Productivity in Europe
Trends and drivers in a service-based economy

FACTSHEET - PORTUGAL (PT)

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Contents

Key messages ........................................................................................................................................1
1 Role of intangibles in productivity in services .....................................................................................1
2 Firm size distribution and sectoral labour productivity ........................................................................2
3 Role of firm demography in productivity growth ...............................................................................3
4 Labour dynamics and productivity ......................................................................................................4
5 Impact of zombie firms on productivity ............................................................................................4
6 Policies for addressing low productivity growth ..................................................................................5
Key messages

- Portugal is characterised in many sectors by a higher share of employment in small firms (below 10 employees), which has a negative impact on sectoral labour productivity. The highest negative impact of firm size distribution on productivity is observed for manufacturing, followed by wholesale and retail trade, accommodation and food services, and professional activities.

- The share of jobs created in the low-productivity segment of the Portuguese services sector is considerably higher than the EU average. In addition, the most productive firms within the services sector tend to shed more labour than their European average counterparts. These two observations are a sign of suboptimal labour allocation across Portuguese firms in the service sector.

- Portugal is among the countries which have the highest shares of zombie firms: about 7% both in manufacturing and in service sectors. Zombies are a major concern as they negatively affect healthy firms. Compared to EU average, the negative effect of zombies in Portugal is more pronounced for productivity, but less for employment growth and investment.

1 Role of intangibles in productivity in services

Figure 1. Investment-to-capital ratio (left) and contribution of intangible capital growth to productivity growth (right) in 2015.

Portugal ranks close to average among EU-15 countries in terms of intangible investment-to-capital ratio, while its contribution from intangible capital growth to productivity growth is below average (0.13% versus 0.19%, the average of countries). Looking at the detailed asset composition, the contribution from organisational capital growth is much lower than the average.

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2 Firm size distribution and sectoral labour productivity

Figure 2. PT – Percentage difference in labour productivity at the aggregate and sectoral levels relative to the EU28, contributing effects (2016)

Figure 3. PT – Percentage change in labour productivity at the aggregate and sectoral levels, contributing effects (2012-2017)


Apparent labour productivity in a representative aggregate of the market economy in Portugal was 39.6% below the EU28 figure in 2016. This difference is to a large extent the result of lower intrinsic productivity levels than peers (-28.4 percentage points, pp), with a quarter of the gap being explained by a negative contribution of both the sectoral composition effect (-4.1 pp) and the firm size distribution effect (-7.2 pp).

In particular, the average size of enterprises is smaller than for the EU benchmark due to a larger employment share in smaller firms (below 10 persons employed) relative to both mid-sized and bigger firms. This feature seems to be conditional on the size of the domestic market, as well as on specific aspects of the institutional and judicial framework, such as regulatory quality.

The overall picture – i.e. negative size distribution effects exacerbating negative pure productivity effects – is to a large extent shared at the sectoral level, particularly for manufacturing activities (NACE section C), wholesale and retail trade (G), accommodation and food services (I) and professional activities (M). The most noticeable exception is transportation and storage (H), for which higher intrinsic productivity levels than peers more than compensate negative size distribution effects.

At a more disaggregated level, the negative size distribution effect in the manufacturing sector is more limited for industries with higher technological content (e.g. machinery and motor vehicles), whereas, among services, is particularly large for legal, accounting, architectural and engineering activities.

On a dynamic perspective, recent developments (2012-2017) suggest a positive contribution of firm size distribution to productivity growth, although its role has been much more limited compared with pure productivity gains – i.e. increases within firm size classes. The most positive developments were recorded for professional activities (M), in which size distribution effects explain most of the productivity growth (3.6 pp out of 4.6%).

² C: Manufacturing; F: Construction; G: Wholesale and retail trade; repair of motor vehicles and motorcycles; H: Transportation and storage; I: Accommodation and food service activities; J: Information and communication; M: Professional, scientific and technical activities; N: Administrative and support service activities.
3 Role of firm demography in productivity growth

Figure 4. PT – Entry rates in business services (left-hand side) and in 1-digit industries\(^3\) (right-hand side), percentages

Figure 5. Entry rate for firms with at least 10 employees in business services, percentages.

Entry rates (without sole proprietorships) in services increased from 9.0 % in 2008 to 9.8 % in 2017. We do not observe a widespread decline or increase in entry between 2008 and 2017 across industries. However, a slight decline in entry rate is present for larger-than-micro firms in the business services sector (1.6 % in 2008 versus 1.5 % in 2017), a segment of the corporate sector where entry rates are shown to be relevant for aggregate productivity growth. The level of entry rate is at the average of EU countries for larger-than-micro firms (average in 2017: 1.5 %), while it is above the average for all firms (average in 2017: 9.1 %, without sole proprietors). Thus entry does not seem to be an impediment to productivity growth in Portugal.

\(^3\) One-digit industries include: Mining and quarrying (B); Manufacturing (C); Electricity, gas, steam and air conditioning supply (D); Water supply; sewerage, waste management and remediation activities (E); Construction (F); Wholesale and retail trade; repair of motor vehicles and motorcycles (G); Transportation and storage (H); Accommodation and food service activities (I); Information and communication (J); Financial and insurance activities (K); Real estate activities (L); Professional, scientific and technical activities (M); Administrative and support service activities (N); Education (P); Human health and social work activities (Q); Arts, entertainment and recreation (R); Other service activities (S).
4 Labour dynamics and productivity

Figure 6. PT and EU – Job creation (growing firms) and destruction (shrinking firms) along the productivity distribution.

Note: the graph shows the share of jobs created / destroyed by the companies in the top (p75 and above) and bottom (below p25) parts of the productivity distribution. The figures represent averages over the sample period.

We observe that current labour reallocation dynamics are in line with an economy that is increasing its allocative efficiency as at the top of the distribution relatively more jobs are created than destroyed. Furthermore, the opposite is true at the bottom, especially in Manufacturing.

In Portugal we see that allocative efficiency increases in both the service and manufacturing sectors. In manufacturing (services) over 45 percent (about 47 percent) of job creation is due to the most productive quarter of companies. Both sectors create some inefficient jobs, however. This share is smaller in the case of manufacturing, albeit still somewhat higher than the EU average.

An apparent difference between the service and manufacturing industries in Portugal is the share of job destruction at the top of the distribution. In the service sector, nearly a third of the job destruction is that of the most efficient jobs, while in the case of manufacturing it is only around 25 percent. While the latter is in line with the EU average, the former is higher. As the share of created jobs at the top productivity quintile is high, this might be a sign of heightened dynamism in the service sector.

5 Impact of zombie firms on productivity

Figure 7. Average share of Zombie firms between 2010 and 2015.

In recent years, zombie firms have become prevalent in Europe (Figure 7). Portugal is among the countries where this phenomenon is most evident: we classify 8 percent of the firms in both the manufacturing and service sectors as zombie firms.

A major policy concern related to the existence of zombie firms is their impact on the rest of the economy. Table 1 investigates the impact of the share of the resources held by zombies on the performance of non-zombie firms via regression analysis. We measure the industry-zombie share as the share of real capital held by zombie firms within a 2-digit NACE sector in a year and investigate its effect on non-zombie firms.

Results suggest that zombies have significantly negative spillover effects on investment rates by non-zombies. We also find that the productivity gap between healthy and zombie firms decreases as zombie shares increase, implying that zombies tend to lower average industry-wide productivity levels. When compared to EU level results, the effects on employment and investment in Portugal are smaller, whereas the effects on labour productivity and TFP are higher.

<table>
<thead>
<tr>
<th>Table 1. The effects of zombie congestion on non-zombies in Portugal</th>
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</thead>
<tbody>
<tr>
<td>employment growth</td>
</tr>
<tr>
<td>Non-Zombie</td>
</tr>
<tr>
<td>(0.004)</td>
</tr>
<tr>
<td>Non-Zombie x Industry Zombie share</td>
</tr>
<tr>
<td>(0.035)</td>
</tr>
<tr>
<td>Number observations</td>
</tr>
<tr>
<td>R2</td>
</tr>
</tbody>
</table>

Economic significance

Congestion at p75 | congestion at p75 - EU level results

<table>
<thead>
<tr>
<th></th>
<th>Employment growth</th>
<th>Investment rate</th>
<th>labour productivity</th>
<th>TFP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Zombie</td>
<td>-0.3</td>
<td>-2.6</td>
<td>-7.3</td>
<td>-5.2</td>
</tr>
</tbody>
</table>

Note: Each column shows results from separate regressions. They include controls for firm size, year, sector controls. The uppermost line shows the dependent variables: Employment growth is measured as $2^{(e_i-e_j)}$, investment rate as log change in real capital. Congestions refer to the percentage difference in the outcome variable between non-zombies in sector with median or p75 zombies share and those in sectors without zombies. The p75 for EU is 8.4%, while for 9% for Portugal. The last line gives results for an EU level estimation with the following countries involved: Bulgaria (BG), Czech Republic (CZ), Germany (DE), Denmark (DK), Spain (ES), Finland (FI), France (FR), Italy (IT), Latvia (LV), Portugal (PT), Romania (RO); Sweden (SE), Slovenia (SI), Slovakia (SK).

6 Policies for addressing low productivity growth

Low investment intensity, as measured by the ratio of Gross Fixed Capital Formation to GDP, has been long recognized as one of the reasons behind stagnant productivity in Portugal in recent periods. This slacking level of investment partly stems from very high indebtedness levels in both the private and public sectors. To address the investment vacuum, the most important public policies to support it have been associated with the successive multiannual frameworks established between Portugal and the European Commission. Operational Programmes (OP) have addressed both large public (or semi-public) infrastructures and direct business investments (e.g. the Compete 2020 OP in the current programming period). Concerning liquidity constraints faced by firms, Portugal has established measures such as the Capitalizar program and set up institutions such as Instituição Financeira de Desenvolvimento (IFD).

In recent decades Portugal has also introduced significant changes in both product and services markets’ regulation, with measures to boost competition conditions. The measures implemented through the SIMPLEX and SIMPLEX+ programmes, together with the Licenciamento Zero measure, have reduced the requirements to establish new firms and generally the administrative burden faced by firms. In addition, the most important infrastructure and public utilities markets, including telecoms, energy and transportation have been opened up to competition. The Economic and Financial Assistance Program established by the international organizations in 2011 addressed mainly short-term stability, but it also included several reform measures to liberalize product and service markets. Portugal’s standing in international rankings which assess business environment conditions has improved in recent years.

Measures have also been implemented to loosen labour market regulation, particularly since the 2000s, with changes in employment protection legislation, unemployment benefits, activation, collective bargaining,
minimum wages and working time. Labour market reforms have tried to address the misallocation of resources between the tradable and non-tradable sectors, with the former traditionally employing workers with higher average skills and more years of education. Despite the introduction of these reforms, the OECD still considers Portugal as one of its member countries with more restrictions in relation to individual dismissals.
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