive to a successful fiscal adjustment and the least damaging for growth. Focusing expenditure saving on social spending appears warranted in France for three main reasons.

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[7] For a review of the importance of output gaps in fiscal consolidation, see Molnar (2012).

[8] 17 percent of the French exports go to Germany, 8 percent to Italy, 7 percent to each Spain and Belgium. In 2011, France's export-to-GDP ratio was below 28 percent but reached 42 percent in Finland and 50 percent in Sweden.

- **First, no OECD country spends more on social protection than France**. At about 32 percent of GDP, social expenditure are 6 percent of GDP higher than in Germany, 4 percent of GDP higher than in Sweden and Austria, and 10.5 percent of GDP higher than the OECD average (Figure 6). They account for 56.5 percent of the General Government spending (up from 50 percent in 1978).

Figure 6 - Public and Private Social Expenditure
(In percent of GDP in 2009)

Source: OECD Social Expenditure Database.
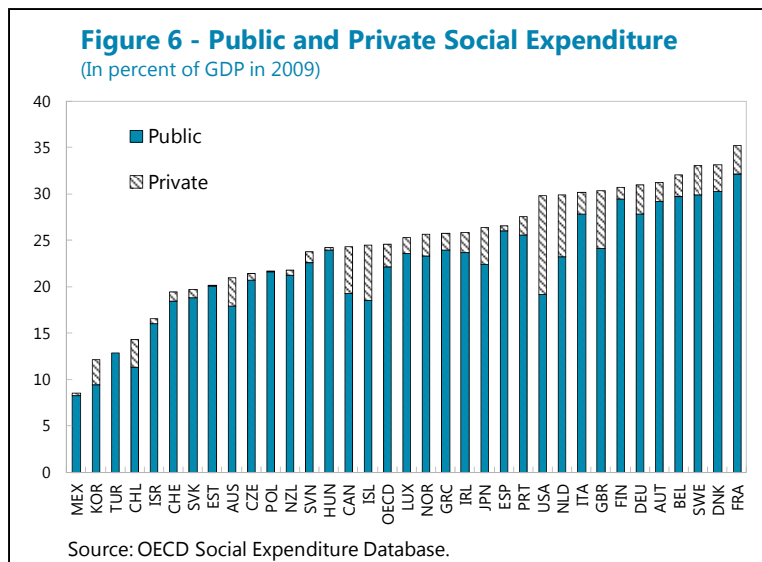
- **Second, social spending has grown steadily in France**. From about 25 percent of GDP in 1990, public social spending reached 30 percent before the crisis and 32 percent since 2009 (Figure 7). Social spending is the main reason of the increase in the expenditure ratio. While other countries have started rolling back the increase in social expenditure that took place in all countries in 2009, France share of social spending has remained stable at its peak

Figure 7. Public Social Spending in Selected OECD Countries (In percent of GDP, 1985-2012)

Source: OECD Social Expenditure Database.

level. Therefore, it appears possible to roll back some of the recent increases without jeopardizing the French social model, which would remain one of the most generous in the OECD.
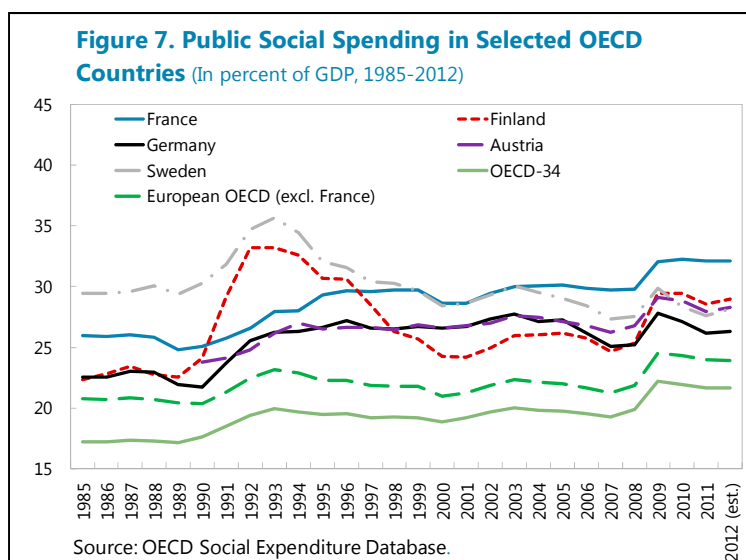
- **Third, if accompanied by reforms to increase their efficiency, savings in social spending would not necessarily reduce their social and redistributive impact, notably if means tested**. The reason is that, in some areas such as health, education, professional training or housing, some countries who spend less achieve better outcomes (in terms of performance indicators) than France. Efficiency issues are well documented (Cour des comptes, 2012 and 2013; Egert, 2013; European Commission, 2012; Grigoli, 2012; Migaud, 2012 and 2013; and OECD, 2013) and are reflected in the poor rating France receives by the World Economic Forum (2012) in terms of "wastefulness of government spending": France ranks 77th out of 144 countries well below Switzerland (7th), Sweden (8th), Finland (9th), the Netherlands (13th),

Germany (28th) or Belgium (46th) but above Spain (106th) and Italy (126th)[9]. A recent OECD study concludes that: "taxes and cash transfers reduce income inequality in France more than elsewhere in the OECD, because of the large size of the flows involved. But the system is complex overall. Its effectiveness could be enhanced in many ways, for example so as to achieve the same amount of redistribution at lower cost. [...] the system of social and family benefits should be simplified to enhance transparency and consistency. Eliminating schemes that let people leave the labour market early, abolishing the pension privileges of specific occupational groups and internalising the costs of survivors' pension benefits would increase fairness while at the same time generating savings. Better labour-market performance would result from increasing job-search incentives and shortening the parental leave allowance" (Égert, 2013).

19.   **Pensions are by far the largest social expenditure in France**. For all broad categories of social spending, France spends more than the average OECD, but expenditure on pensions stands out (Table 3). No OECD country, except Italy, spends as much on pensions.[10] At 13.7 percent of GDP, spending on pensions is about 6 percent of GDP higher than the OECD average. The reason is not demographic[11] but rather the decision to direct a large share of social spending to the elderly (France ranks 4th in the share of public social and education expenditures dedicated to the elderly; at 48.7 percent that is 10 points more than the OECD average). The French pension regime is generous. At 62, the legal retirement age is the lowest in the OECD. In most OECD countries it is set at 65 and can go up to 68[12]. Moreover, life expectancy after pensionable age is high (in 2010 it reached 21.7 years, 3.2 years longer than the average OECD) and, before the last reform, it was rising fast (three decades ago it was about 8 years shorter and below the OECD average - OECD, 2011).

20.   **Focusing reforms on inefficiencies and on harmonizing the various pension regimes would bring substantial saving and help restore the pension system financial sustainability**. Pension spending contributes to lower poverty rates among people of retirement age. Based on OECD data[13], this poverty rate is higher than in the Netherlands, Luxembourg, the Czech Republic or Canada which all devote a much smaller share of their GDP to pension spending (Table 3). The OECD (2012) considers that reforming the special regimes for civil servants, employees of state-owned enterprises, and employees of certain sectors (e.g., miners, notaries, railway workers, seamen,

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[9] Although measuring another dimension of efficiency, the indicator "Government provision of services for improved business performance" provides the same picture. France ranks 70th out of the 139 countries for which this indicator is available well below Finland (8th), Switzerland (15th), Germany (22nd), the Netherlands (25th), Sweden (27th), or Belgium (34th) but, again, above Spain (85th) and Italy (123th).

[10] This remains true if one considers not only public spending but public and private spending on pensions (OECD, 2011).

[11] France ranks only 18th out of 34 OECD countries for the share of population of 65 and over. At 16.7 percent, this share is 2 points above OECD average but about 3 ½ points below Italy and Germany.

[12] Pension can be claimed at 62 years of age, although full pension rights may be accrued at a higher age depending on the years of contributions.

[13] Provisional data from OECD Income distribution and poverty database (www.oecd.org/els/social/inequality).

etc.) could be an important source of saving. It estimates that a convergence of these regimes and the private sector regimes could save 1.3 percent of GDP. Additional saving that would not reduce the social outcome of the pension system is the simplification of the very complex structure of the pension system: there are about 40 different compulsory schemes with different eligibility criteria and benefits (OECD, 2013). Finally, phasing out remaining incentives for early retirement including the longer unemployment benefit granted to older workers would provide additional savings (OECD, 2013; UNEDIC, 2012).

	Pensions (old age and survivors)	Health	Income support to the working-age population [2]	Other social services	Active Labor Market Programs	Total
France	**13.7**	**9.0**	**5.2**	**3.2**	**1.0**	**32.1**
Denmark	6.1	7.7	7.9	6.9	1.6	30.2
Sweden	8.2	7.3	5.5	7.7	1.1	29.8
Belgium	10.0	8.1	8.1	2.1	1.4	29.7
Finland	9.9	6.8	7.1	4.7	0.9	29.4
Austria	13.5	7.3	5.8	1.7	0.8	29.1
Germany	11.3	8.6	4.4	2.5	1.0	27.8
Italy	15.4	7.4	3.4	1.1	0.4	27.8
Spain	9.3	7.0	6.8	2.0	0.9	26.0
United Kingdom	6.2	8.1	5.6	3.9	0.3	24.1
Luxembourg	7.7	6.6	6.8	2.0	0.5	23.6
Norway	5.4	6.2	6.3	5.0	0.5	23.3
Netherlands	5.1	7.9	6.3	2.7	1.2	23.2
OECD(34)	**7.8**	**6.6**	**4.8**	**2.4**	**0.5**	**22.1**
Czech Republic	8.3	6.7	4.4	1.1	0.2	20.7
Canada	4.5	8.0	5.4	0.9	0.3	19.2
Australia	3.5	6.2	4.5	3.3	0.3	17.8
Korea	2.1	4.0	1.3	1.5	0.4	9.4

Table 3. France: Public Social Expenditure by Broad Social Policy Area
(In percentage of GDP, in 2010)[1]

[1] Countries are ranked by decreasing order of public social expenditure as a percentage of GDP.
[2] Income support to the working-age population refers to spending on: incapacity benefits, family cash benefits, unemployment and other social policy areas categories.
Source: OECD, Social Expenditure database.

21.   According to the OECD (2013), "public spending on healthcare might be reduced by some 1.3% of GDP without impairing quality". It is beyond the scope of this paper to review all the efficiency gains that can be achieved in health spending but two important points can be

made.[14] First, no OECD country dedicates more public spending on health than France (Table 3). At 9 percent of GDP this is about 50 percent more than the OECD average. Second, because the sources of efficiencies in health spending are multifaceted, so are the types of reforms. The OECD (2012) argues that "strengthening the role of market mechanisms, changing reimbursement schemes, improving public management and control and imposing budget caps should form part of a cost containment strategy Due to budget caps (ONDAM), public health spending is growing more slowly in France than on average in the OECD. Going forward, France plans to limit the health spending growth from 3.5 percent in 2008-09 and 2.6 in 2010-12 to 2.5 percent over the period 2014-17. This is well below the ONDAM trend growth estimated at 4 percent.

22.   As part of its plan to improve the efficiency of public spending (*Modernisation de l'action publique*), the government has launched a review of several expenditure categories including family-related spending and worker training. Poor targeting, conflicting objectives, and lack of cooperation at the various levels of governments have been recently documented by the Cour des comptes (2013, professional training and more generally labor policies) and the OECD (2013, family spending). As a result, savings could again be found in these areas while preserving the desired social impacts. From a narrow fiscal point of view, the saving that can be expected are smaller than those from a pension or a health care reform because family spending, though the third largest social spending, accounts for only 2.5 percent of GDP and professional training about 1.6 percent of GDP. However, a reform of the family policy is important because the system is financially unsustainable: family spending accounted for 10½ percent of the Social Security deficit in 2010 and 16½ percent two years later. Moreover, reforms in these areas go beyond the fiscal objective as they could have a positive impact on activation and labor market efficiency. Similarly, the evaluation and the rationalization of public investment launched by the Government should improve project selection and reduce the redundancy of some capital spending.

23.   Social spending saving needs to be complemented by wage bill containment. Besides the fact that international experience suggests that wage bill containment is conducive to successful fiscal adjustment, it should play a role in France for two main reasons. First, reducing the expenditure ratio by 3 points of GDP as envisaged by the authorities cannot be achieved without a contribution from a large spending line such as the wage bill (close to ¼ of total spending). Second, if the growth of the wage bill is not reduced, it may undermine the whole consolidation effort or require even more effort to reduce social spending.

24.   By European standards, the wage bill is large in France (Figure 8). It accounts for more than 13 percent of GDP i.e., 2.5 percent of GDP more than the Euro area average and 5.5 percent of GDP more than in Germany or Switzerland. Only the Scandinavian countries, Cyprus, and Malta have larger wage bills. This suggests that efficiency gains (notably by eliminating overlap and duplications

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[14] See for detailed discussions, the OECD and Cour des comptes reports.

at various levels of government) can also be achieved in the civil service without affecting the quality of public sector.

25.   Moreover, any saving effort would be undermined if the wage bill growth is not contained. The increase in the General Government's wage bill declined from 3.9 percent per year during 1990-2007 to 1.8 percent per year during 2008-2012. This reflects an effort to contain the wage bill growth[15] that should be should be maintained. Given the size of the wage bill in total spending, returning to the pre-crisis rate of growth would undermine the whole consolidation effort or require even more effort to reduce social spending.

Figure 8 - Employee compensation in total GG spending
(In percent of GDP, 2010)

Sources: Eurostat and author's calculations.
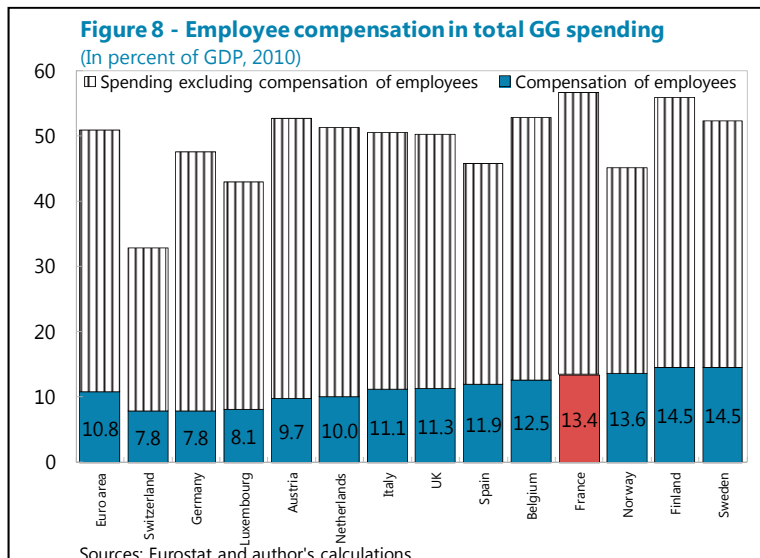
26.   Wage bill containment should take place at all levels of government. In recent years, the state's nominal wage bill has been reduced thanks to wage moderation and measures taken to limit the size of the labor force (Figure 9). However, the impact of this effort on the general government wage bill has been partly offset by the rapid growth in the wage bill of state agencies (ODAC) and local government. Going forward, the government plans to continue its effort and limit the growth of its wage bill to 1 percent during 2012-15 (Ministère des Finances, 2012). As central government employees accounts for only 44 percent of

Figure 9 - Wage bill by level of government
(1986 = 100)

Sources: INSEE and IMF Staff calculation.

General Government employment (INSEE, 2013)[16], this effort needs to be complemented by employment containment at other levels of government[17]. In the past, this was not the case as social

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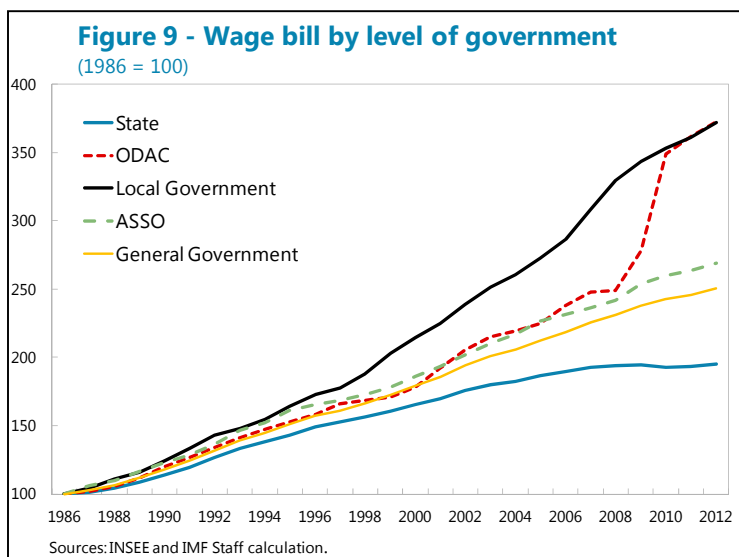
[15] According to the Cour des comptes (2012), without any net job creation, the wage bill trend growth is about 1.6 percent every year.

[16] This number includes ODAC employees.

[17] The wage moderation decided by the government is automatically applied to all levels of government but the government has no direct on job creation at the local level.

security's wage bill and more noticeably, local government's wage bill have grown particularly fast. This is, only in part explained by the decentralization process. The Ministry of Finance estimates that, between 2002 and 2009, local government created 262,458 jobs in addition to the job creation related to the decentralization process (Cour des comptes, 2009 and 2012). Another explanation is the duplication of activities and the overlapping competencies between levels of government.

D. Conclusion

27.   In order to achieve its medium-term objective of a balanced structural budget, France plans to implement a fiscal consolidation split broadly evenly between tax measures and expenditure saving. So far, the government has mostly relied on new taxes and tax increases. Going forward an expenditure saving in the amount of about 3 percent of GDP is required.

28.   Based on international past experience with fiscal consolidation and specificities of the French economy, this paper argues that the effort should focus on reducing social protection transfers. Some social programs, such as family allowances and pensions, are financially unsustainable and would have to be reformed even if no fiscal consolidation was implemented. Moreover, French social spending is the highest in the OECD but also often suffers from inefficiencies and poor targeting. Therefore, if combined with reforms to increase efficiency, eliminate unemployment traps, and boost incentives to join (and stay longer in) the labor force, spending saving could be achieved without reducing the social and redistributive benefits of the French social system.

29.   Achieving this high-quality fiscal adjustment requires that expenditure saving be implemented at all levels of government. Indeed, several social programs are jointly managed by the state, local governments, and the social security system. Similarly, public investment which is prone to redundancy is mostly undertaken by numerous local governments. Another reason is that, accounting for only 15 percent of GDP, central government spending cannot alone absorb a reduction in General Government spending of about 3 percent of GDP.

30.   In addition, fiscal adjustment will be difficult to achieve without limiting the growth of the public sector wage bill. The state has capped its wage bill, but similar measures should be extended to other levels of government.

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FRENCH FIRMS AND GLOBALIZATION[1]

This note (i) reviews trends in exports and investment at the sector level leading to the introduction of the euro and post-euro and their bearing on the near-term outlook; (ii) analyzes the potential drivers of France's expanding industrial capacity during 2003 to 2011 (profitability, sales, and leverage); (iii) discusses challenges to French industrial firms' competitiveness, including non-cost (regulatory) factors, low average efficiency[2], high dependence on external financing, and insufficient research; and (iv) discusses industrial firms' performance during the 2007 to 2009 financial crisis.

A.   Export and Investment Trends

1.   Export performance has deteriorated since the introduction of the euro (Figure 1). This is due to worsening competitiveness and profitability by the export-oriented sectors (see below). Uncompetitive jobs in the manufacturing sector which accounts for the bulk of export growth are vanishing: 400,000 have been lost in the past five years. While Germany has lost about a fifth of its share of world exports, France has lost nearly 40 percent of its share since the euro was launched.[3] The share of the manufacturing sector in GDP is the lowest among Eurozone countries: around 10 percent of GDP in the first quarter of 2013. A historically resilient domestic demand growth has been insufficient to offset the low contribution of net exports, and the average annual real GDP growth (moving average over a past seven-year period to net out business cycle effects) has trended down since 2000, reaching 0.75 percent in 2012, its lowest level in five decades.

Gross Value Added in Manufacturing
(Percent of GDP, constant prices)

Source: Haver Analytics.

Real GDP Growth (in percent)

Sources: Haver/INSEE.
1/ Past 7 years, moving average.
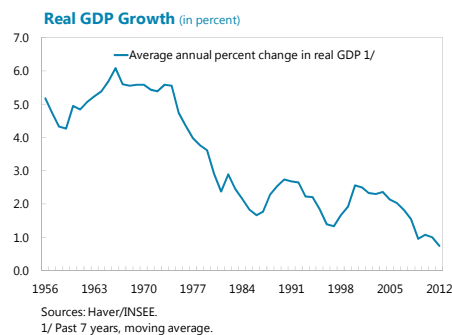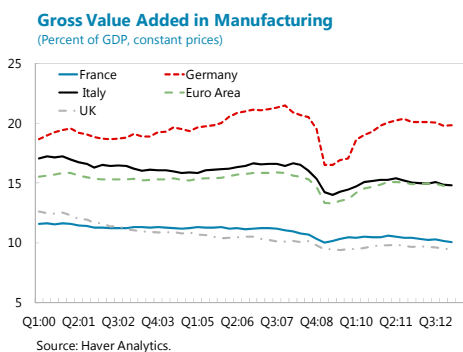
2.   The ratio of fixed investment to GDP in France is high by EU standards. During the trough of the last pre-euro investment cycle in 1997, it was 17 percent of GDP; in 2012, it was 20 percent (Figure 1). This surge of over 3 percentage points represents new capital expenditures of

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[1] Prepared by Hélène Poirson and John McCoy (both EUR).

[2] Measured by total factor productivity (TFP).

[3] For more on market share loss and other indicators of erosion of France's competitive edge, see the 2012 France staff report, available at http://www.imf.org/external/pubs/cat/longres.aspx?sk=40190.0.

over €187 billion, broadly equivalent to the nominal GDP of Greece or Finland. Growth in investment occurred despite lower profitability. French NFCs' profitability (measured by return on assets) fell during the 2008-09 crisis and failed to rebound strongly post-crisis—in contrast to Germany, where NFCs experienced only a temporary set-back during 2008 to 2009 and where profitability in 2011 exceeded pre-crisis levels. Profit margins (gross operating profit-to-turnover) meanwhile are low compared to other major European countries, and also failed to rebound post-crisis.

Return on Assets 1/
(In percent)
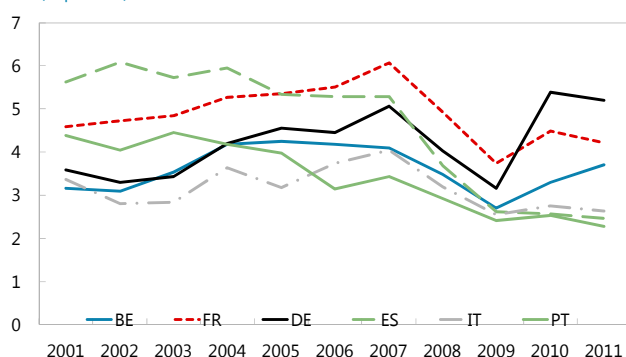
Source: BACH database.
1/ Net operating profit to total assets ratio.

Profit Margins 1/
(In percent)
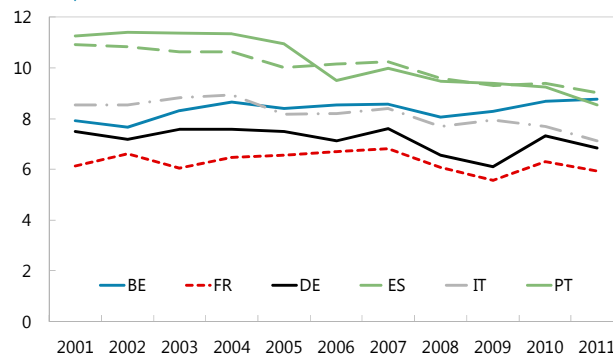
Source: BACH database.
1/ Gross operating profit to turnover ratio.

3.   The post-Euro capacity expansion was directed mainly to non-tradable goods.
Investment in construction was the biggest driver, accounting for 58 percent of investment growth since 2003 (Figure 1). Investment in capital goods, transport equipment, and other industrial goods accounted for 16 percent. Investment in information and communication and other market services accounted for over a quarter of investment growth during 2003 to 2012 (26 percent). While investment in construction resumed strong growth in 2011 and 2012 after two consecutive years of contraction, investment in industrial goods remains depressed after a cyclical rebound in 2010 and 2011 came to an abrupt halt last year. Relative to GDP, investment in industrial goods was marginally lower in 2012 at 4.8 percent than during the pre-euro trough in 1997 (4.9 percent).

4.   The biggest share of export growth during the same period—about 78 percent—came from industrial goods (Figure 1). Export performance has rebounded strongly post-crisis, but without a corresponding increase in investment in capital goods and other industrial goods. The contraction in investment in industrial goods in 2012 is worrisome for external performance if it persists over time, as it would imply a lack of needed upgrade and modernization of equipment and capital. Moreover, a recent survey by INSEE showed that French businesses in manufacturing expect to cut investment by 4 percent in 2013, while in January 2013 they expected to keep investment at

the same level as in 2012.[4] The next section examines the drivers of capacity expansion in industry at the sector level (including profitability, sales revenue, and leverage) with the aim of shedding light on the factors that may influence the near-term outlook for industry-led investment and, by extension, industrial employment, export growth, and competitiveness.[5]

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[4] Factors that may have contributed to the planned cutbacks in investment (despite currently low interest rates) compared to the January survey include the level of current economic activity and expectations on the pace of the recovery, higher taxes, and uncertainty on future taxes and on the outcome of the planned reform of the pension system this year, including its impact on employer contributions.

[5] For a broader sector analysis of profitability and other key corporate vulnerability indicators (including also trade and construction sectors), see European Committee of Central Balance Sheet Data Offices (2013).

Figure 1. Investment Expansion. France

Exports of France
(Exports as a % of GDP)

Euro Introduced
in 2002

Sources: Haver Analytics

Capital Investment in France Surged Pre-Crisis
(Gross Fixed Capital Formation as a % of GDP)

Euro
Introduced in
2002

Sources: Haver Analytics

Contribution to Total Export Growth Since 2003

3% 1%
18%
78%

- Agriculture
- Information & Communication
- Industrial Goods
- Market Oriented Services Less Information & Communication

Sources: Haver Analytics

Contribution to Total Investment Growth Since 2003

10%
16%
16%
58%

- Agriculture
- Information & Communication
- Market Oriented Services Less Information & Communication
- Industry Less Construction
- Construction

Sources: Haver Analytics

Share of Contribution to Investment
(sectoral changes as a % of total gross fixed capital formation)

- Agriculture
- Information & Communication
- Industry Less Construction
- Market Oriented Services Less Information & Communication
- Construction
- Change in Total Investment (RHS)

Sources: Haver Analytics; and IMF staff calculations.

B. Capacity Expansion in Industry and Profit Margins

5.   Capacity expansion in industry has occurred despite most French industrial corporations operating under tight profit margins. Even though capacity in industry has not expanded as much as in services or construction since 2003, it has kept up pace with GDP up until last year, whereas industrial profit margins have been falling over the same period (Figure 2). The resilience of industrial firms' investment is difficult to reconcile with lower returns on sales.

6.   We have attempted to shed light on the investment behavior of French industrial firms with an analysis of 26 industrial sectors covering the energy sector plus manufacturing. The results provide potentially important insights into the investment behavior of French industrial corporations. Profit margins (defined as operating profits over revenue from sales) of manufacturing firms have been trending down and averaged about 5–6 percent over the past ten years. Profit margins in the energy sector are stronger (about double) those of manufacturing firms, but have also been falling during 2003 to 2011. Across manufacturing sectors, the automotive, coking and refining, and computer and electronic product industries face the lowest margins (Figure 3). Strong margins in the leather industry and footwear, and among manufacture of beverages and pharmaceutical companies may help explain the capacity build-up in those sectors.[6]

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[6] However, out of these four sectors, only the leather industry and footwear has enjoyed rising profit margins over the period. The tobacco industry (not captured in our analysis due to missing data in 2003) has also seen an increase in margins from less than 3 percent in 2004 to 35 percent in 2011. Tobacco firms only made up 0.15 percent of total industrial firm turnover in 2011.

**Figure 2. Profit Margins: Industrial Sectors
(in percent)**
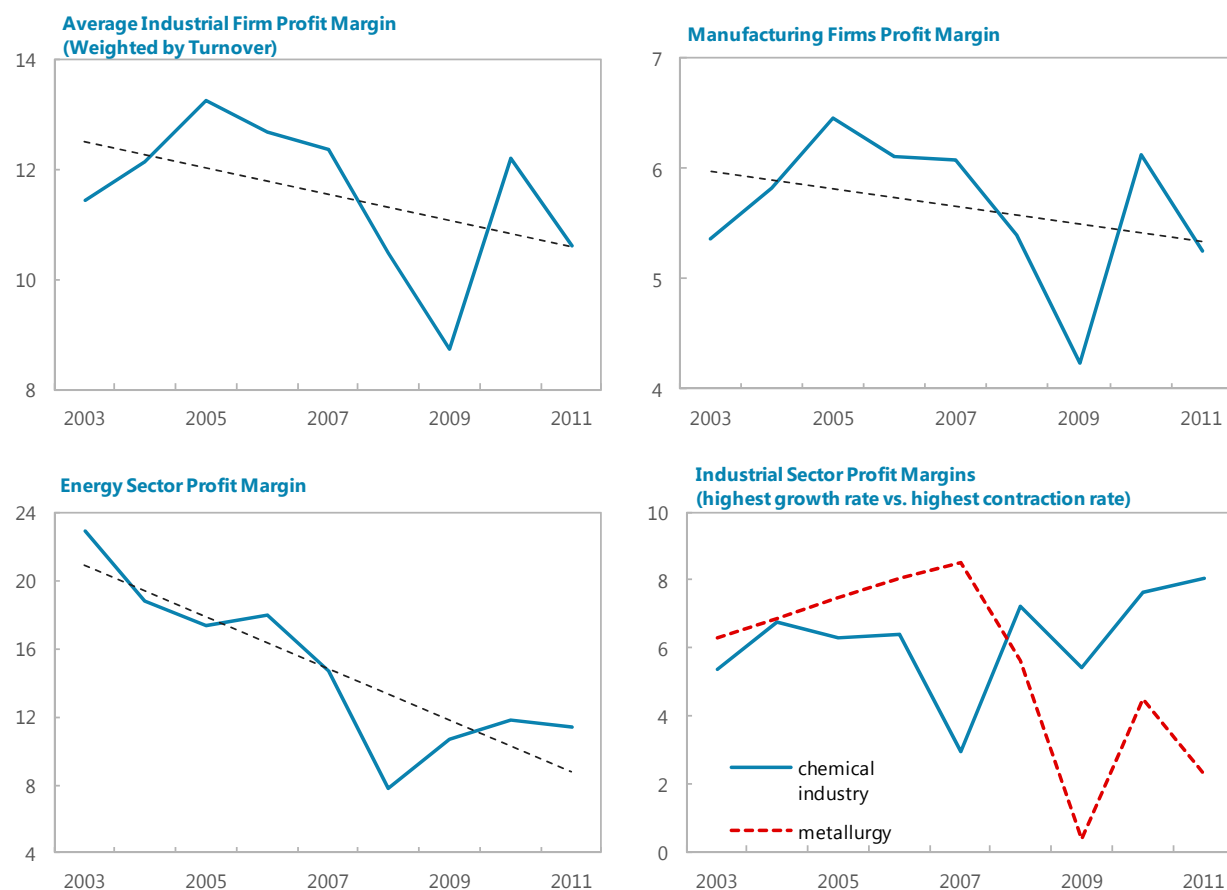
Source: Banque de France (BACH database); and IMF staff calculations.

7.   **We attempt to gain a clearer picture of the dynamics underlying the relationship between profitability and capital expenditure by looking at the correlations between change in tangible fixed assets and the following variables:**

- Profitability growth

- Profit margins (average gross operating profits-to-sales ratio)

- Change in profit margins (net change in average gross operating profits-to-sales ratio)

- Sales revenue (turnover)

- Liabilities (average liabilities-to-assets ratio) and

- Change in liabilities (net change in liabilities-to-assets ratio), where "liabilities" is defined as all financial liabilities including, but not limited to, borrowings.

Figure 3. French Industrial Firms: Profit Margins

Industry Margins from 2003-2011

Industry Margins from 2003-2011 (continued)

Sources: Banque de France (BACH database) and IMF staff calculations.
Notes: A blue box represents an increase in operating margins over the period 2003 to 2011, while a red box represents a decrease. The minimum (maximum) value over the period is denoted by a triangle (diamond).
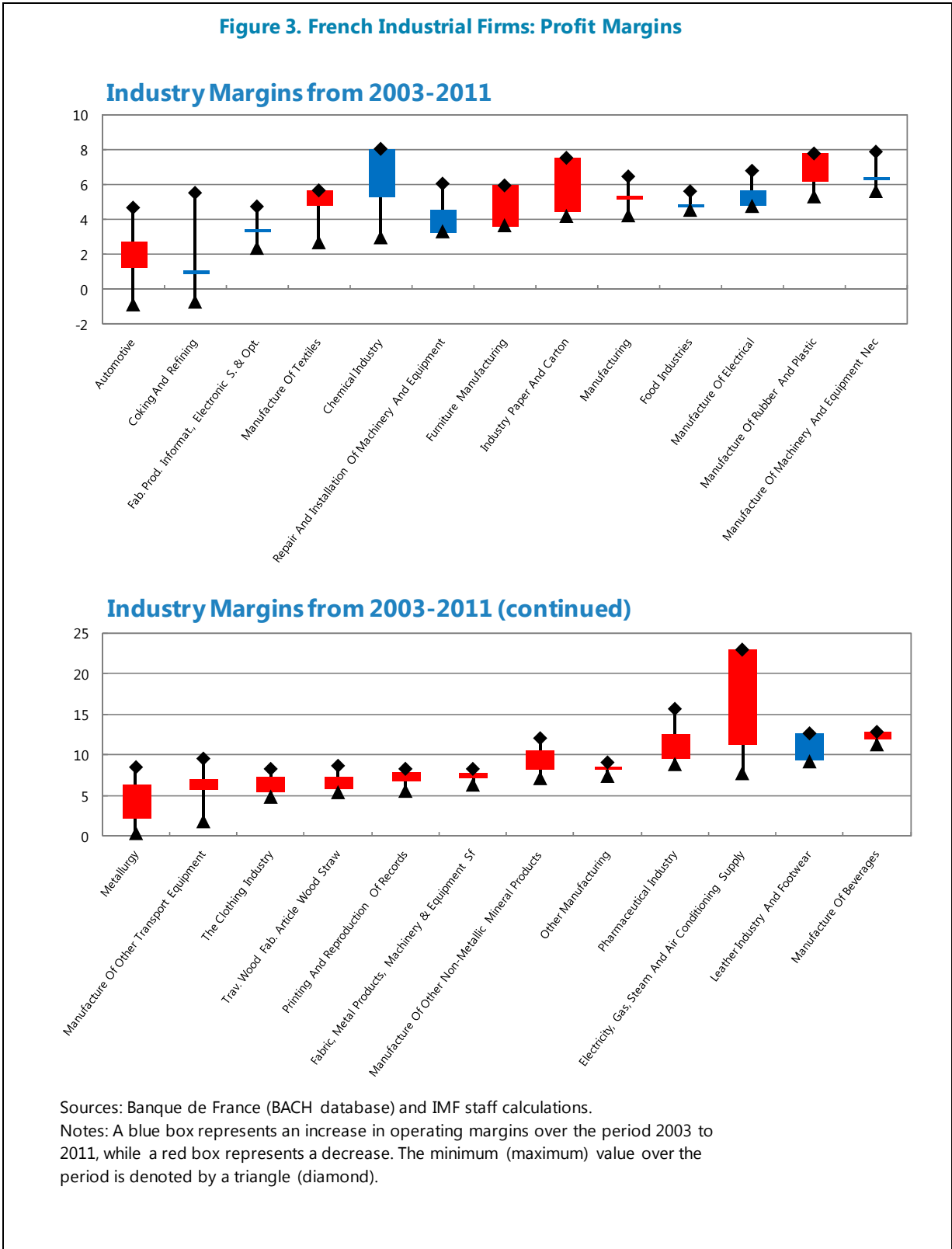
8.   **Bivariate regression results and scatter plot charts of these relationships from 2003 to 2011 are shown in Figure 4**. Some key observations arise from the analysis:

- Profitability growth (change in profits) and the change in profit margins show a negative relationship with capital expenditure growth, suggesting that firms which experienced worsening profit margins were still able to increase capacity.

- The average profit margin has a strong positive influence on investment growth.

- Sales revenue growth (change in turnover) shows very little correlation with capital expenditure growth and does not appear to be a major driver of France's industrial capacity expansion.

- High financial liabilities do not seem either to be a constraining factor in investment activities. The analysis shows that investment behavior is little influenced by debt levels.

- Net change in liabilities is supposed to have a negative correlation with capital expenditure growth, but our analysis finds only a weak (negative) relationship.

9.   **These observations point to low profitability as a key constraint for French industrial firms attempting to grow business scale**. Faced with low margins, firms have limited ability to self-finance investment. The impact on investment in aggregate has been offset partly, however, by continued access to external financing which enabled firms to increase capacity even as they faced falling margins. The pattern of firms' behavior also suggests that neither the level of financial liabilities nor their change over time has much influence on investment growth. This finding implies that current debt levels are not constraining access to finance by being perceived as too high. Despite recent increases, average indebtedness of the non-financial corporate sector remains moderate compared to other major advanced countries.[7]

10.   **The declining trend in average profit margins over time masks important differences across firms; it is too early, however, to identify an impact of different profit trends on investment behavior.** A closer look at the profitability patterns over time shows that, while most firms have faced falling margins (including both large and small firms, and highly indebted vs. less indebted firms), some companies have succeeded in raising profitability since 2008. Those include firms which have (i) contained staff costs and (ii) incurred lower debt servicing costs (Figure 5). Since the improved profitability of this subset of industrial firms (with lower than average wage costs and interest burden[8]) is recent, it may be too early yet to identify its impact on investment behavior. Figure 5 shows the investment (in percent of total balance sheet) for the subset of firms above, and there is no evidence yet that their recently improved profitability has resulted in higher investment.

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[7] The debt-to-GDP ratio of France's NFCs was around 125 percent in 2012, compared to about 161 percent in the United States, 158 percent in Japan, and 132 percent in the euro area as a whole (Banque de France, 2013).

[8] Measured by net interest expenditure as a percentage of gross operating profit.

Going forward, however, those firms appear well positioned to increase capacity in response to an upswing in demand.

Figure 4. France: Industrial Firm Investment, 2003 vs. 2011

Change in Tangible Assets (2011 vs. 2003) vs. Change in Profit Margin (2011 vs. 2003)

Change in Tangible Assets (2011 vs. 2003) vs. Change in Profits 2011 vs. 2003)

Change in Tangible Assets vs. Profit Margins (2003-2011 Average)

Change in Tangible Assets (2011 vs. 2003) vs. Change in Turnover (2011 vs. 2003)

Change in Tangible Assets (2011 vs. 2003) vs. Liabilities-to-Asset Ratio (2011 vs. 2003)

Change in Tangible Assets (2011 vs. 2003) vs. Liabilities-to-Asset Ratio (2003-2011 Average)

Sources: Banque de France (BACH database); and IMF staff calculations.

Figure 5. French Manufacturing Firms: Average Gross Profit Margins (in percent)
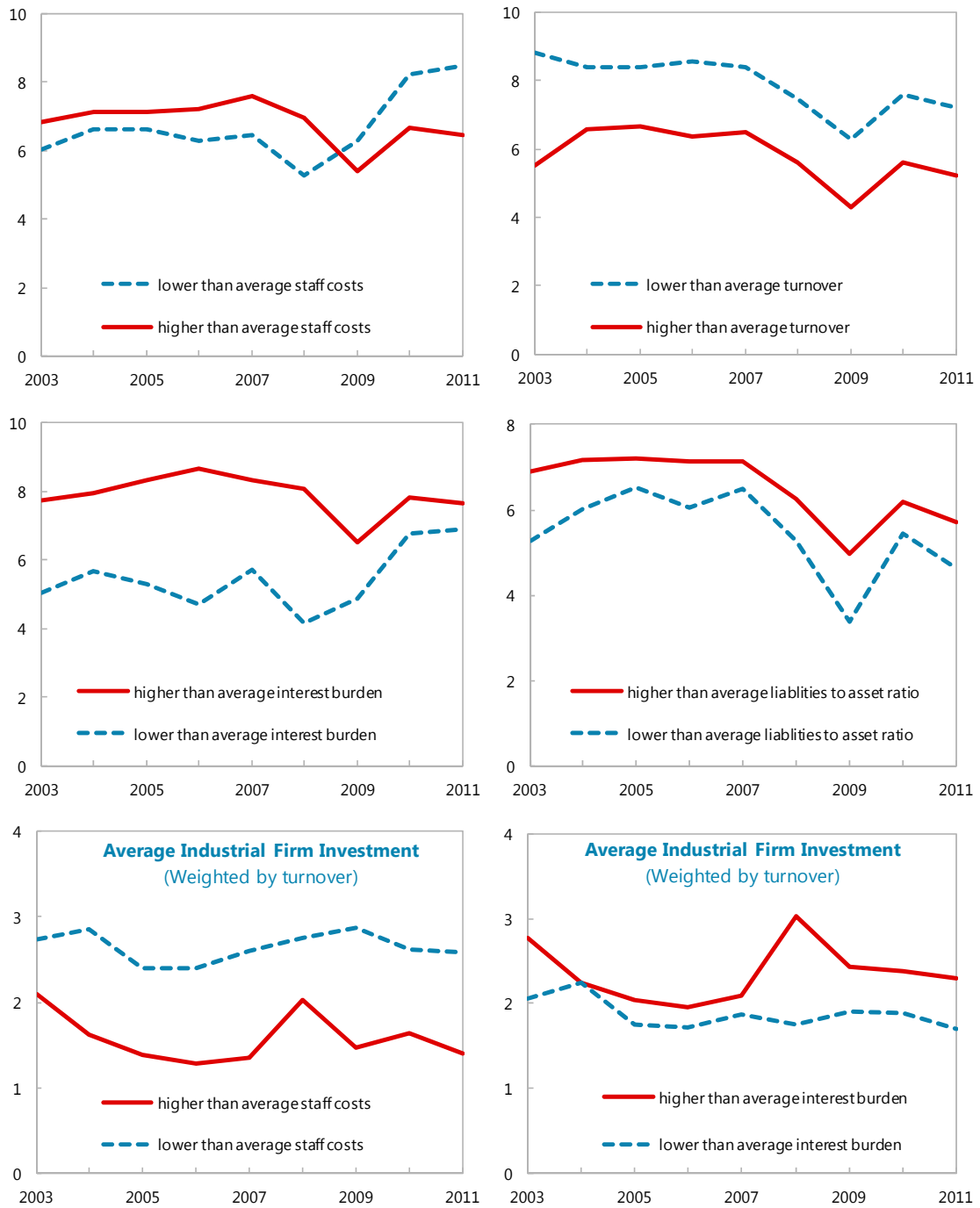
Source: Banque de France (BACH database); and IMF staff calculations.

C.   The Erosion of Competitiveness: Evidence from Enterprise-Level Data

11.   The manufacturing sector's competitiveness gap is long-standing and pre-dates the crisis. This section relies on internationally comparable and harmonized enterprise-level EFIGE survey data to assess differences in international competitiveness both within France and between France and other major European countries.[9] By measuring the entire range of international activities of firms, the EFIGE data provide a richer picture of a country's external or international competitiveness, overcoming the limits of standard competitiveness measures (e.g., unit labor costs) by allowing for heterogeneity in firm performance and by allowing the identification of a full set of features which make firms internationally competitive. Notwithstanding the usual limitations of survey data (e.g., reliance on self-reporting and interpretation by respondents of the questions and data availability only for a single point in time), the EFIGE dataset currently provides the most comprehensive and publicly available set of indicators (both quantitative and qualitative) of European firms' innovation and international activities pre-crisis and during the crisis. Altomonte, *et al.* (2012) find that international exposure is positively correlated with firm performance measured by its TFP level, hence we focus on TFP as our preferred measure of competitiveness. The comparatively low productivity of French manufacturing firms prior to the crisis is reflected in low TFP relative to other major EU countries (Figure 6 and Appendix Table 1). The TFP level (or efficiency, measured in log) on average for firms sampled in the EFIGE survey during 2001 to 2007 was -0.1, compared to 0.2 in Germany and 0.1 in the U.K. Italian firms had the lowest TFP levels during the same period (at around -0.2).[10] Both French and German firms showed resilience during the crisis compared to their peers in the U.K. or Italy, which experienced a comparatively large TFP contraction in 2008-09 relative to 2001–07, but average TFP in France in 2008–09 was still lower than in Germany.

12.   Low competitiveness in turn has led to export weakness. Based on export share (measured by the ratio of exports to turnover), French firms are the least internationally active among the EU4. The average export share in 2008 (at the time the EFIGE survey was conducted) was 29½ percent, 1¾ percentage points below Germany and 6¼ percentage points below Italy.

13.   Investment has also been lagging. The firm-level evidence suggests that French manufacturing firms invest less than their counterparts in the EU4, with investment ratios (investment-to-turnover ratio) averaging 8¼ percent compared to almost 12 percent for German firms and close to 9 percent for Italian and UK ones. The weakness of export growth and the

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[9] This section uses firm-level EFIGE data available at http://www.bruegel.org/. EFIGE stands for "European Firms In a Global Economy: Internal policies for external competitiveness" and provides quantitative and qualitative indicators of firms' pattern of internationalisation. Data consists of a representative sample (at the country level for the manufacturing industry) of almost 15,000 firms in seven European countries, including roughly 3,000 for Germany, Italy, and France, and slightly more than 2,000 for the U.K.

[10] Since TFP is measured in log, a negative value corresponds to an average level of efficiency of resource use comprised between zero and one.

resulting perception of a lack of demand (see below) may have contributed to the low investment levels.

14.   Weak ability to export and investment by tradable sectors are symptoms of a "competitiveness gap" and can be traced down to several inter-related factors. Competitiveness in this study is looked at through three different lenses: (i) investment ratio (investment/turnover); (ii) export share (exports/turnover); and (iii) the level of TFP, a measure of the efficiency with which firms utilize resources (capital and labor). The latter is our preferred measure of competitiveness as investment and exports also reflect sector and cyclical effects. A competitiveness "gap" is indicated by the distance between France and the best EU4 performer (Germany) in terms of TFP levels.[11] France's competitiveness gap as so defined is larger than that of the UK and smaller than that of Italy (Figure 6). Based on this paper's results, two sets of factors appear to be the root cause of the competitiveness problems, including (1) some key characteristics of French NFCs which constrain their international activities and (2) the broader operating environment, including the regulatory framework and other country-specific, structural, factors. As relates to (1), the main findings of the analysis can be summarized as follows:

- First, a **size** effect (high proportion of very small firms) seems to hinder competitiveness—broadly defined as the capacity to innovate and expand operations abroad. Almost three-quarters of firms surveyed are under 49 employees in France, compared to less than two-thirds in Germany. Given the plethora of firms with less than 50 employees, the median firm size is 27, similar to Italy (26), but lower than in the U.K. (29) and Germany (35). In a related vein, a comparatively large share (13¾ percent) of French enterprises feel that their scale of production is not adequate (compared to less than 8 percent for their German peers). Econometric results confirm that size is a significant determinant of ability to engage in export activities both directly and through the indirect impact on efficiency (TFP). The threshold

Industrial Firms
percent of firms, number of employees
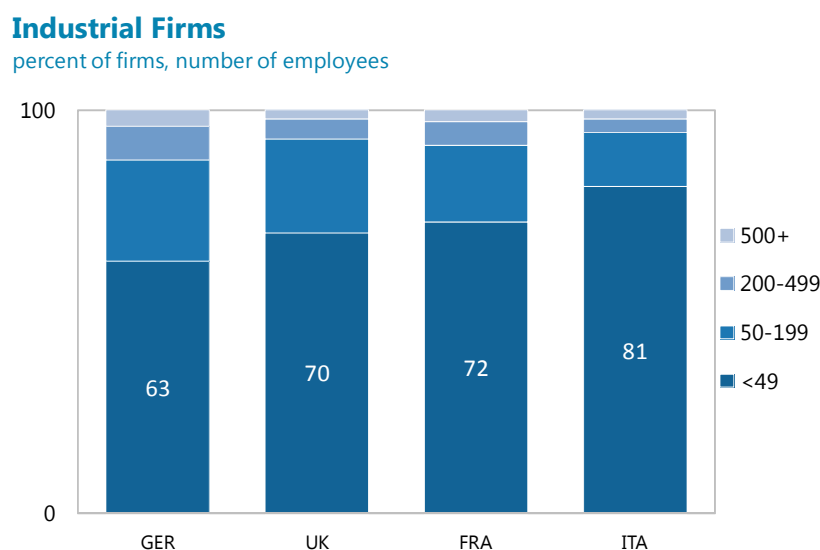
Source: EFIGE Survey.

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[11] The finding of Germany as the competitiveness benchmark based on TFP level (average over 2001 to 2007) is consistent with other indicators such as export market share. While TFP is calculated as a residual and thus may also capture cyclical effects, the use of average TFP over a relatively long period should minimize this concern.

for significantly higher export orientation seems to be 200 employees based on the regression findings, and 500 employees in the case of TFP implying that the medium-to-large firms (over 200 employees) are more likely to export and the largest firms (with over 500 employees) are statistically and significantly more efficient than the other firm categories *ceteris paribus*;[12] by contrast, size appears to make no significant difference across French firms for investment activities.

- Second, a relative **lack of innovation** is also a key obstacle to competitiveness. The overall level of research and development (R&D) and innovation (revenue from innovative products sale) in France's manufacturing sector is lower than in EU4 peers. While French firms in some industries (e.g., high tech industries) have a relatively high research intensity compared, for example, to their German peers, the average R&D investment is lower than in Germany, reflecting in part differences in industrial structure between the two countries.[13] The low level of R&D activities in turn appears as a key determinant of both export orientation and investment activity.

- Third, firms are more **dependent on external finance** than EU4 peers, both for investment and R&D activities,[14] and control by large owners is somewhat less than in Germany[15]; our results suggest that both of these characteristics (the ability to self-finance investment and ownership concentration) are statistically and significantly related to export capacity (both directly and via the indirect positive effect on TFP).

- Fourth, while both French and German firms receive generous **financial incentives** in comparison to EU4 peers (around one fifth of NFCs report benefiting from financial incentives provided by the public sector in both countries compared to 9 percent in the U.K. and 14 percent in Italy), France's manufacturing sector (similar to Italy) benefits from tax incentives to a larger extent than the U.K. or Germany (around 23 percent of NFCs in France and Italy report benefiting from **tax incentives**, more than twice the share reported in the U.K. or Germany); findings from the regression analysis suggest that financial and tax incentives support the ability to engage in international activities ceteris paribus, however they have no significant effect on TFP and only financial incentives have an effect on investment, thus the channel through which such incentives raise the ability to export remains unclear.

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[12] Size thresholds are identified using categorical dummy variables for firms: very small (less than 50 employees); small (50 to 200 employees); and medium (200 to 500 employees), with large firms (over 500 employees) as comparators. When the econometric results point to statistically significant differences in the coefficients.

[13] See Ministère de l'Enseignement Supérieur et de la Recherche (2012).

[14] During 2007-09, less than half of firms surveyed report financing their investments with internal sources. By comparison, around half of Italian firms, 57 percent of German firms, and 70 percent of U.K. firms rely on self-financing (Appendix Table 1).

[15] At the industry level, ownership concentration is lower than in Germany although higher than in the U.K. or Italy. German firms appear to be tightly held with over three-quarters of capital held on average by the largest shareholder, compared to 73¼ percent for their French counterparts.

- Fifth, France's manufacturing industries seem to have less **market power** than EU4 peers. A higher proportion of French firms (41¾ percent) report being price-takers (i.e., face prices fixed by the market) compared to shares of 32¼ to 39¼ percent in the other EU4 countries). The lack of market power statistically does not seem to constrain capacity to export or investment; however we find that firms lacking pricing power curtailed investment plans more severely during the crisis.

- Lastly, the manufacturing sector's reliance on **offshore production** (i.e., the extent of activities carried out through foreign direct investment (FDI) in either offshore affiliates or foreign controlled firms, and the production activities through contracts or agreements with foreign local firms) does not seem noticeably different from that of EU4 peers except the U.K., where there is greater use of production through FDI and contracts or agreements with foreign local firms than in the other countries. Econometrically, reliance on production abroad does not seem to be a significant factor contributing to differences in competitiveness across French firms.

15.   French firms are also at a disadvantage compared to European peers due to a less favorable operating environment and an orientation toward lower-growth export markets (Figure 7).

- Nearly half of firms surveyed consider that legislative and bureaucratic restrictions prevent their growth and 40 percent feel that labor market regulations restrict growth. By contrast, less than 10 percent of German and U.K. firms consider legal and bureaucratic regulations as an obstacle to growth and less than 5 percent mention labor market regulation as a factor preventing growth.

- A majority (59 percent) of French companies report facing lack of demand. This in turn partly reflects the traditional orientation of exports toward "old" markets and difficulty of expanding in "new" markets. Over 55 percent of exports in 2012 were directed toward slower growth markets (including Europe, US, and Japan) and only 13 percent toward faster growing emerging countries.

Average Real GDP Growth 2000-2011

French Export Share=13%

French Export Share=57 %
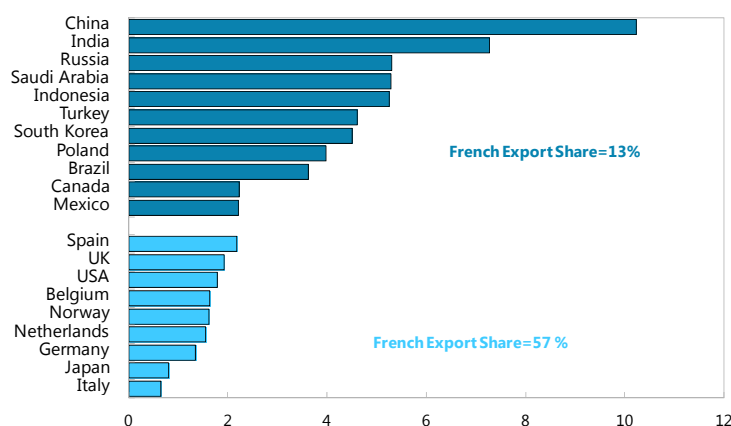
Sources: IMF; WEO and DOT.

16.   The next section presents stylized facts and regression results on the factors underlying French firms' ability to grow, innovate, and expand in new markets. The survey responses refer to the period 2007 to 2009, although some questions describe changes that took place in 2009 compared to 2008. The latter allow us to explore whether characteristics that affect

firm performance during "tranquil" times also makes them more or less resilient during "crisis" times. The survey results are summarized in Appendix Table 1. In the case of France, Appendix Table 1 shows the break-down of survey responses by size (measured by both workforce and turnover), sector (high-tech, traditional, specialized, and economies of scale industries), and export intensity. For the comparator countries, only averages are shown due to space constraints.[16] The next section presents the results of detailed analysis of the French survey data (about 3,000 individual firm observations), as well as cross-section regression results for the same sample.[17]

Firm Characteristics

17.   Firm size appears to constrain export performance by hampering the ability to compete in economies of scale and high-tech products. Size (measured both by workforce and revenue) appears positively correlated with international activities measured by the export share. While large firms (turnover of more than €250 million) export almost half of their turnover on average, small firms (turnover under €1 million) export only 27 percent. There also seems to be a size threshold for participation in economies of scale and high-tech industries, possibly because of high fixed costs associated with these activities. Since those industries are also the most export-oriented, this could be an important channel through which size affects export performance.

18.   In aggregate, size also seems to hinder innovation. Research and development (R&D) activities in the French manufacturing sector appear to be carried out at both ends of the spectrum, i.e. by the smallest and the largest firms. The smallest firms (less than 50 employees) invest around 7 percent of their turnover in R&D (compared to 7¾ percent for the companies with 500+ employees) and they also derive a relatively high share of revenue from innovative products (20½ percent vs. around 21 percent for the firms with 500 employees or more). On average, however, French firms lag behind EU4 peers in terms of both innovation indicators, suggesting that a high level of innovation by the ends of the distribution is insufficient to offset weak performance by the "middle".

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[16] The detailed break-down is available from the authors upon request.

[17] Previous analyses of the EFIGE dataset used pooled data across countries, controlling for country fixed effects. This approach assumes that the equation coefficients are the same across countries, which may not hold in practice due to differences in legal and institutional settings. For instance, legal rights of minority investors differ quite substantially between France and Germany (Berger and Lefèbvre, 2012), and so control by large owners (one of the explanatory variables included in the basic specification) may have different effects on firm performance in the two countries.

Figure 6. Total Factor Productivity

Total Factor Productivity Pre-crisis average TFP (2001-2007)

Total Factor Productivity Pre-crisis average TFP (2001-2007)

Total Factor Productivity Pre-crisis average TFP (2001-2007)

Total Factor Productivity Pre-crisis average TFP (2001-2007)

Total Factor Productivity Pre-crisis average TFP (2001-2007)

Average First Shareholder share of Capital
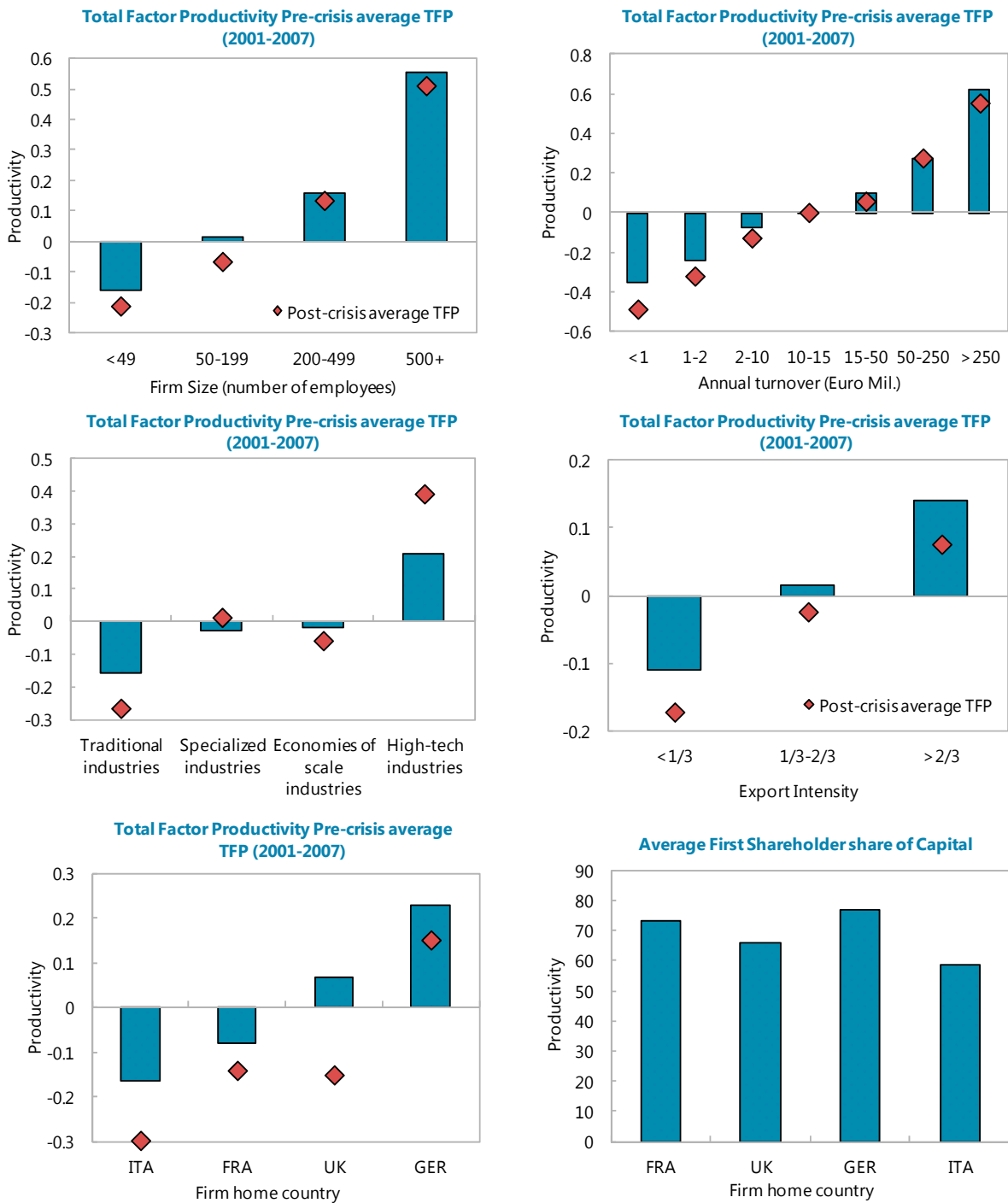
Source: EFIGE Suvery.

Figure 7. Factors Preventing Growth: Industrial Firms
(in percent of all firms surveyed)

Firms that feel that financial constraints prevent growth

GER	ITA	UK	FRA
22	31	34	49

Firms that feel that labour market regulations prevent growth

GER	ITA	UK	FRA
4	27	4	40

Firms that feel that legislative or bureaucratic restrictions prevent growth

GER	ITA	UK	FRA
8	26	4	45

Firms that feel that lack of management and/or organisational resources prevent growth

GER	ITA	UK	FRA
4	14	5	23

Firms that feel that lack of demand prevents growth

GER	ITA	UK	FRA
23	55	21	59

Firms that feel that other constraints prevent growth

GER	ITA	UK	FRA
42	11	54	22

Source: EFIGE Survey

Figure #8. France Firm Peer Comparison
(Germany =100)
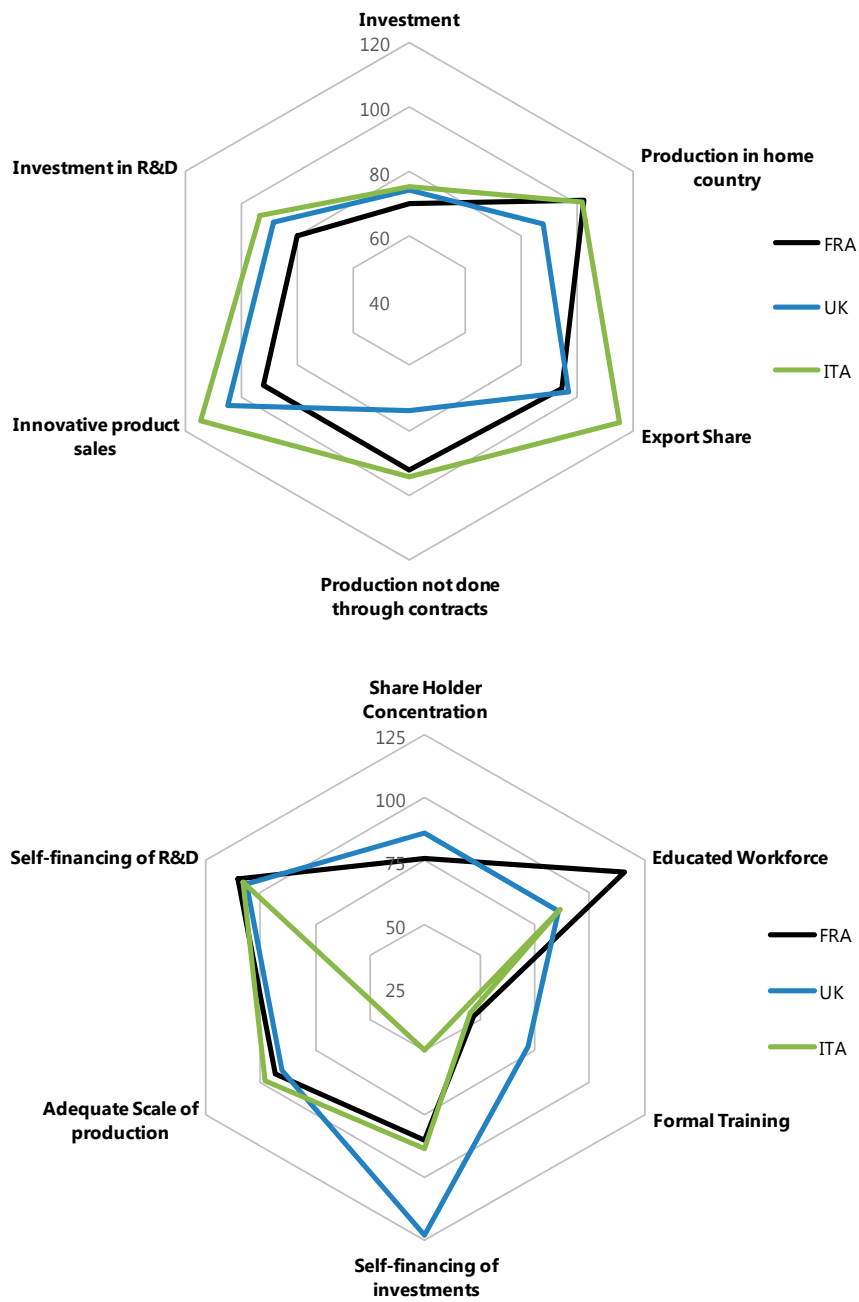
Source: EFIGE Survey.

19.   Investment activity by contrast bears no obvious relation to size. The larger companies, more prevalent in export-oriented industries (export share above one-third), in aggregate invest relatively less of their revenue (around 7½ percent or 1 percentage point less than the smaller, more domestically-oriented, firms). However, the sector breakdown shows that amongst the export-oriented (economies of scale and high-tech) industries dominated by large firms, the economies of scale industries have relatively high investment ratios of 8½ percent on average compared to only 7 percent for the high-tech industries; similarly, among the less export-oriented (traditional and specialized) industries where small firms are more prevalent, the traditional industries have relatively high investment rates of 9 percent on average compared to 7 percent for specialized industries.

20.   TFP—our preferred measure of competitiveness—shows a strong correlation with size, as well as with export performance. The size threshold for better TFP outcomes suggested by the decomposition in Figure 6 appears to be relatively high (500 employees or turnover above €250 million). By sector, the high-tech enterprises stand-out as the best performers, while traditional industries are the least efficient, and the TFP performance of specialized and economies of scale industries is broadly similar (and lackluster). The decomposition by export share shows that firms exporting over one-third of revenue (and especially those exporting over two-thirds of revenue) enjoyed on average better TFP outcomes, possibly because of higher exposure to competition and/or foreign knowledge transfer, as the rate of foreign ownership is higher amongst exporting firms. The direction of causality, however, is unclear as higher TFP firms are also more likely to be able to expand internationally.[18]

21.   Size also bears a positive correlation with the ability to self-finance capacity expansion. The smallest firms (those that employ 50 employees or less, or have turnover below €10 million) are the most reliant on external financing for investments, suggesting that they do not generate enough resources internally to fund their growth. This dependence on external finance in turn appears to constrain their growth. Over 15 percent of small enterprises (under 50 employees) report that their scale of production is not adequate compared to around 10 percent for the other categories.

22.   A concentrated ownership structure is more commonly found in the export-oriented firms. Survey results indicate a positive correlation between the presence of large shareholders and export ratios, but ownership concentration (a larger controlling stake by the first shareholder) shows no clear relation with size. Ownership concentration may improve company performance (measured by TFP or other indicators of firm value such as Tobin's Q) and so ability to export by contributing to the solution of agency problems in large companies and/or by enabling owners to implement value-maximizing changes in small or medium-sized companies.[19]

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[18] The reverse causality from TFP to export orientation is confirmed in multivariate regression results discussed further below.

[19] The empirical evidence supporting this result is mostly for the U.S. and the U.K. See Pedersen (2003) for a survey.

23. **Owner-identity may influence the link between large owners and firm performance**.
Pedersen and Thomsen (2003) find that in a continental European setting where ownership
concentration is high and minority investor protection is low, ownership concentration has a positive
effect on firm value only when the largest owner is a financial institution or another corporation.
There is no effect of ownership concentration on firm value when the owner is a family or a single
individual, and a negative effect when the largest owner is a government organization. The results
for our sample can be summarized as follows:

- Corporate ownership is more prevalent in France than in the other EU4 and is the preferred
  ownership form for high-tech enterprises. Almost 30 percent of firms compared to 10-
  13 percent in the other countries are owned by either an industrial or a holding firm. Within
  France, corporate ownership is dominant among high-tech firms (44 percent) and exporting
  firms (42-50 percent). Corporate ownership is also high in the economies of scale and
  specialized industries (37 percent), and less common in traditional industries (22 percent).

- The rate of financial ownership is low, at around 1 percent, similar to the U.K. and Germany, and
  higher than Italy (0.3 percent). Similar to corporate ownership, financial ownership is a more
  common occurrence for high-tech enterprises and exporting firms (2-3 percent of NFCs in those
  sectors report being owned by a bank or other financial institution).

- Foreign ownership at 11¾ percent is similar to the U.K. level and high compared to Germany
  (6¾ percent) and Italy (5¼ percent). Rates of foreign ownership for very small firms are only
  about half the average level. By contrast, the foreign-ownership rate is nearly 40 percent
  amongst the export-oriented companies (exporting two-thirds or more of revenue).

- Government ownership is limited to 0.9 percent of firms surveyed, and appears largely confined
  to stakes in the largest firms as well as high-tech small and medium sized enterprises (SMEs).

- Family ownership is less common than in Germany (where nearly 60 percent of NFCs are family-
  owned, compared to around 42 percent in France and the other EU4). Family ownership
  characterizes firms with 50 employees or less (47.5 percent report being owned by an individual
  or group of individuals, compared to 30 percent or less for the other categories), many of them
  in the traditional, less export-oriented, industries (46 percent of family-owned firms).

- The survey results also suggest that smaller firms are more likely to be headed by the individual
  owner or a member of his family, rather than a manager appointed from within the firm or
  recruited externally.

24. **Several characteristics of the workforce set French manufacturing firms apart from
their EU4 peers:**

- The human capital level in terms of education levels is comparatively high with 18 percent of
  firms employing university graduates (the highest among the EU4); within France, the smallest
  and largest firms appear to be the most intensive in human capital (measured by tertiary

education); by contrast, medium-sized companies employ a lower proportion of university graduates (consistent with their relatively low level of innovation as discussed above); French export-oriented firms are also relatively human-capital intensive;

- French NFCs provide comparatively less on-the-job human capital, with a participation rate in formal training programs of 21½ percent, higher than Italy (12½ percent) but lower than in the U.K. or Germany (both around 25 percent); within France, larger firms are more likely to enroll employees in formal training programs;

- The use of employees on fixed-term contracts is more extensive than in Germany or Italy, although less so than in the U.K., and shows no clear relation with size; reliance on fixed-term contracts tends to be somewhat higher in traditional and economies of scale industries, and shows no clear relation with either firm size or export orientation.

Factors Constraining Growth

25.   **Smaller firms seem disproportionately affected by the regulatory environment and also report facing higher financial constraints than larger firms**. Over 40 percent of the smaller firms (with less than 50 employees or turnover below €10 million) report labor market regulations and legislative or bureaucratic restrictions as factors preventing growth, compared to 30 percent or less of the larger firms. A majority of smaller firms (52 percent of firms with less than 50 employees) also perceive that their growth is hampered by financial constraints, compared to only one-fifth of the largest firms (employing 500 or more employees).

26.   **The smallest SMEs also lack managerial and organizational know-how**. Nearly a quarter of the smaller enterprises (with less than 50 employees or turnover below €10 million) consider this factor as preventing their growth, compared to 12½ percent of the largest firms (employing 500 or more employees).

27.   **Financial constraints and lack of managerial resources are considered much less constraining by exporting firms (deriving over two-thirds of revenue from exports), perhaps due to the fact that these firms also tend to be larger and/or professionally managed**. Labor market regulations are also perceived by fewer exporting firms (30½ percent) as a constraining factor, possibly due to a relatively high share of foreign-owned firms in the export sector; however, legislative and bureaucratic restrictions appear to be an important constraining factor for all firms irrespective of their export or domestic orientation. Only 16 percent of the exporting firms (deriving over two-thirds of revenue from exports) report lack of management or organizational resources as a factor preventing growth compared to about a quarter for the other firms.

What are the Key Drivers of Firm-Level Performance?

28.   **Through regression analysis, we attempt to uncover the firm-level characteristics that impact exports, investment, and TFP performance**. The basic regression framework controls for size (workforce), efficiency (TFP), export intensity, ownership concentration (share of capital held by

the first shareholder), extent of self-financing of investments (share of investments financed from internal sources), and sector.[20] We then augment this basic specification with other potential determinants of performance, including innovation activities (share of innovative product sales in revenue and R&D spending), financing of innovation (extent to which R&D is self-financed), human capital intensity (percent of university graduates employed and percent of employees enrolled in formal training), large owner identity, flexibility of workforce (use of fixed-term contracts), pricing power (whether the firm is a price-fixer or a price-taker), extent of production abroad (percent of production activities from foreign affiliates or controlled firms; and percent of production activities through contracts and agreements with local firms); and government incentives (dummy variables equal to 1 if the firm received financial incentives or tax incentives, respectively). All the equations are estimated on cross-sectional French NFC data and control for regional- and industry-specific effects.

29.   Appendix Table 2 presents the econometric results for the main variables of interest. The findings of estimation of the basic specification emphasize the role of production scale (size) as a key characteristic impacting firm export performance and efficiency (TFP). The results also suggest that the ability to export a large share of turnover is significantly lower for NFCs with less than 200 employees, and this effect of size on export orientation seems to be over-and-beyond its indirect impact through the TFP channel. This confirms the finding in Berthou and Hugot (2012), using labor productivity rather than TFP to control for efficiency.[21] Control by large owners and a higher reliance on self-financing for investments both appear to be associated with better export outcomes. Production scale and reliance on self-financing are also significant factors contributing to improved TFP outcomes, with estimated coefficients on the size dummies suggesting a threshold of 500 employees for significantly better TFP performance.[22] Unlike export ratios and TFP, investment ratios seem unrelated to size, and are statistically and significantly *negatively* related to reliance on self-financing after controlling for size, sector and region effects, export orientation, and presence of large owners. In other words, firms that relied more on self-financing invested less, everything else equal. This finding is consistent with the higher investment ratios of industrial sectors with higher leverage and/or interest burden relative to sectors with lower dependence on external financing (see Figure 5 in Section B). Finally, the coefficient on the export share variable is positive in both the investment and TFP equations, although it is only statistically significant in the former.

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[20] The basic specification follows the approach of Bugamelli, *et al.* (2009), except that their leverage variable is replaced by the share of investment financed from internal sources (self-financing) since the EFIGE database does not include balance sheet data, and the workforce variable is replaced by a set of categorical dummy variables (size 1, 2, and 3) given that the EFIGE public dataset censors the employment numbers for the largest firms to prevent their identification. Our basic specification also additionally controls for ownership concentration.

[21] The authors estimate export regressions on the full EFIGE sample of 7 countries, so implicitly assuming that the relationships are similar across countries.

[22] For more on the triggers of competitiveness see Altomonte, *et al.* (2012).

30.   A similar basic specification is used to investigate the impact of the 2008 to 2009 crisis on French firms (Appendix Table 3). The dependent variable for the regressions in Appendix Table 3 is the percent reduction in planned investment, exports, and workforce in 2009 relative to 2008 reported by the firms in the survey (in absolute value, and only for firms reporting a reduction; hence, the dependent variable measures the size of the fall experienced in 2009 for firms that were impacted by the crisis and the number of observations is accordingly less compared to the results in Appendix Table 2). The findings imply that more efficient firms (i.e., with higher initial TFP) experienced a smaller fall in exports and workforce while those more dependent on external financing experienced a larger reduction in investment plans. In terms of export performance, the smallest firms appear to have been hurt the most by the crisis, while no significant differences across firms due to size can be detected for employment and investment performance during the crisis. In terms of employment loss, the results suggest that export-oriented firms *ceteris paribus* adjusted significantly less than others.

31.   Adding additional variables one by one to the basic specification in Appendix Tables 2 and 3 allows us to investigate the role of other potential determinants of competitiveness. Market power does not appear as a constraint on either export activity or efficiency, and the lack of pricing power is in fact positively associated with investment activities *ceteris paribus*. However, in Appendix Table 3, the lack of market power also contributes to larger cuts in planned investment during the crisis. Innovation (in line with earlier results) is positively associated with the ability to export and expand capacity, while having no significant impact on TFP. Human capital intensity (measured by education levels) is significantly and positively associated with participation in exports. Margin compression (a dummy for firms which reduced margins in the preceding year) appears to have no significant impact on competitiveness (Appendix Table 2) but did help cushion the employment loss during the crisis (Appendix Table 3). Firms that self-finance R&D activities to a greater extent also tend to have higher TFP. The reliance on offshore production appears to have no significant influence on firm performance. The investment ratio of "young" firms (i.e., operating for less than 6 years) appears superior to that of other firms, but at the cost of lower efficiency. Public support in the form of both tax and financial incentives appears positively correlated with the ability to export (although the direction of causality is unclear); and only financial (but not tax) incentives appear positively related to investment performance. Finally, management by a professional other than the main owner or a member of his family seems to be associated with better export outcomes; and firms owned by a bank or other financial institution adjusted employment comparatively less during the crisis.

D.   Conclusions and Policy Implications

32.   The French manufacturing sector has deep strengths, including a highly educated workforce, relatively generous public support (in terms of both tax and financial incentives), and abundant financing (at least for the larger firms which can access capital markets). This has allowed France to develop a dynamic high-tech industry, characterized by both high human capital and high export intensity. Moreover, innovation activities are not confined to the largest firms; instead, a high level of product innovation and participation in R&D activity occurs in the

smallest SMEs. The very small industrial firms also tend to be relatively intensive in human capital, employing a proportion of university graduates comparable to that of the largest firms. Access to external financing has allowed firms to expand capacity despite comparatively low profit margins.

33.   At the same time, French firms face the challenge of adapting to globalization. The trend fall in profitability and industry-led investment are symptoms of underlying weaknesses, including low levels of innovation relative to EU4 peers, low TFP in aggregate, an adverse operating environment due in particular to restrictive laws and regulations which in turn prevent firms from expanding beyond the critical size needed to expand internationally, and high dependence on external financing for both capacity expansion and innovation activities due to low profit margins. While the provision of financial and tax incentives has helped alleviate those constraints, it is second-best to reducing the constraints themselves and the room for expanding these programs is constrained by the imperatives of fiscal consolidation. There are early indications since 2008 that industry sectors which were better able to contain staff costs and limit debt servicing costs enjoyed a rebound in profitability. Key questions going forward are (i) how long can firms rely on external finance when profit margins keep falling? (ii) will firms be able to contain staff costs and improve their ability to raise prices without losing market share, in order to improve operating margins and their self-financing capacity? and (iii) how can regulatory constraints which appear to constrain firm growth and ability to expand abroad be alleviated?

34.   Current policies directed at simplifying the regulatory environment go in the right direction. The government is working to simplify relations between the state and companies and both the recent labor market agreement and the implementation in 2013-14 of a tax credit to improve cost competitiveness (a flagship recommendation of the Gallois report; see Gallois, 2012) are expected to improve profitability and French companies' capacity to increase spending on investment when demand improves. The government's "simplification shock" should be followed by measures to liberalize labor market and product market regulations and address inefficiencies in taxation, building on the momentum of recent reforms. Such policies that raise competitiveness across-the-board can provide fertile ground for firms to grow and expand employment past the critical thresholds for productivity levels and international activities. By allowing firms to improve profitability, they should also improve ability to self-finance innovation and investment more generally – both of which appear related to better TFP and export outcomes.

35.   The benefits of directing public sector financing to SMEs to increase their potential to compete internationally are questionable. The recent increases in the ceilings on regulated savings products (*Livret A* and *Livret de Développement Durable*) are aimed at increasing the supply of financing toward public priorities including social housing and SMEs, the latter through refinancing facilities at the *Banque Publique d'Investissement* (BPI).[23] However, according to *Banque*

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[23] The BPI is aimed at channeling public funds more efficiently by rearranging existing support programs for SMEs, high-growth firms, and firms with the potential to compete internationally.

de France surveys, French SMEs do not currently face constraints on access to credit and separate (and potentially more impactful) government initiatives are underway to develop market intermediated credit, including through greater securitization of SME loans. The authorities are also considering as a part of the 2014 budget a reform of tax incentives for life insurance policies aimed at increasing the share of equity investment in SMEs and other higher-risk products. To ensure the such reforms are effective in raising SMEs' growth potential, further developing the venture and private equity capital industry appears to be an important pre-condition, as this source of capital is still largely confined to the largest firms; such intermediaries provide not only financing, but also operational know-how and managerial coaching, which are more often cited by the smallest firms as key factors constraining growth.

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Appendix 1. TABLES

Table 1. Main Results of the EFIGE Survey

	First Shareholder Type					
	Family ownership (individual or group of individuals)	*Corporate Ownership (industrial firm or holding firm)*	*Financial Ownership (bank or insurance company or private equity and venture capital)*	*Government ownership (public entity)*	*Other*	*Foreign Ownership Share of Capital*
By Workforce Firm Size						
<49	88.0	8.2	0.9	0.5	0.6	4.1
50-199	75.4	19.3	2.1	0.5	1.3	8.6
200-499	66.3	26.7	1.6	1.2	1.5	14.8
500+	54.6	32.8	5.0	0.8	3.5	16.9
By Firm Turnover						
Less than 1 million euro	94.6	2.3	0.4	1.2	0.4	2.2
1-2 million euro	91.8	5.2	0.7	0.2	0.3	1.3
2-10 million euro	85.5	10.2	1.5	0.5	1.1	4.7
10-15 million euro	76.4	20.2	1.2	0.4	0.9	7.5
15-50 million euro	65.9	25.6	1.7	1.4	1.0	14.0
50-250 million euro	55.7	34.8	4.0	0.0	2.9	19.7
250+ million euro	44.2	48.8	2.3	0.0	1.9	24.1
By Type of Firm						
Specialized industries	81.1	15.5	1.6	0.1	1.1	9.2
Traditional industries	86.4	9.6	1.1	0.4	0.8	3.9
Economies of scale industries	76.0	17.2	1.3	1.2	1.0	7.5
High-tech industries	79.0	15.4	2.1	0.0	1.6	10.7
By Export Intensity						
<1/3	83.9	11.9	1.1	0.7	0.8	5.1
1/3-2/3	71.9	20.1	3.4	0.0	2.4	11.9
>2/3	70.3	23.9	1.9	0.0	0.9	18.9
Total Industry						
FRA	64.3	33.1	1.3	0.1	0.9	11.7
UK	82.1	12.8	2.1	0.6	0.9	11.7
GER	81.7	13.5	1.4	0.6	1.0	6.7
ITA	80.1	16.1	0.5	0.1	0.3	5.2

Table 1. Main results of the EFIGE Survey (Continued)

	Average Capital held by first shareholder, by type					
	First Shareholder: average share of capital	*Family ownership (individual or group of individuals)*	*Corporate Ownership (industrial firm or holding firm)*	*Financial Ownership (bank or insurance company or private equity and venture capital)*	*Government ownership (public entity)*	*Other*
By Workforce Firm Size						
<49	77.0	65.7	6.4	0.6	0.4	1.9
50-199	75.8	53.0	17.1	1.3	0.5	1.8
200-499	77.1	47.1	23.6	1.5	1.0	2.9
500+	72.2	33.4	25.0	3.5	0.8	5.8
By Firm Turnover						
Less than 1 million euro	80.3	73.0	1.1	0.4	1.0	1.4
1-2 million euro	79.2	72.4	3.8	0.3	0.1	1.5
2-10 million euro	74.7	61.7	8.1	1.1	0.4	1.8
10-15 million euro	75.5	52.9	17.5	0.9	0.4	1.8
15-50 million euro	76.5	45.4	23.0	1.0	1.3	3.8
50-250 million euro	75.7	36.7	30.2	2.9	0.0	4.1
250+ million euro	74.0	27.9	39.6	1.9	0.0	4.7
By Type of Firm						
Specialized industries	76.3	58.6	13.6	1.1	0.1	1.4
Traditional industries	76.1	63.7	7.5	0.8	0.3	1.7
Economies of scale industries	77.3	55.2	14.3	1.0	1.0	3.7
High-tech industries	75.5	56.4	13.0	1.6	0.0	2.5
By Export Intensity						
<1/3	76.4	61.7	9.7	0.8	0.6	1.9
1/3-2/3	77.4	51.4	17.7	2.4	0.0	3.7
>2/3	76.3	47.2	21.5	0.9	0.0	2.7
Total Industry						
FRA	73.2	41.8	29.5	0.9	0.1	0.9
UK	65.6	42.6	10.4	0.9	0.4	1.6
GER	76.5	59.7	11.3	1.0	0.5	2.1
ITA	58.3	42.8	13.1	0.3	0.1	2.0

Table 1. Main results of the EFIGE Survey (Continued)

		Firm Characteristics					
	Investment/ Turnover	*investments in plants, machines, equipment and ICT financed on average in the last three years (2007-2009)? - Self-financing (use of internal sources)*	*Investment financed through all other sources besides self-financing*	*Which percentage of 2008 turnover did the production activities through direct investement (foreign affiliates/controlled firms) represent?*	*Export Share*	*Which percentage of 2008 turnover did the production activities through contracts and agreements represent?*	*% of firms that feel that their scale of production is not adequate*
By Workforce Firm Size							
<49	12.4	59.4	40.6	34.4	28.1	30.2	107.4
50-199	10.9	54.1	45.9	24.6	33.3	21.8	8.0
200-499	10.7	49.4	50.6	20.8	36.8	9.6	9.4
500+	11.5	51.9	48.1	24.1	38.3	8.8	2.5
By Firm Turnover							
Less than 1 million euro	11.6	60.9	39.1	-	26.5	27.5	11.7
1-2 million euro	13.5	59.9	40.1	27.5	20.9	17.0	7.8
2-10 million euro	12.4	54.7	45.3	25.8	28.4	27.2	7.3
10-15 million euro	11.0	56.5	43.5	37.0	34.9	33.4	8.1
15-50 million euro	10.7	57.5	42.5	22.5	37.6	23.2	9.3
50-250 million euro	7.6	53.2	46.8	24.6	40.2	6.0	7.4
250+ million euro	13.5	55.8	44.2	23.0	40.0	5.0	4.7
By Type of Firm							
Specialized industries	11.1	57.4	42.6	22.4	37.5	23.7	75.3
Traditional industries	12.5	55.5	44.5	29.4	26.1	26.2	116.9
Economies of scale industries	11.5	56.9	43.1	27.6	29.2	19.1	75.3
High-tech industries	11.3	63.8	36.2	23.2	35.5	30.3	20.8
By Export Intensity							
<1/3	12.1	55.8	44.2	28.9	14.9	21.5	7.8
1/3-2/3	10.4	61.9	38.1	24.5	47.6	22.0	7.7
>2/3	11.0	62.5	37.5	17.7	79.1	39.6	9.7
Total Industry							
FRA	8.3	48.6	51.4	24.4	29.6	29.4	13.7
UK	8.8	69.9	30.1	35.2	30.2	43.1	16.5
GER	11.9	56.9	43.1	26.1	31.2	23.3	7.8
ITA	8.9	50.3	49.7	24.9	35.8	27.5	11.9

Table 1. Main results of the EFIGE Survey (Continued)

	How do you mainly set your prices in your domestic market?			Total Factor Productivity	
	Price Fixers	*Price Takers*	*Prices Regulated*	*Pre-crisis average TFP*	*Post-crisis average TFP*
By Workforce Firm Size					
<49	57.1	39.1	1.8	-0.16	-0.21
50-199	50.4	46.1	1.1	0.02	-0.06
200-499	42.3	53.7	0.6	0.16	0.14
500+	34.5	58.6	3.4	0.55	0.51
By Firm Turnover					
Less than 1 million euro	55.3	39.4	2.0	-0.36	-0.49
1-2 million euro	52.7	42.1	2.3	-0.24	-0.32
2-10 million euro	59.3	38.0	1.3	-0.08	-0.13
10-15 million euro	54.4	42.9	1.6	0.00	0.00
15-50 million euro	47.4	48.4	0.7	0.10	0.06
50-250 million euro	35.4	59.5	0.0	0.27	0.28
250+ million euro	33.3	60.0	6.7	0.62	0.55
By Type of Firm					
Specialized industries	57.4	40.1	0.6	-0.03	0.01
Traditional industries	55.6	40.3	1.7	-0.16	-0.27
Economies of scale industries	51.4	45.0	1.1	-0.02	-0.06
High-tech industries	47.5	47.5	3.4	0.21	0.39
By Export Intensity					
<1/3	55.0	41.4	1.7	-0.11	-0.17
1/3-2/3	53.4	45.0	0.7	0.02	-0.02
>2/3	46.7	42.6	2.0	0.14	0.08
Total Industry					
FRA	54.3	41.8	1.6	-0.08	-0.14
UK	56.5	32.3	2.4	0.07	-0.15
GER	51.4	39.2	5.0	0.23	0.15
ITA	55.8	36.6	3.6	-0.16	-0.30

Table 1. Main results of the EFIGE Survey (Continued)

	Financial Constraints	Labour market regulations	legislative or bureaucratic restrictions	lack of management and/or organisational resources	lack of demand	other	none
By Workforce Firm Size							
<49	52.0	42.6	48.3	24.1	57.3	22.8	4.0
50-199	43.9	33.9	40.9	19.1	58.8	21.3	4.6
200-499	40.0	30.9	30.9	20.0	69.7	21.7	4.6
500+	36.8	20.7	25.3	12.6	65.5	19.5	5.7
By Firm Turnover							
Less than 1 million euro	60.6	49.2	50.0	24.8	63.8	22.8	3.7
1-2 million euro	55.8	43.5	47.8	23.6	59.2	26.2	2.4
2-10 million euro	50.0	41.5	47.5	24.2	57.3	20.8	4.1
10-15 million euro	42.9	33.0	43.4	21.4	53.8	22.5	4.9
15-50 million euro	36.2	30.3	37.6	18.8	56.8	22.3	8.0
50-250 million euro	33.5	21.5	24.1	12.7	67.1	18.4	5.1
250+ million euro	35.6	20.0	33.3	8.9	62.2	22.2	8.9
By Type of Firm							
Specialized industries	52.1	38.2	46.2	25.9	57.8	23.4	3.6
Traditional industries	51.1	42.3	46.1	23.2	59.7	22.4	4.0
Economies of scale industries	45.2	36.9	43.9	19.8	59.0	21.5	4.9
High-tech industries	47.5	35.6	47.5	22.0	50.8	18.6	4.2
By Export Intensity							
<1/3	49.9	40.6	45.7	22.7	58.4	22.5	4.4
1/3-2/3	52.0	37.6	43.6	25.5	59.1	23.2	2.7
>2/3	37.6	30.5	42.1	16.2	59.9	19.3	4.1
Total Industry							
FRA	49.3	39.7	45.2	22.6	58.5	22.4	4.2
UK	33.5	4.3	4.4	5.2	20.9	54.0	8.5
GER	22.0	3.9	8.1	3.7	22.8	42.3	14.0
ITA	33.3	47.6	33.3	14.3	38.1	19.0	4.8

Firms that feel the following factors prevent growth...

Table 1. Main results of the EFIGE Survey (Continued)

	Firm Leadership Characteristics			
	CEO/company head: an individual who owns or controls the firm or a member of the same family	CEO/company head: a manager recruited from outside the firm	CEO/company head: a manager appointed within the firm	CEO/company head: other
By Workforce Firm Size				
<49	54.0	2.3	2.5	0.6
50-199	39.5	6.6	4.8	1.1
200-499	24.0	11.4	6.3	0.6
500+	21.8	14.9	8.0	2.3
By Firm Turnover				
Less than 1 million euro	56.1	0.0	1.2	0.8
1-2 million euro	55.3	1.2	2.2	0.9
2-10 million euro	51.3	3.9	2.9	0.5
10-15 million euro	47.8	3.3	3.3	1.1
15-50 million euro	34.1	9.1	6.6	0.3
50-250 million euro	21.5	12.0	7.0	1.3
250+ million euro	11.1	13.3	11.1	2.2
By Type of Firm				
Specialized industries	47.5	5.1	4.4	0.6
Traditional industries	54.5	2.9	1.9	0.7
Economies of scale industries	42.0	4.4	4.6	0.7
High-tech industries	33.9	10.2	4.2	0.0
By Export Intensity				
<1/3	50.6	3.3	2.7	0.6
1/3-2/3	40.9	6.0	6.0	1.3
>2/3	33.5	9.6	6.1	1.0
Total Industry				
FRA	48.5	4.0	3.3	0.7
UK	54.1	3.2	4.0	0.8
GER	72.9	3.7	4.5	0.9
ITA	70.1	1.5	1.8	0.9

Table 1. Main results of the EFIGE Survey (Continued)

		Workforce Characteristics		
	Number of Employees 1/	What is the percentage/number of university graduates in your workforce in your home country - percent	in 2008, what percentage of employees have participated in formal training programs?	In 2008, which percentage of employees have worked for the firm with a fixed-term contract?
By Workforce Firm Size				
<49	20.0	19.5	19.3	11.5
50-199	83.0	15.5	26.4	11.9
200-499	288.0	17.1	29.3	9.1
500+	-	20.6	32.0	14.5
By Firm Turnover				
Less than 1 million euro	14.0	19.6	16.0	9.4
1-2 million euro	16.0	11.0	17.7	14.9
2-10 million euro	30.0	15.9	20.7	10.2
10-15 million euro	69.0	16.0	25.6	11.3
15-50 million euro	132.0	18.3	29.8	10.6
50-250 million euro	340.0	21.5	29.9	11.4
250+ million euro	500.0	22.2	44.4	13.2
By Type of Firm				
Specialized industries	31.0	19.9	21.8	10.3
Traditional industries	24.0	13.1	20.5	12.0
Economies of scale industries	33.0	20.3	22.5	11.6
High-tech industries	47.0	27.7	32.6	9.3
By Export Intensity				
<1/3	25.0	14.1	20.5	11.9
1/3-2/3	50.0	27.6	25.8	7.8
>2/3	50.0	26.9	27.6	11.3
Total Industry				
FRA	27.0	18.0	21.5	11.5
UK	29.0	13.3	25.7	34.6
GER	35.0	15.5	24.9	5.0
ITA	26.0	13.4	12.5	7.5

1/ EFIGE survey is censored for firms that are larger than 500 employees, firms larger than 500 are reported as employing 500 workers. Median is used in this category as the end value of the distribution is not known.

Table 1. Main results of the EFIGE Survey (Concluded)

	How Firms cope with the crisis						
	Reduction in planned investment	*Reduction in workforce*	*Reduction in exports*	*Firms that saw a reduction in their margins*	*Firms that recurred to external financing in 2008-2009*	*Benefited from financial incentives provided by the public sector?*	*Benefited from tax incentives?*
By Workforce Firm Size							
<49	35.1	15.7	34.0	30.2	12.5	18.5	18.9
50-199	32.0	16.0	30.9	25.5	17.3	25.2	30.5
200-499	26.5	12.8	26.7	18.9	12.0	22.3	34.3
500+	27.6	12.7	25.5	13.8	11.5	28.7	42.5
By Firm Turnover							
Less than 1 million euro	39.5	17.3	33.6	28.9	8.1	17.5	21.1
1-2 million euro	39.5	17.1	37.1	30.4	13.7	18.2	20.5
2-10 million euro	33.6	15.0	33.0	30.4	13.7	20.3	19.7
10-15 million euro	28.0	16.4	29.7	24.2	12.6	23.1	24.7
15-50 million euro	27.1	13.6	27.7	24.0	16.0	23.7	31.4
50-250 million euro	26.6	12.4	26.6	15.8	13.9	22.8	38.0
250+ million euro	25.5	14.8	28.8	11.1	8.9	31.1	44.4
By Type of Firm							
Specialized industries	30.9	15.8	34.2	27.4	14.3	23.0	28.1
Traditional industries	37.4	16.3	33.3	31.2	14.4	19.6	20.4
Economies of scale industries	30.6	14.1	29.3	25.5	12.5	18.9	21.4
High-tech industries	21.6	13.2	22.3	16.9	12.7	27.1	40.7
By Export Intensity							
<1/3	34.1	15.3	33.7	29.2	12.9	18.5	20.1
1/3-2/3	34.8	15.8	28.5	25.8	14.4	29.9	32.9
>2/3	27.3	16.5	31.0	18.3	16.8	28.4	39.6
Total Industry							
FRA	33.7	15.4	32.0	28.2	13.3	20.3	22.7
UK	21.6	16.5	28.5	26.1	13.2	8.8	10.0
GER	13.8	14.5	26.8	21.5	11.2	19.2	8.3
ITA	18.4	15.7	29.7	28.7	24.9	14.3	23.0

Table 2. Investment, Exports, and Efficiency of French Firms

	2008 Levels					
	Investment		Export Share		TFP	
TFP	1.097	[.919]	2.725	[1.814]	...	...
Export Share	0.032 **	[.015]	...	...	0.001	[.0005]
Reliance on Self-finance For Investment	-0.042 ***	[.009]	0.073 ***	[.018]	0.001 ***	[.0003]
Shareholder Concent.	-0.031 **	[.015]	0.064 **	[.029]	0.001 *	[.0005]
First shareholder Type						
Financial Owner	-3.471	[2.696]	8.122	[5.32]	-0.166	[.088]
Corporate Owner	-0.691	[.891]	1.393	[1.758]	0.007	[.029]
Family Owner	1.280	[.89]	-1.853	[1.758]	0.009	[.029]
Workforce Size 1/						
Dummy Categorical Sector 1	-0.172	[1.85]	-14.022 ***	[3.631]	-0.635 ***	[.057]
Dummy Categorical Sector 2	-2.040	[1.867]	-7.366 **	[3.683]	-0.485 ***	[.059]
Dummy Categorical Sector 3	-2.874	[2.024]	-1.273	[4.001]	-0.369 ***	[.065]
Additonal Control Variables 2/						
Price Taker	1.467 *	[.775]	-0.323	[1.532]	-0.027	[.025]
Innovation	0.094 ***	[.025]	0.074	[.049]	0.000	[.001]
Invest in R&D	0.182 ***	[.047]	0.296 ***	[.099]	-0.003 *	[.002]
Reduction of Margins	0.769	[.996]	-2.677	[2.138]	-0.021	[.037]
Self-financing of R&D	-0.009	[.014]	-0.062 **	[.03]	0.001 **	[.001]
% of Graduates in Workforce	0.013	[.054]	0.325 ***	[.115]	0.003	[.002]
Formal Training	0.039 **	[.015]	0.034	[.031]	0.000	[.001]
Production through contracts	-0.039	[.042]	0.056	[.104]	0.002	[.002]
Employees on Fixed Term Contracts	0.014	[.014]	-0.023	[.028]	0.000	[.0005]
Production through FDI	0.047	[.082]	-0.074	[.151]	-0.001	[.002]
Financial Benefits	1.666 *	[.887]	5.230 ***	[1.737]	-0.007	[.029]
Tax Benefits	-0.384	[.844]	5.820 ***	[1.647]	-0.001	[.027]
Firm operating for less than 6 yrs	3.183 *	[1.825]	-0.940	[3.611]	-0.127 **	[.059]
CEO is individual who owns or controls the firm	0.070	[1.541]	-7.147 **	[2.809]	-0.005	[.045]
Region Held Constant						
Sector Held Constant						
Number of Observations	1152		1155		1155	
Adj R-Squared	0.03		0.11		0.22	

Footnotes: OLS estimates; robust standard errors in brackets. Only firms that reported a reduction in the respective category.
Significance level: ***:1 percent, **:5 percent, *:10 percent.
1/ Dummy categories for firm size by workforce: 1, 2, and 3 refer to 0-49, 50-199, and 200-499, repsectively. The category 500+ (deviation within is censored in the survey) is absorbed for collinearity.
2/ Additional Control Variables added individually to the baseline specification.

Table 3. Impact of the Crisis

	Fall at start of crisis					
	Investment		Export Share		Workforce	
TFP	-4.473	[2.734]	-4.497 **	[2.051]	-0.102 *	[.061]
Export Share	-0.069	[.045]	-0.064	[.034]	-0.002 **	[.001]
Reliance on Self-finance For Investment	-0.110 ***	[.028]	-0.017	[.021]	0.001	[.001]
Shareholder Concent.	0.058	[.044]	-0.016	[.033]	-0.001	[.001]
First shareholder Type						
Financial Owner	1.036	[8.101]	3.720	[5.03]	-0.328 *	[.19]
Corporate Owner	-2.309	[2.676]	-1.435	[1.991]	-0.050	[.062]
Family Owner	2.315	[2.682]	0.070	[1.996]	0.070	[1.996]
Workforce Size 1/						
Dummy Categorical Sector 1	-3.807	[5.482]	6.423 *	[3.866]	...	...
Dummy Categorical Sector 2	-2.562	[5.54]	5.118	[3.922]	...	...
Dummy Categorical Sector 3	-6.879	[6.]	0.030	[4.266]	...	...
Additonal Control Variables 2/						
Price Taker	4.303 *	[2.316]	-1.723	[1.733]	-0.008	[.054]
Innovation	-0.087	[.07]	0.044	[.058]	0.002	[.002]
Invest in R&D	0.006	[.148]	0.153	[.119]	0.000	[.004]
Reduction of Margins	17.098 ***	[3.195]	9.470 ***	[2.469]	-0.180 **	[.075]
Self-financing of R&D	0.025	[.045]	0.010	[.032]	0.000	[.001]
% of Graduates in Workforce	-0.232	[.155]	-0.039	[.109]	0.006	[.004]
Formal Training	-0.015	[.047]	0.088 **	[.036]	-0.001	[.001]
Production through contracts	-0.062	[.155]	-0.084	[.103]	0.005	[.004]
Employees on Fixed Term Contracts	-0.021	[.042]	0.032	[.031]	0.000	[.001]
Production through FDI	0.142	[.167]	0.130	[.119]	-0.007	[.004]
Financial Benefits	-2.469	[2.666]	-2.245	[1.979]	0.031	[.062]
Tax Benefits	-3.338	[2.517]	-1.603	[1.822]	-0.027	[.059]
Firm operating for less than 6 yrs	0.755	[5.468]	1.433	[4.613]	0.169	[.128]
CEO is individual who owns or controls the firm	2.733	[4.429]	4.251	[3.34]	0.059	[.098]
Region Held Constant						
Sector Held Constant						
Number of Observations	1107		670		1120	
Adj R-Squared	0.08		0.12		0.03	

Footnotes: OLS estimates; robust standard errors in brackets. Only firms that reported a reduction in the respective category.
Significance level: ***:1 percent, **:5 percent, *:10 percent.
1/ Dummy categories for firm size by workforce: 1, 2, and 3 refer to 0-49, 50-199, and 200-499, repsectively. The category 500+ (deviation within is censored in the survey) is absorbed for collinearity.
2/ Additional Control Variables added individually to the baseline specification.