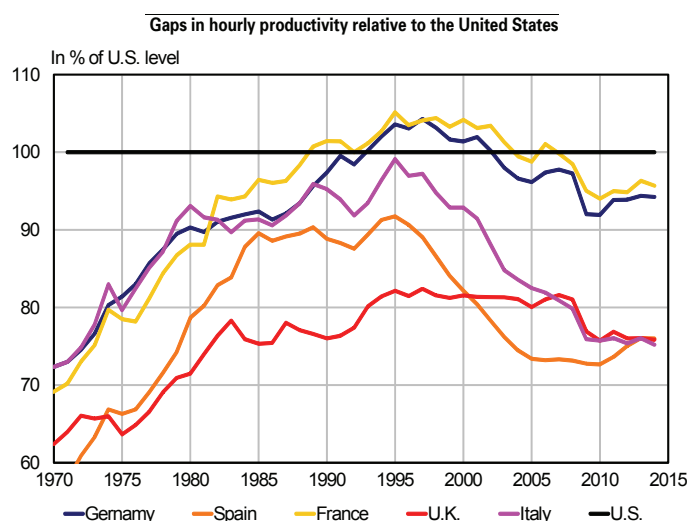


Why is Italian productivity so weak?

- After a period of robust growth due to a catch-up effect until the mid-1990s, Italy experienced a sharper and earlier slowdown in labour productivity than its main partners. Italy was one of the European leaders in hourly labour productivity until the mid-1990s. This advantage has gradually narrowed. Today, Italian productivity is 20% below that of France and Germany.
- Italy's weak productivity performance is not due to a change in production structure or to regional disparities. The lack of productivity gains is common to all economic sectors, and the shift in the production structure—particularly the contraction in manufacturing—does not explain the economy-wide slowdown.
- From a cyclical perspective, the policies aimed at increasing the labour content of growth have slowed hourly productivity gains. The labour-market reforms of the late 1990s and early 2000s sustained job creation amid weak economic growth, curbing productivity gains. The 2008 crisis caused a decline in employment that, while substantial, was moderate relative to the shock on Italy's economy and by comparison with other European countries—notably Spain. This reflects the fact that the labour-market adjustment was achieved mainly through a reduction in hours worked per employee.
- In a longer-term perspective, Italy's atypical situation in Europe seems due to structural factors. The first is the lag in labour-force education and training, particularly for the young, which restricts the supply of skilled jobs. At the same time, the integration of young people—including the highest educated—into the labour market is difficult, and this can lead to an inefficient use of human capital. The second factor is that investment in R&D and information and communication technologies (ICTs) has been far lower than in the other European countries. Third, Italy's lag in adopting reforms of the goods and services markets may also have limited labour productivity gains.
- Another cause of weak Italian productivity is the small size of firms, a great majority of which are family-owned and not significantly internationalised. While the percentage of microenterprises is the same as in France, the gap in productivity by firm size is far wider in Italy.



Source: OECD; calculations: DG Trésor; data in PPP dollars.

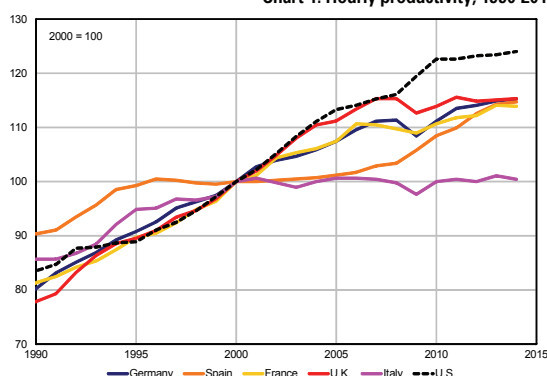
1. Since the mid-1990s, Italy has been experiencing a sharp slowdown in hourly labour productivity, which cannot be explained by a change in production structure and is only very partially linked to regional disparities

1.1 After catching up until the mid-1990s, Italy recorded an earlier and steeper slowdown in labour productivity than its main partners

Until the mid-1990s, hourly labour productivity grew at a brisk pace in Italy as in most European countries (see Chart 1)—a sign of a catch-up effect relative to the benchmark country: the United States. European hourly productivity was at least 30% below the U.S. level in the early 1970s, but the gap gradually narrowed. By the early 1990s, Italy was in fact one of the most advanced European countries for hourly productivity, having almost caught up with the U.S.

The slowdown in hourly productivity came earlier and was more pronounced in Italy than in the core European countries. In France and Germany, hourly productivity began to slow once it had caught up with or even slightly exceeded the U.S. level. Italy, by contrast, stopped catching up in the early 1990s and fell behind the leading countries in the decade before the crisis. Since 2008, hourly productivity growth in the leading countries has slowed to a pace comparable to Italy's, explaining why the gap has remained broadly stable since the crisis.

Chart 1: Hourly productivity, 1990-2014



Source: OECD, DG Trésor calculations.

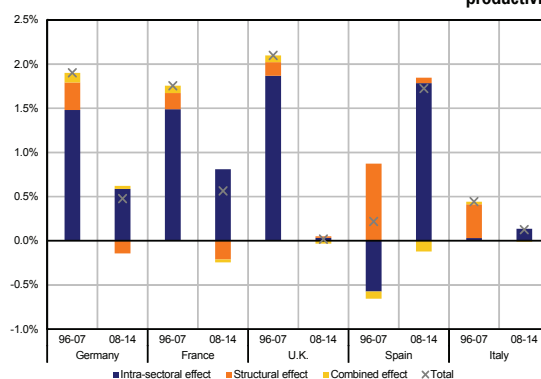
1.2 The Italian situation cannot be explained by a change in production structure and is only very partially due to regional disparities

The slowdown in Italian hourly productivity has not been caused by a change in production structure. The contribution of the structural effect—which measures the change in an economy's production specialisation—to hourly productivity growth has been weak and positive since the late 1990s: the decline in manufacturing

has been offset by service activities where hourly productivity is higher.

The explanation lies instead in the absence of intra-sectoral productivity gains, a trend common to all economic sectors. While manufacturing is the only sector to have posted steady productivity gains since the late 1990s, they are more modest in Italy than in its partner countries. At the same time, hourly productivity fell sharply in construction and even more so in market services.

Chart 2: Sectoral breakdown of annual average growth in hourly productivity



Source: Enrostat; calculations: DG Trésor. For each country, we perform an accounting breakdown of hourly productivity growth into (1) a structural effect reflecting the change in the economy's production specialisation; (2) an intra-sectoral effect measuring the change in hourly productivity for a constant production structure; and (3) a residual reflecting the combined effects.

While regional disparities exist, productivity has slowed in all regions. Italy is characterised by a wide disparity in productivity levels between regions. Hourly productivity in the North and, to a lesser extent, the Centre exceeds the national average, but is lower than in the core European countries. By contrast, labour productivity in the Mezzogiorno is 20% below the national level. This disparity is partly due to differences in the production structure: the Mezzogiorno is less specialised in manufacturing, a sector where productivity is higher. Regional divergences from the national average, however, remained stable in 2000-2011, with weak productivity gains in all Italian regions, particularly in comparison with the other countries studied. This pattern suggests that the national slowdown offers only a very limited explanation for regional disparities.

2. The increase in the labour content of economic growth—which mainly concerns part-time positions and low-skilled workers—has slowed labour productivity gains

2.1 The pre-crisis labour-market reforms stimulated job creation, particularly for low-skilled workers; this entailed a major increase in part-time work, which kept Italian hourly productivity stable

Until the mid-2000s, Italian employment growth was buoyant despite weak GDP growth. Italy enacted two waves of structural labour-market reforms (Treu in 1997 and Biagi in 2003) aimed at stimulating employment, particularly for low-skilled workers, and making the market less rigid. The reforms led to new types of temporary contracts ("atypical contracts" and legalisation

of temporary work), eased restrictions on fixed-term contracts, and introduced greater flexibility for hours worked. At the same time, tax and social-contribution exemptions were implemented, offering firms a greater incentive to hire. The results of the Treu (1997) and Biagi (2003) reforms are now questioned. They are criticised, among other reasons, for having increased the duality of the Italian labour market. However, they helped to reduce unemployment until the mid-2000s, lowering it from 11.2% in 1996 to 6.1% in 2007. Employment did rise during this period despite slack GDP growth well below the European average (see Table 1).

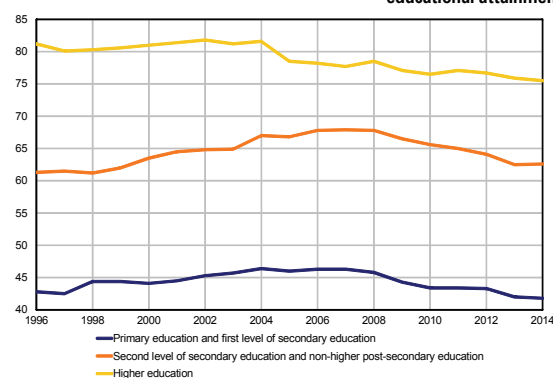
Table 1: Annual average growth rates of employment and GDP, 1996-2014

	Germany	France	United Kingdom	Spain	Italy
1996-2007					
Employment	-0.1%	0.5%	0.8%	3.5%	1.0%
GDP	1.6%	2.3%	2.9%	3.8%	1.5%
2008-2014					
Employment	0.2%	-0.1%	0.7%	-2.3%	-1.3%
GDP	0.8%	0.3%	0.7%	-0.7%	-1.3%

Source: Eurostat, DG Trésor calculations.

Moreover, job creation primarily benefited the least skilled categories of workers (see Chart 3): employment rates for primary- and secondary-school graduates rose from 43% to 46% and from 60% to 68% respectively between 1995 and 2007.

Chart 3: Employment rates for persons aged 15-64s, by highest educational attainment



Source: Eurostat, DG Trésor calculations.

The greater dynamism of employment was partly offset by the decrease in working time in Italy—a trend common to most of the countries examined.

In Italy, the shift was driven chiefly by an increase in part-time employment, whose share of total employment almost doubled (from 6.4% in 1996 to 13.4% in 2007), particularly as a result of the Biagi reform (2003) and the introduction of "atypical contracts". The pattern was similar in Germany, and to a lesser extent in Spain, where the share of part-time employment rose from 16.2% to 25.4% and from 7.7% to 12.0% respectively between 1996 and 2007. In France and the U.K., the decrease in hours worked coincided with the reduction in working

time. It should be noted, however, that the change in hours worked is consistent with economic growth in Italy, resulting in stable hourly productivity over the period.

2.2 Since the 2008 crisis, the weaker adjustment of employment to the economic shock has kept hourly productivity from recovering in Italy

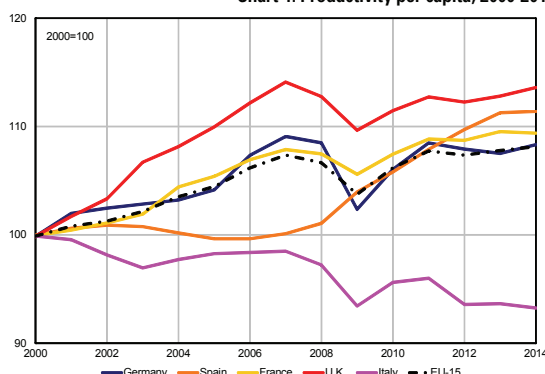
After the 2008 crisis, Italian unemployment rose steeply, but the adjustment of employment to the economic shock was less significant than in the other countries, particularly Spain. Between 2007 and 2014, Italy's GDP shrank by 9.0% but the employment adjustment was moderate, with a 3.7% contraction. By comparison, the Spanish economy destroyed 3.1 millions jobs in the same period, causing employment to "overadjust" to the economic shock with a 14.6% drop versus 5.0% for GDP.

Italy achieved its labour market adjustment mainly by reducing hours worked. In addition to the increase in part-time work, the flexibilisation of hours worked has resulted in a decline of the average weekly hours worked in Italy since 2008. This change is due to the massive use of the "Cassa Integrazione Guadagni", a system for placing workers in partial unemployment while counting them statistically as employed persons. The system offers compensation for unworked hours and served as the main social safety net during the crisis. The arrangement, which resembles Germany's *Kurzarbeit*, has resulted in a positive contribution of hours worked to the rise in hourly productivity.

The decrease in hours worked also explains Italy's poorer performance in productivity per capita (see Chart 4). The latter has been falling steeply since 2000,

and even more so after the 2008 crisis, whereas hourly productivity has remained fairly stable throughout the period.

Chart 4: Productivity per capita, 2000-2014



Source: Eurostat, DG Trésor calculations.

Lastly, it should be noted that the informal economy creates uncertainty about the measurement of labour productivity. This is important because the informal sector¹ is a sizeable component of the Italian economy. Its share of GDP has been variously estimated at between 11.9% in 2013 by the National Statistical Institute (ISTAT)² and 21.6% in 2012 by a study by the European Parliament³, placing Italy in second position after Greece in terms of percentage share. In real terms, however, the informal economy appears to have declined in the past decade or so, as in other European countries: the European Parliament study finds a decrease from 26.1% of GDP in 2003 to 21.6% in 2012.

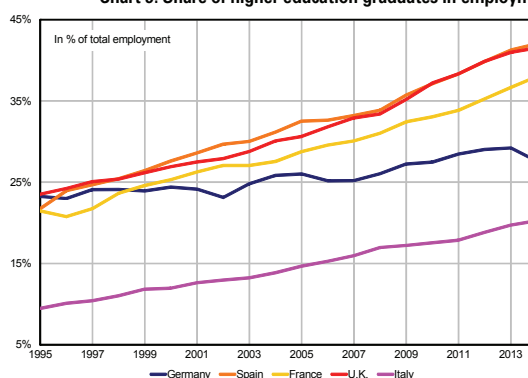
3. Labour force skills, the types of investment, institutional rigidity and the structure of the entrepreneurial fabric seem to play a major role

3.1 Italy lags behind in the education attainment of its population and the integration of young graduates into the labour market

Despite an improvement in the recent period, Italy lags behind its partners in the education attainment of its population. The share of higher education graduates in Italy's total population rose from 9.6% in 2000 to 16.3% in 2013—still far below the OECD averages of 22% and 33.3% respectively. Moreover, the language and mathematics skills of Italian adults are among the lowest in the OECD countries according to the Program for the International Assessment of Adult Competencies (PIAAC) survey. Despite a recent increase, the share of skilled employment remains smaller in Italy than elsewhere. In 2014, only 20% of Italian employees were higher education graduates, against an EU-15 average of 34% (see Chart 5).

Italy's education lag is also significant among the young. Italy ranked 34th among the 37 OECD countries in 2013 for the percentage of higher-education graduates in the 25-34 age group, at 22.7% versus the OECD average of 40.5%. Italian higher education offers very few practically-oriented programmes: in 2012, only 0.2% of higher education students were enrolled in an applied or vocational programme, compared with a European average of 15.7%. There are also few apprenticeship programmes in secondary education. Lastly, few higher education students are enrolled in mathematics, science and IT programmes; the share of engineering and medical studies is, however, close to the European average.

Chart 5: Share of higher education graduates in employment



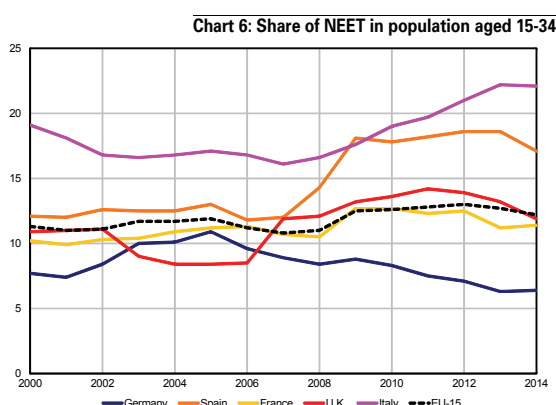
Source: Eurostat, DG Trésor calculations.

Italy's performance in educational attainment is partly due to low education spending. In 2011, Italy devoted only 4.6% of its GDP to education compared with an OECD average of 6.2%. It has also cut education spending drastically since the 2008 crisis, resulting in a total reduction of 5% in real terms between 2005 and 2011. The share of education in total public spending fell from 9.4% in 2008 to 8.6% in 2011. Italy's spending gap is concentrated in secondary education and even more heavily in higher education, where expenditures per student are respectively 7% and 28% below the OECD average (OECD data in PPP dollars).

Italy is characterised by the greater difficulty for its youth—even the highest educated—to integrate into the labour market. Italy has the largest share of the 15-34s not in education, employment or training

- (1) Broadly defined, the informal economy comprises all illegal activities and undeclared legal activities (Koenig, 2014). These may consist of the supply of illicit goods and services, illegal transactions (for example, as part of a corruption enterprise), the supply of goods and services that are legal but undeclared for the purpose of avoiding payment of taxes and social contributions (tax and social contribution fraud), or financial transactions (tax evasion).
- (2) The estimation method is based on firms' characteristics. Istat takes into account only the nominal value of under-reporting of VAT, undeclared work, tips, and undeclared rents. The estimate of illegal activities is confined to prostitution, drug trafficking and smuggling.
- (3) European Parliament, Policy Department: Economic and Social Policy, "From Shadow to Formal Economy: Levelling the Playing Field in the Single Market", June 2013.

(NEET) than any other European country, and their percentage has risen sharply since the 2008 crisis (see Chart 6)⁴. In addition, young members of the labour force enjoy a smaller "education bonus": among the 25-34s, the employment rate of higher education graduates (61% versus 82% in the EU-15) is lower than that of secondary-education graduates (63% versus 75% in the EU-15). Returns to education are therefore smaller in Italy than in most European countries, a finding consistent with those of the OECD⁵. To sum up, as Montanari, Pinelli and Torre point out (2015)⁶, Italy is characterised by: (1) the low education and training level of its labour force, particularly among the young, which restricts the supply of skilled jobs; (2) a mismatch between skilled-labour supply and demand, with young people-especially higher education graduates-facing difficulties entering the labour market. This finding is consistent with the analysis by Colecchia, Melka and Nayman (2004)⁷ who observe that the increase in labour quality in Italy in 1984-2000 is due to workers' age or experience rather than to an improvement in educational attainment.



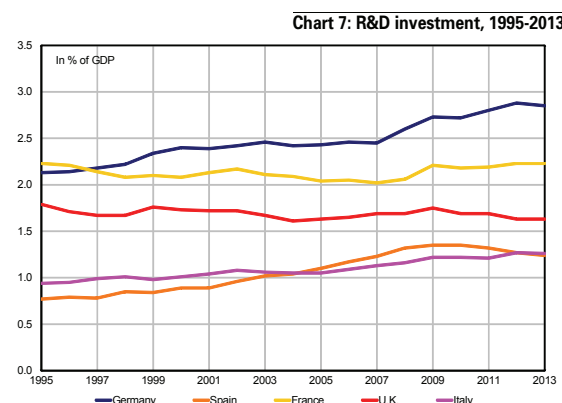
Source: Eurostat, DG Trésor calculations.

3.2 R&D and ICT investment remains inadequate

Italian R&D investment is weak by comparison with the other countries studied, except Spain. R&D spending accounted for 1.26% of Italy's GDP in 2013 (see Chart 7), a share well below that of its European partners such as France, which spent 2.23% in 2013.

Similarly, investment in information and communication technologies (ICTs) has been weaker in Italy than elsewhere. The share of ICT investment in total non-residential investment rose sharply in most of the countries studied, particularly in 1995-2001, with increases of 6.6 points in France, 5 points in the U.K. and 4 points in Germany and the U.S. according to the OECD.

Italy, by contrast, posted a mere 0.7-point increase in the same period.



Source: Eurostat, DG Trésor calculations.

More broadly, Italy displays a significant lag in ICT dissemination and use. "Information activities" account for a smaller percentage of GDP in Italy (4.7% in 2012) than in its main partners, and their share is well below that of the leading countries: 8% in the U.S., 6% in Germany and France. Only 56% of Italians aged 16-74 use the Internet on a regular basis, versus an European average of 72%. IT training is inadequate as well: 61% of Italians aged 16-74 possess low ICT skills or none at all, compared with 37% in France (European Commission, Digital Agenda Scoreboard 2014).

3.3 Italy's lag in liberalisation of services has slowed labour productivity gains

Italy is the only country in the sample where hourly productivity in market services has fallen steadily since the 2000s. Two sectors are particularly responsible for this decline: professional, scientific and technical activities, and the wholesale/retail, transport and accommodation-restaurant sector, where hourly productivity shed an average 2.7 and 0.2 points respectively over the 1996-2014 period.

Regulatory barriers in professional services and the retail trade have curbed productivity gains in these sectors. The OECD product market regulation (PMR) sectoral indicators⁸ show that:

- until the late 1990s, regulatory rigidity was high in both sectors in Italy as well as in the other continental European countries;
- since the early 2000s, most continental European countries have launched pro-competition reforms that have gradually liberalised professional services and the retail trade (albeit less so in the latter sector);

(4) It should be noted that the comparison of NEET shares may be affected by differences in female participation in the labour market. Even applying a distinction by sex, the NEET share in Italy exceeds that observed in the other countries: in 2014, the proportion was 24% for men (versus 13.5% in the EU-15) and 30.9% for women (versus 18.8% in the EU-15).

(5) OECD (2015), "Italy", in Education at a Glance 2015: OECD Indicators, OECD Publishing, Paris.

(6) Montanari, M., Pinelli, D. and Torre, R. (2015), "From tertiary education to work in Italy: a difficult transition", ECFIN Country Focus, vol. 12, issue 5, June.

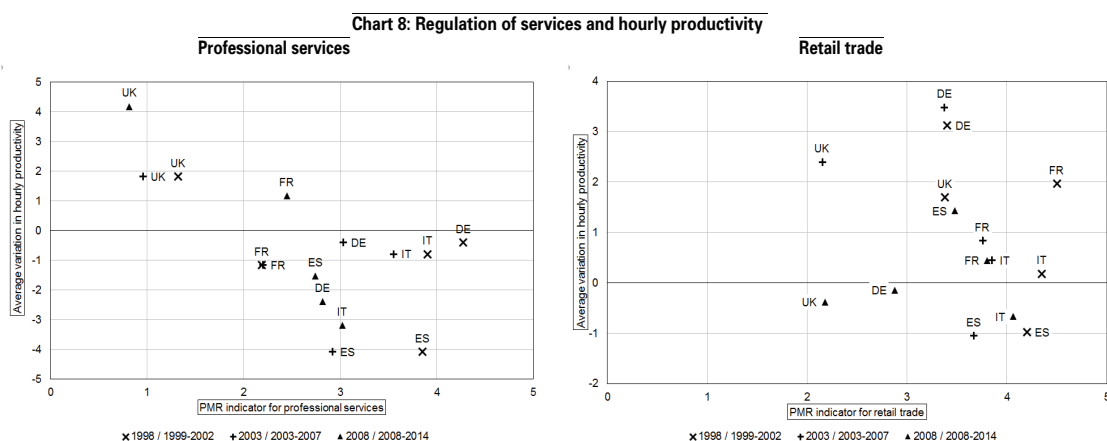
(7) Colecchia, A., Melka, J. and Nayman, L. (2004), "La qualité du travail, une comparaison internationale", supplement C to Productivité et croissance, report by the *Conseil d'Analyse Economique*, Paris, June.

(8) These indicators measure the regulatory conditions prevailing in professional services and retailing. They are estimated for 1998, 2003, 2008 and 2013.

- until 2008, the reforms have been slower and less extensive in Italy: its PMR indicator exceeded that of the other countries in 2008 for both professional services and the retail trade;
- Italy enacted several structural reforms in 2012 to lower barriers in the professional services, such as the elimination of mandatory minimum fees, the lifting of restrictions on the legal status of regulated pro-

fessions, and the right to advertise.

To illustrate the link between productivity and regulatory rigidity, we plot the average annual growth rate of hourly productivity (y-axis) as a function of the PMR indicator for the reference year (x-axis) for each of the two sectors in each country (see Charts 8).



Source: Eurostat and OECD, DG Trésor calculations.

How to read these charts: The x-axis shows the OECD PMR indicator for the reference year (1998, 2003 or 2008). The y-axis shows the average growth rate of sectoral hourly productivity in the period following the reference year (1998-2002, 2003-2007 and 2008-2014).

Empirical data confirm the negative relationship between the change in hourly productivity and the existence of regulatory barriers in a given period. In professional services, the higher the PMR indicator for the reference year, the slower the average growth of hourly productivity. The relationship is less significant for the retail trade. This finding is consistent with those of Nicoletti and Scarpetta (2008)⁹.

Italy's lag in regulatory reform has hindered hourly productivity growth. Apart from its negative impact on investment and innovation, the lag in regulatory reform has made Italy less attractive to foreign investors. This, in turn, has reduced spillover effects, i.e., the transfer of knowledge and new production methods by more productive multinationals. This negative impact

appears to have been present in Italy, which displayed greater regulatory rigidity than the other European countries until 2008. **Furthermore, the high level of corruption in Italy¹⁰ leads to a poor allocation of resources and hampers free competition.**

Lastly, the indirect impact of regulatory barriers is stronger in Italy than in the other European countries. As services are consumed as intermediate inputs by other sectors of the economy, the burden of regulatory rigidity is arguably transmitted to downstream sectors such as manufacturing. The OECD measures this knock-on effect through regulatory impact (RI) indicators¹¹, whose values are far higher in Italy (0.20 in 2007) than in the other European countries: 0.09 in France, 0.11 in the U.K., 0.14 in Germany and 0.15 in Spain.

- (9) Arnold, J., Nicoletti, G. and Scarpetta, S. (2008), "Regulation, Allocative Efficiency and Productivity in OECD Countries: Industry and Firm-Level Evidence", OECD Economics Department *Working Papers* no. 616, June.
- (10) According to Transparency International's Corruption Perceptions Index (CPI) Italy ranks 61st, with a score of 44 on a scale ranging from 0 (perceived as highly corrupted) to 100 (perceived as minimally corrupted). The European Commission estimates that corruption costs Italy €60bn a year. Confindustria, the employers' federation, estimates that corruption has caused Italy to lose €300bn in the past 20 years, i.e., an average of €15bn a year.
- (11) The regulatory impact (RI) indicator for each country is based on the input-output table. For each sector k (here: manufacturing), the indicator is equal to the sum of PMR indicators for regulated sectors weighted by their shares of intermediate consumption by sector k. The higher the indicator, the greater the weight of regulation in the upstream sectors.

Box 1: Competition and productivity

In theory, competition raises an economy's productivity through two mechanisms:

- a selection effect: the most efficient firms can produce a greater quantity of goods at lower cost. As a result, in a competitive environment, their market share increases, driving out the least productive firms and raising the economy's total productivity;
- an intra-firm effect: competition increases the incentive for firms to improve productivity by carrying out the necessary investments and/or engaging in innovative activities.

By raising entry barriers, regulatory rigidity thus modifies corporate decisions through two transmission channels. First, by curbing competition, existing firms have less incentive to invest, adopt new technologies^a and innovate^b—with negative consequences on their productivity in the longer run. Second, high entry costs hinder the renewal of the production system and the reallocation of the factors of production between sectors or between firms in the same sector^c.

Regulatory rigidity can have a direct or indirect impact:

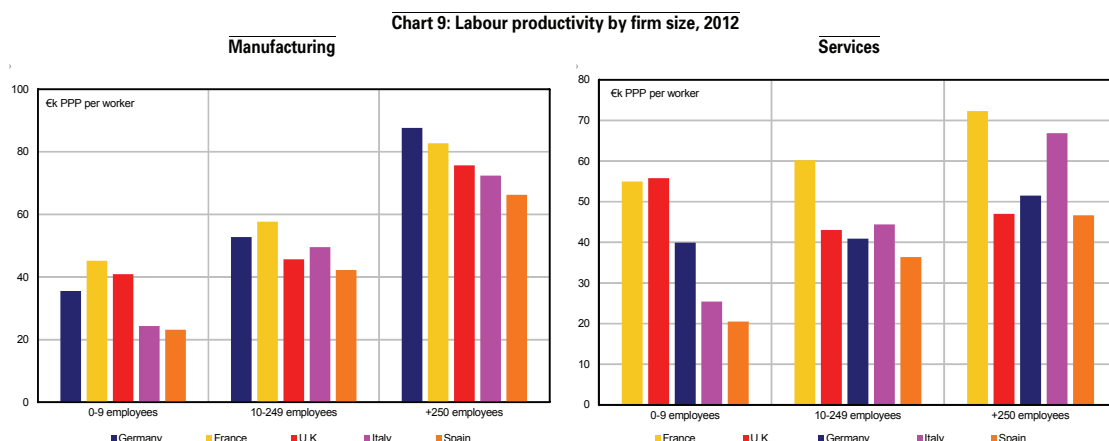
- The direct impact is all the stronger in services as international competition is limited. Regulations in the goods market thus directly modify the degree of competition in services.
- Regulatory rigidity can also generate inefficiency in downstream sectors, as services are an intermediate input, particularly in manufacturing.

- a. Bartelsman, E.J., Haltiwanger, J.C. and Scarpetta, S. (2013), "Cross-Country Differences in Productivity: The Role of Allocation and Selection", *American Economic Review*, 103(1), pp. 305-334.
- b. Aghion, P., Bloom, N., Blundell, R., Griffith, R. and Howitt, P. (2005), "Competition and Innovation: An Inverted-U Relationship", *Quarterly Journal of Economics*, 120(2) (May 2005), pp. 701-728.
- c. Nicodème, G. and Sauner-Leroy, J.B. (2007), "Product Market Reforms and Productivity: A Review of the Theoretical and Empirical Literature on the Transmission Channels", *Journal of Industry, Competition and Trade*, 7(1), pp. 53-72.

3.4 Small firms, often family-owned and with limited internationalisation

Italy's business fabric is characterised by a heavy proportion of microenterprises. 95% of Italian firms are microenterprises with fewer than 10 employees, a proportion similar to that of France and higher than Germany's 82%.

The small size of firms, a great majority of which are family owned and weakly internationalised, has contributed to the slackness of Italian productivity in the past two decades. While microenterprises are generally less productive, the productivity gap by firm size is distinctly wider in Italy than in the other European countries except Spain (see Charts 9).



Explanation: The chart shows productivity per worker (ratio of value added at factor cost to the number of workers) on a non-hourly basis, as Eurostat does not supply data on hours worked by firm size.

Source: Eurostat, *Structural Business Statistics (SBS)*, DG Trésor calculations.

Moreover, 86% of Italian firms are family-owned. Although this proportion, as well, is close to that of France (80%) and Germany (90%), actual governance is generally in the hands of the owner families. Only one-third of

Italian family-owned firms are run by external managers, versus two-thirds in Spain and three-quarters in France and Germany. This external-management gap may explain the weak performance of Italian family businesses¹².

Hela MRABET

(12) The literature establishes a negative correlation between family management and a firm's performance. For a detailed review of the literature, see Ferrero, G. and de Lubens, A. (2013), "*Faut-il favoriser la transmission d'entreprise à la famille ou aux salariés?*", DG Trésor, *Document de Travail* (Working Paper) no. 2013/06, November.

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Direction Générale du Trésor
139, rue de Bercy
75575 Paris CEDEX 12

Publication manager:

Michel Houdebine

Editor in chief:

Jean-Philippe Vincent
+33 (0)1 44 87 18 51
tresor-eco@dgtrésor.gouv.fr

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