

## Chapter 3

# Policy priorities to restore productivity growth

*Portugal saw a stagnation of its convergence process over the 2000s and the great recession is likely to hold back potential growth over the coming years. Weak productivity gains across most sectors of the economy have been at the origin of slow growth. Productivity growth needs to be boosted by an improved business environment, notably through further easing licensing procedures at the local level and reducing the length of the judicial process. In the medium run, improving transport infrastructure is fundamental to achieving higher competitiveness. The government should play a proactive role, but investment decisions should be selective and based on transparent cost-benefit analysis. In the long run, the key issue is to close the educational gap, by enhancing educational outcomes and by promoting equity in educational opportunities. The authorities should expand the vocational education and training reform and reinforce the professional content of the training programmes.*

**A**fter joining the EU in 1986, Portugal undertook a wide range of reforms which contributed to economic growth and allowed the country's living standards to rise towards those in richer OECD countries. GDP per capita rose from below 60% the OECD average in 1986 to close to 70% in 2000. However, the early 2000s saw a stagnation of GDP growth in Portugal compared to other OECD countries, and a subsequent reversal of convergence. More recently, the country was hit hard by the global economic crisis, which is likely to lower its potential growth over the medium term. To foster potential growth, Portugal needs to improve its labour market policies (Chapter 1) and promote reforms to restore productivity growth, which is the topic of this chapter.

## Restoring productivity growth

### **An economy-wide slowdown in productivity growth**

Portugal's slowdown in growth is due to a marked deterioration in trend productivity. Productivity growth fell to 0.8% on average between 2001 and 2006 from 2.0% between 1995 and 2000 (Table 3.1). Among mediterranean European countries, Italy and Spain experienced similarly weak performances. In contrast, eastern European countries exhibited high and accelerating labour productivity growth between 1995 and 2006, and rapidly caught up with Portugal's income levels.<sup>1</sup>

A shift-share analysis (see Box 3.1 for details on the methodology) shows that structural change was the main force behind labour productivity growth at the beginning of the 1990s, as labour moved to high productivity sectors (see Table 3.1 and Table 3.A1.1 for detailed results). This process decelerated markedly from 1995 on, despite the fact that Portugal had clearly not yet completed the structural change process. During 1995-2000, the within-sector growth rate picked-up, which compensated for the decline in productivity gains arising from structural change. However, since 2000, productivity growth within sectors also slowed.

Productivity growth in agriculture has been particularly low, pointing to margin for stronger aggregate performance in the future while Portugal achieves the agricultural transition. The country is still lagging behind its European neighbours in this respect. Indeed, employment in agriculture, hunting, forestry and fishing still represented 11.8% of total employment in 2006, which compares to 4.2% in Italy and 4.7% in Spain. While the expansion of the services sector over the second half of the 1990s was accompanied by strong productivity gains, the contribution of services declined after 2000. Notably, the contribution of the distribution, hotels, and restaurants sector became negative over the period 2001-06 (see Table 3.A1.1). Weak performance was mostly due to negative within-sector productivity growth over the latest period. While the share of non-tradable services in value added declined only slightly over the last two decades, its share in employment increased markedly. In 2006, the distribution, hotels, and restaurants sector accounted for 23.5% of total employment, the highest proportion among the considered countries, except for Greece.

Table 3.1. **Decomposition of annual productivity growth**  
As a percentage and year-on-year

	Labour productivity growth	Within-sector effect	Structural effect	Cross effect
1990-1995 average <sup>1</sup>				
Hungary	5.4	1.7	1.6	-0.3
Italy	1.8	1.2	0.6	0.0
<b>Portugal</b>	<b>2.6</b>	<b>0.0</b>	<b>3.5</b>	<b>-0.8</b>
Spain	1.1	0.5	0.6	-0.1
1995-2000 average				
Czech Republic	2.1	1.5	0.4	0.0
Greece	2.5	1.5	0.8	-0.1
Hungary	2.9	1.6	1.2	-0.2
Italy	1.1	0.3	0.9	-0.1
Poland	4.6	3.5	1.2	-0.1
<b>Portugal</b>	<b>2.0</b>	<b>1.6</b>	<b>0.4</b>	<b>0.0</b>
Slovak republic	4.2	3.6	0.9	-0.3
Spain	0.2	-0.1	0.3	0.0
2001-2006 average				
Czech Republic	3.9	3.6	0.3	0.0
Greece	2.5	1.7	1.0	-0.1
Hungary	3.9	3.3	0.7	-0.2
Italy	-0.3	-0.5	0.2	-0.1
Poland	4.3	4.1	0.3	-0.1
<b>Portugal</b>	<b>0.8</b>	<b>0.4</b>	<b>0.4</b>	<b>0.0</b>
Slovak Republic	4.7	4.6	0.2	-0.3
Spain	-0.1	-0.3	0.2	0.0

1. Data for 1990-95 are missing for the Czech Republic, Greece, the Slovak Republic, and Poland.

Source: OECD calculations based on *Structural Analysis (STAN) Database*.

### Box 3.1. Productivity growth in Portugal: a shift-share analysis

The change in productivity can be broken down in its components in order to isolate the effects of structural change due to changes in the sectoral employment structure, following the so called shift-share technique. This chapter uses the methodology presented in Antipa (2008). The first component of productivity growth (henceforth the *within-sector effect*), is obtained by calculating productivity growth rate holding sectoral employment shares constant; more precisely, this component is the sum of sectoral productivity growth rates weighted by the share of each sector in total value added in the previous period. The second component of productivity growth (henceforth the *structural effect*) corresponds to the impact of a change in the sectoral employment structure; it is calculated as the sum in variations in sectoral employment shares, weighted by the relative productivity rate of each sector in the previous period. Even in the absence of productivity gains in each sector of the economy, economy-wide productivity growth may increase if employment shares shift from the least productive sectors to the most productive sectors. The third and last component is a *cross effect* computed as the product of the latter two. This component is generally negligible in size. Data at the industry level are available for a subset of countries through the latest version of the Structural Analysis (STAN) database for industrial analysis.\*

\* The data on which the productivity analysis relies have been extracted in December 2009. For further information on this database, see [www.oecd.org/sti/stan](http://www.oecd.org/sti/stan).

Weaker labour productivity growth in industry since 2000 has also contributed to Portugal's poor performance, as in other southern European countries.<sup>2</sup> This can be explained by a particularly high degree of deindustrialisation over the recent period. eastern European countries experienced similar reductions in the share of industry in total employment but the latter contributed to the strong labour productivity performance of these countries, potentially because the reorganisation of industry along with the growth in FDI was accompanied by significant productivity gains – as reflected in the concomitant high within-sector effect in these countries.

### **A three-layer strategy to restore productivity growth**

Portugal's disappointing growth performance in the last decade is broadly attributable to a shift of resources towards low productivity industries, in particular non-tradable services, along with a deterioration of Portugal's performance in traditional manufacturing industries. Portugal also displayed negative growth in labour productivity in the market services sector over the last period for which data are available, which contributed to the decline in aggregate labour productivity growth. Against this background, policies can be effective at delivering productivity growth in medium to long term.

- In the short-medium term, there are significant margins to increase productivity by encouraging the entry of efficient firms and the exit of inefficient firms in the services sector, in particular in wholesale and retail trade, hotels and restaurants.
- In the medium term, further productivity gains can be achieved by climbing the value-added chain in the traditional exporting industries, notably those that have been hard hit by competition from eastern European countries and Asian countries. The textile sector remains the largest manufacturing employer. Portugal needs to achieve stronger productivity by specialising in higher quality products. The automotive sector has been at the core of Portugal's export and FDI strategy, and Portugal should be able to remain an attractive place for automotive FDI. Portugal should also pursue efforts to promote itself as a higher quality destination for tourism.
- In the long run, structural policies should favour the reallocation of resources to the high productivity growth sectors such as the skill and technology intensive industries. The current small size of these industries reflects in part the country's substantial educational gap. Hence, this strategy will be effective only over the long run, because it will take some time for reforms to education to translate into stronger growth performance.

Portugal remains one of the poorest OECD countries. Despite the existence of a number of modern productive sectors, the industrial structure is still characterized by a large primary sector. The economy is segmented and it exhibits a dichotomy between a minority of small scale highly productive modern sectors and a majority of low-skill and low-productivity activities. Even within sectors, there is a substantial degree of heterogeneity between firms. This economic structure is reflected in a two-tier labour market, characterised by strong mobility barriers between segments (Vieira et al., 2005).

Given the country's stage of development and notwithstanding the role of the market as the fundamental mechanism for resource allocation, the government can play an active, facilitating role in upgrading industry and infrastructure (Lin, 2010). Against this

conceptual background, this chapter focuses on appropriate growth policies for the Portuguese economy, over the short, medium and long term horizons:

- Portugal has engaged in important *business environment* reforms over the last five years: efforts need to be pursued and implementation issues need to be addressed in order to reap the benefits of structural reforms.
- *Transport infrastructure* is as an important factor for a catching-up economy, especially for a small peripheral country that needs to attract FDI and achieve higher competitiveness. Cost-effective investment in infrastructure can deliver substantial economic returns while at the same time addressing environmental issues.
- *Education* is the most important bottleneck to restore productivity growth in Portugal. The government has been very proactive in reforming the education system to up-skill the labour force. Nonetheless, raising educational levels in the labour force should go along with promoting equality of educational opportunities. Reducing dropout rates and increasing the share of the population with basic skills should be on top of the policy agenda.

## Improving the business environment

### **The manufacturing sector: climbing the value-added chain**

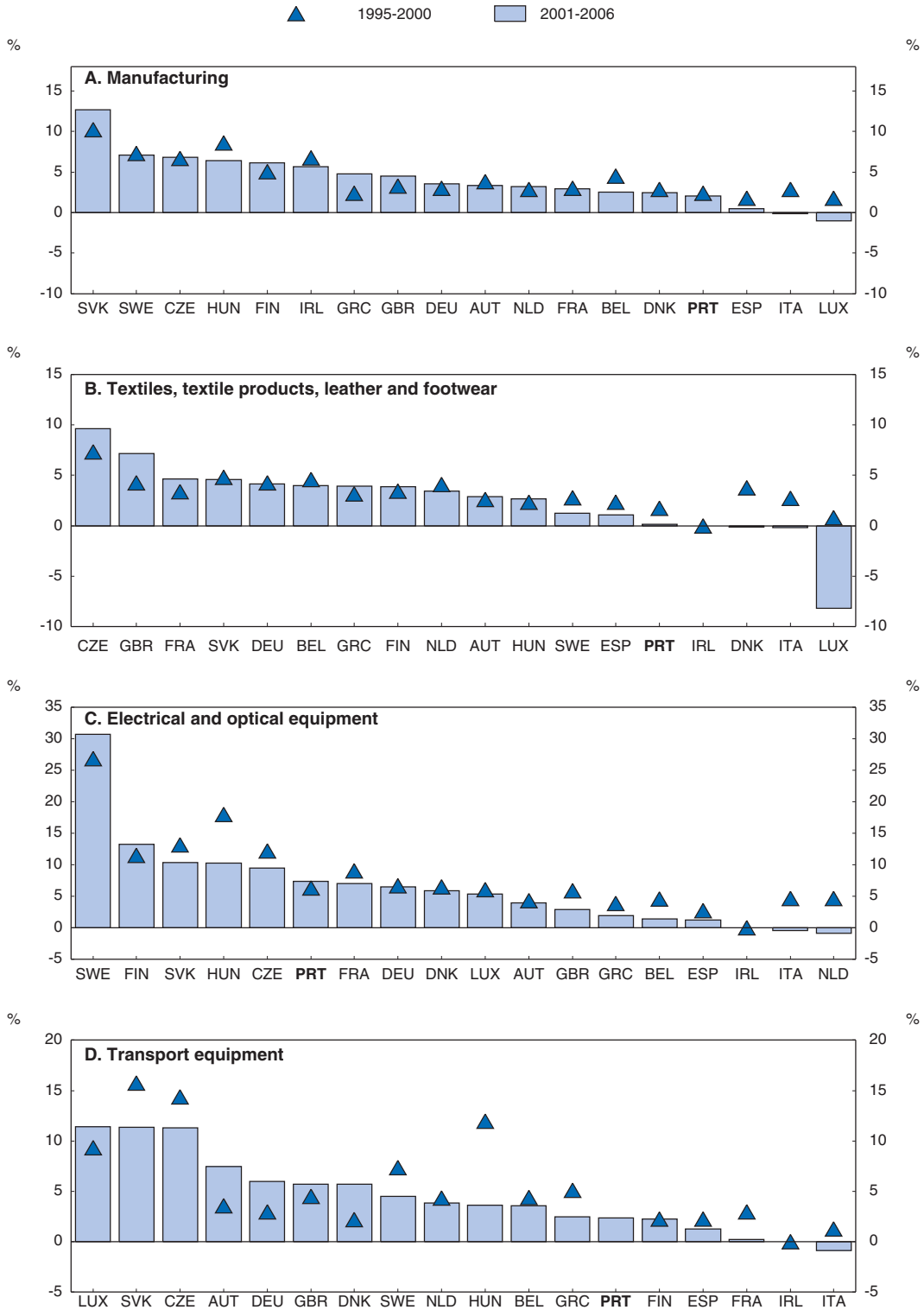
Portugal's aggregate productivity growth was mainly driven by the manufacturing sector, but it experienced a relatively low performance over the recent period in a comparative perspective. Labour productivity growth in manufacturing was particularly low compared to eastern European countries (Figure 3.1). High and medium-high technology industries, in particular electrical and optical equipment, have typically experienced relatively high rates of productivity growth over the recent periods: Portugal's performance has been on par with that of other European countries in that respect. However, given the low weight of this fast-growing sector in manufacturing, this relatively good performance has not contributed significantly to the overall picture.

The sector of textile has exerted a major drag on Portugal's manufacturing productivity growth over the recent period. The industry absorbs a high yet declining share of employment and value added. It is still the first employer in manufacturing (textiles, leather and footwear represented 29% of manufacturing employment in 2006 *versus* 7.8% in the EU19; textiles alone represented 23% of manufacturing employment *versus* 6.6% in the EU19). Productivity growth was generally low and strongly negative in Portugal as in Southern European countries (Spain, Greece and Italy). Other traditional textile exporters, such as France, managed to attain relatively high rates of productivity growth while also facing competition from lower income countries.

Portugal's textile sector is not profitable compared to other European countries (Figure 3.2).<sup>3</sup> Portuguese firms have been progressively squeezed by foreign competition and exports have experienced a steady decline.<sup>4</sup> Still, the country can improve its competitive position by achieving higher productivity growth: one way forward is that of upgrading the quality and marketing content of Portuguese products. There is evidence that this process is already taking place: many of the (remaining) textile firms are innovative and focus on high value added products. Even more than the clothing industry, the exporting footwear industry is a relevant example of successful quality upgrading strategy: it has been able to climb the value added chain by specialising in niche and luxury products, as described in the following Box 3.2.<sup>5</sup> Portugal should build on this promising

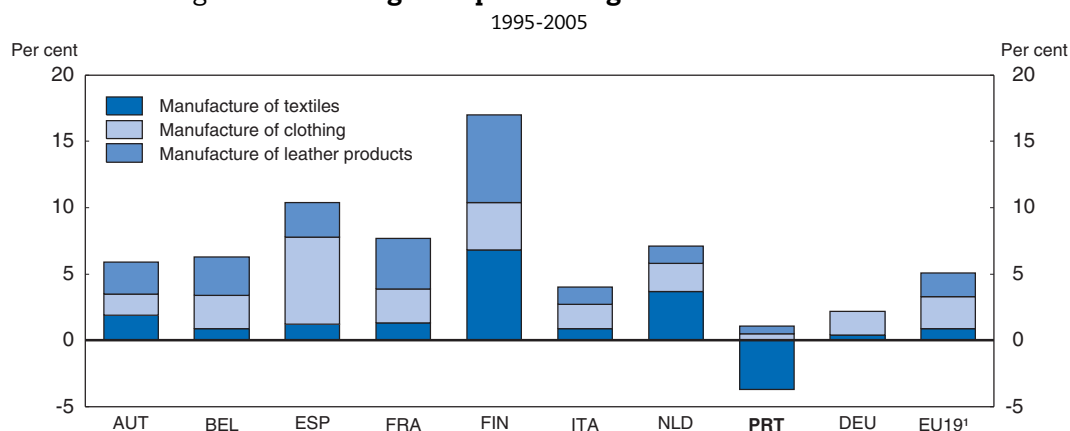
Figure 3.1. **Productivity growth in manufacturing**

Five-year average of annual growth rates




Source: OECD, Structural Analysis (STAN) Database.

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Figure 3.2. **Average net profit margin in the textile sector**

1. Simple average.

Source: European Commission (2009), "Sectoral growth drivers and competitiveness in the European Union".

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### Box 3.2. **Climbing-up the value added chain: the example of the footwear industry**

The Portuguese footwear industry is a useful example of the possibility of modernising the economy by upgrading traditional industries. The underlying strategy can be summarised by three main pillars: national support, local knowledge sharing and proactive benchmarking.

The Portuguese footwear industry was one of the industries most exposed to globalisation, mainly because of its reliance on unskilled labour. During 2000-06, the central government ran the PRIME programme (*Programa de Incentivos à Modernização da Economia*) to modernise the economy by upgrading traditional industries, among other strategic axes. The programme was recognised as being particularly efficient in the case of the footwear industry because it put in place a comprehensive scheme of incentives that mostly supported the overall business environment (56% of the incentives) compared with direct support to enterprises (44% of the incentives).

A key partner for the implementation of this programme was the national footwear association (APICCAPS). This association used the programme to help firms upgrade the skills of their workforce, for example by running an industry-specific training centre and conducting large-scale R&D projects that would benefit a wide array of member firms due to the economies of scale. It promoted benchmarking by supporting visits to international fairs and exhibitions and it encouraged firms to develop a close relationship with customers, suppliers, competitors and institutions, thereby allowing the constant introduction of changes in processes and products.

The industry is strongly oriented towards international markets and, despite of the exit of many multinational companies (in 2008 foreign-capital companies contributed 11% of total Portuguese exports, against 39% in 2000), the Portuguese footwear industry managed to increase its export capacity. In 2008, exports were 95.5% of Portuguese production versus 87% in 2000.

Portugal succeeded in strengthening the industry's position internationally by shifting towards those market segments of greatest added-value and by trying to differentiate its products. Moreover, there was a clear strategy of market diversification, focusing on high

**Box 3.2. Climbing-up the value added chain: the example of the footwear industry\* (cont.)**

growth markets (Brazil, China, United Arab Emirates, USA, Greece, Japan, Poland and Russia). The Portuguese footwear industry is currently specialised in leather footwear (88% of total production in 2008). Many companies successfully created their own brands based on local know-how. Recent intellectual property statistics reflect this process. Between 2002 and 2008, the number of requests for the registration of brands and logotypes grew from 6 to 32, and the number of applications for the registration of styles increased from 8 to 229. Furthermore, Portugal is becoming relatively strong in women's footwear. In 2008 women's footwear represented half of leather footwear production. This new approach also reflects the shift towards higher-value market segments. Recent trade data suggest that climbing up the value added chain is reflected by significant growth of the average price per pair of exported footwear in Portugal.

\* This box is based on the *OECD territorial review of Portugal* (OECD, 2008a) and on APICCAPS (2009a, 2009b).

experience to expand industrial clusters developed around local stakeholders such as business associations.

In transport equipment, Portugal's productivity is growing in line with the productivity of larger European countries, although substantially less than eastern European countries (Figure 3.1). The sector represents a small share of domestic activity (around 4% of manufacturing employment and 6% of manufacturing value added in 2006); however, the automotive industry has been virtually at the core of Portugal's growth strategy, due to its export content and to the important presence of FDI. The development of an FDI-led automotive cluster in Portugal has been recognized as a success story because it has been generating international transfer of technologies and regional spillover effects. Given the benefits from foreign direct investment (FDI) in this sector and the growing international competition – in particular from eastern European economies – Portugal needs to maintain its attractiveness for international investors. The country displays a number of comparative advantages in this sector, such as a stable and secure legal environment and an experienced workforce. The government has been launching a strategy to develop the sector, in particular by promoting co-operation between firms and the R&D sector (for example, it launched specific R&D co-operation programmes with the US Massachusetts Institute of Technology and the German Fraunhofer Institute). Programmes to develop co-operation between firms and the R&D sector should be expanded. The authorities should also assess the performance of these programmes and their cost-effectiveness.

***The services sector: addressing inefficiencies and favouring firms' reallocation***

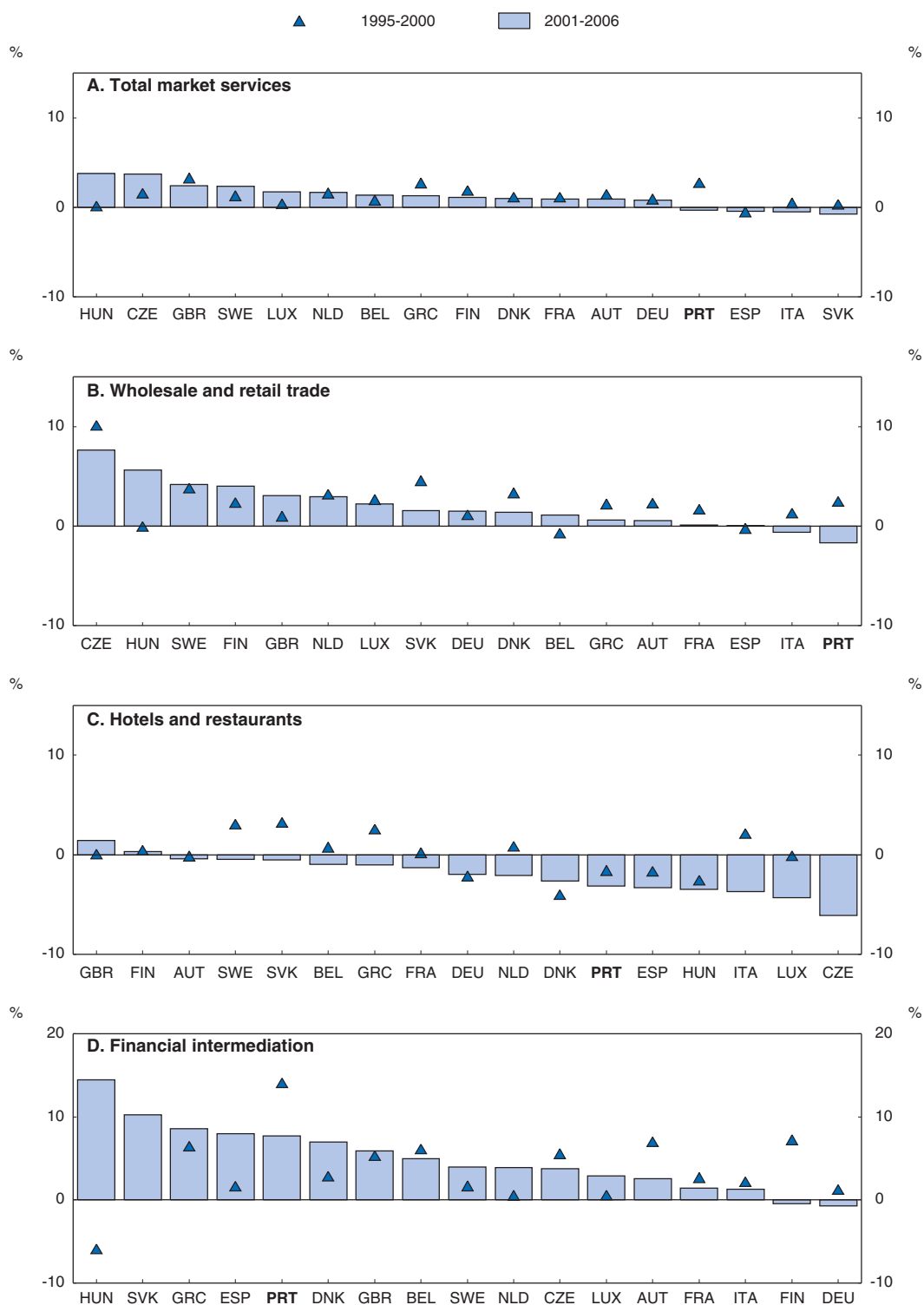
Labour productivity growth in services has been negative since the beginning of the current decade while at the same time the weight of the service sector in the overall economy has risen. The expansion of the non-tradable sector and the concomitant real exchange overvaluation after euro accession has been at the centre of Portugal's anaemic performance (Blanchard, 2007). Other countries experiencing structural change reached relatively high productivity growth in the service sector, such as the Czech Republic and Hungary (Figure 3.3).<sup>6</sup>

Against this background, it is essential that Portugal achieves higher productivity in services. Despite their low skill content, non-tradable services can be an important source of



Figure 3.3. **Productivity growth in market services**<sup>1</sup>

Five-year average of annual growth rates



1. Business sector services (ISIC Rev. 3, 50-74).

Source: OECD, Structural Analysis (STAN) Database.

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productivity growth. International experience shows that stronger performance has been associated with the modernisation of the sector, and in particular the introduction of cost-reducing technologies, which help to enhance logistics and inventory (Wölfl, 2003). According to recent data published by the European Commission (European Commission, 2009), the wholesale and retail trade sector accounts for approximately three quarters of the US lead in productivity growth over the EU25 over the period 1995-2004. Lack of competition in the distribution sector in Europe has historically favoured small inefficient firms. This is particularly relevant for Portugal and other Southern European countries that have a relatively high number of micro enterprises and a substantial proportion of informality.

Wholesale and retail trade along with the hotels and restaurants sector played a major role in shaping labour productivity dynamics in Portugal (Figure 3.3). Labour productivity gains have been particularly weak and even negative over the last period for which data are available. Yet, these sectors account for more than half of employment in market services. As with the manufacturing sector, labour productivity growth in high skill service sectors has been relatively strong, as can be seen in financial intermediation. However, this fast growing sector has a limited potential to contribute to Portugal's overall performance: the finance sector (which includes financial intermediation, insurance, real estate and the business services) represented around 8% of total employment in Portugal in 2006, as opposed to 14.4% in the EU19. According to data from the National Statistics Institute, financial intermediation represented 1.6% of total employment, 0.3 percentage points lower than Spain and half the proportion observed in Germany.

### *Diversifying and up scaling the tourism sector*

The finding of a substantial productivity gap in non-tradable services is not new (Blanchard, 2007). McKinsey Global Institute sectoral case studies (McKinsey Global Institute, 2003) estimated that productivity in tourism (hotels) was only 44% of the level in the benchmark country (France). Achieving higher productivity growth in tourism is a priority for Portugal to restore productivity growth. It is one of the few sectors where the country has clear competitive advantages at a global scale. The government and tourism stakeholders are currently making a major commitment to developing the sector. Portugal's strategy is reflected in the actual National Strategic Plan for Tourism (PENT) launched in 2005. The plan formulated strategic development lines and objectives for the sector and supported the implementation of specific projects, including interventions in zones of tourism interest, development of distinctive and innovative content, events coordination, access and brand development. There have also been recent improvements in tourism business environment, notably the computerisation of new licensing procedures for touristic projects in 2009.

Portugal should climb the value added chain in tourism by focusing on targeted segments. The government is being proactive in this respect and there are encouraging signs of improvement in the country's tourist offering. A significant number of quality hotels are now available in order to assure an adequate answer to the level of demand. Through the past 4 years, more than 160 new hotels (between 3 and 5 stars) have been launched and opened. Various premier projects have been launched in traditional zones. New high-quality destinations are emerging, such as the Litoral Alentejano area, the Oeste zone, Porto Santo and the Douro. As a result, tourism in Portugal has recently experienced a boom period (from 2005 to 2008). Building on this successful experience, Portugal should consolidate the diversification and the up scaling of the country's supply of tourism

services. One further avenue for developing tourism was advocated by Blanchard (2007), who suggested that Portugal could become an attractive destination for pensioners, along the lines of the “Florida model”.

The tourism sector is also a potential recipient of FDI. Portugal displays a relatively small proportion of foreign affiliate employment in the hotels and restaurants sector compared to other European countries (European Commission, 2009). Moreover, comparing the export specialisation in tourism with the relatively small flows to this sector suggests that the economy is not yet really reaping the complementarities between trade and FDI (OECD, 2008b). Increasing Portugal’s attractiveness for foreign direct investors could boost the country’s unexploited potential in tourism.<sup>7</sup> Reforms aimed at improving cost competitiveness and enhancing the business environment should contribute to raising FDI. To exploit Portugal’s competitive potential in tourism, the government should also reduce barriers to FDI in the air sector by increasing competition, as discussed in this chapter and in the previous Survey of Portugal (OECD, 2008b).

### ***Addressing market structure inefficiencies in services: the case of the distribution industry***

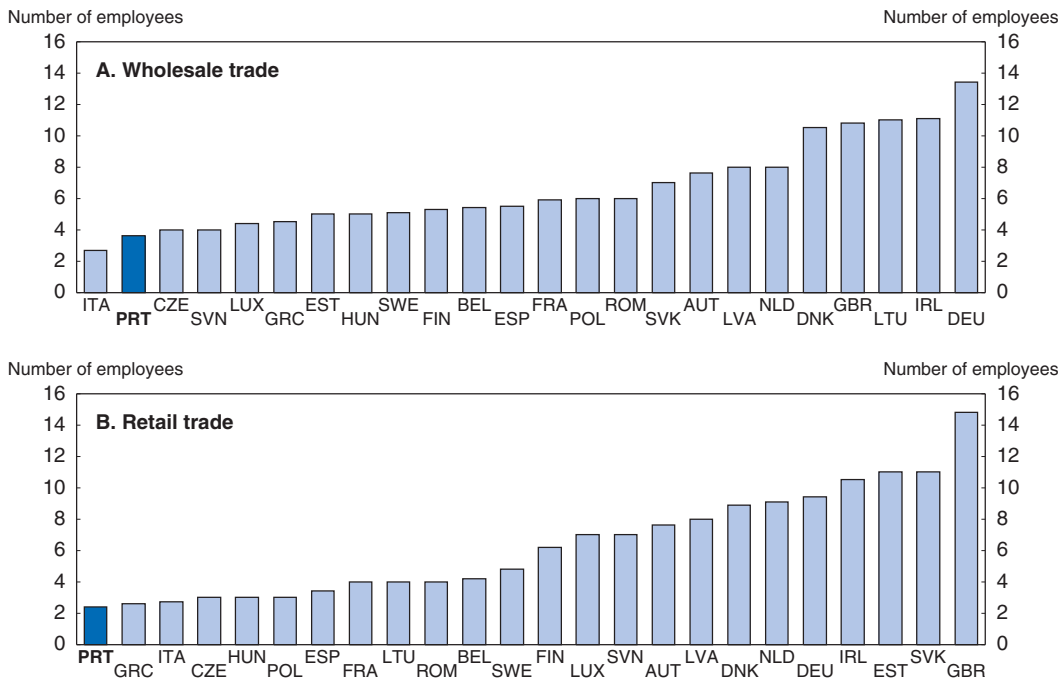
The services industries are broadly characterised by specific inefficiencies that can be amenable to market structure features, in particular the size distribution of firms. Analysis of the distribution sector provides a useful picture of some specificities of the non-tradable services industry in Portugal. This sector accounts for almost half of the registered firms and almost a third of new registered firms, much more than on average in Europe.<sup>8</sup> According to Eurostat data, small firms (1 to 9 employees) represent more than 96% of total firms in this sector in 2006, and almost 56% of employees.<sup>9</sup> In both wholesale and retail trade, the average firm size is well below that of the EU27 (Figure 3.4).

The Portuguese distribution industry is characterised by two different business models, which reflects the dualism of the economy. One model is large retail businesses or chain stores with business in Portugal and/or abroad, and having international connections with production and logistic operators. They are usually highly competitive and innovative firms. The bulk of the sector, however, is composed of the traditional businesses, very often of a small size, having no external connections besides suppliers and tending to be less innovative. There is evidence that firm dynamics are hampered by barriers to exit in the traditional segment. This includes old contracts that under-price the rental value of space and an old workforce with low opportunity cost. Informality is another characteristic, although there is evidence that it is declining. Despite recent liberalisation, concentration indexes suggest that competition in this sector remains weak.<sup>10</sup>


Weak productivity growth in the distribution industry reflects different performance across the wholesale and retail trade segments. Indeed, according to *Instituto Nacional de Estatística* (INE) data, while productivity growth in retail trade has stagnated, productivity growth in wholesale trade declined. Recent policy initiatives might help achieving higher productivity growth in wholesale trade. The reforms have been introduced in the major supply markets (“mercados abastecedores”) and in the logistic infrastructure. The main operators are still in a process of adaptation of their logistic structures to the new framework, under the National Strategic Reference Framework (NSRF). Financial support is mainly oriented towards the introduction of technology and the acquisition of new equipments and of updated information systems. The government should continue to promote the modernisation of non-tradable industries, helping firms to exploit economies of scale and

Figure 3.4. **Average firm size**

2006



Source: Eurostat.

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thereby growing in size. In order to increase productivity and consumer welfare, the authorities should also boost competition in the retail and wholesale trade industries.

### **Broad-based reforms to improve the business environment**

One of the most notable and relevant recent reform processes in Portugal has been the reduction of administrative burdens on businesses, in particular to small and medium enterprises. Easing of the license and permits system and better communication and simplification of regulations has led to a dramatic reduction in regulatory and administrative opacity over the last 6 years.<sup>11</sup> Those reforms were carried out within the Portuguese Legislative and Administrative Programme, known as SIMPLEX.

Despite the dramatic improvement in business conditions, there are binding implementation issues at the local level. In principle, SIMPLEX includes initiatives to simplify permits regulations and procedures, such as the industrial facilities licensing regime and the simplification of local authority building permits. However, in practice, licensing is still very cumbersome at the local level, particularly so for industrial activities, and particularly so in relation to environmental concerns. In Portugal it takes 287 days to build a warehouse, including obtaining necessary licenses and permits, completing required notifications and inspections, and obtaining utility connections, according to the World Bank Doing Business indicators.<sup>12</sup> The OECD average is 157 days. Also, according to OECD Product Market Indicators, administrative burdens for sole proprietor firms are high in Portugal compared to most of OECD countries.<sup>13</sup> In order to make recent simplification reforms more effective, the articulation between national and local licensing procedures needs to be more effective, as recognized by the government. The 2009-10 edition of

*Simplex Autárquico* programme promotes collaboration in some licensing procedures between central government and a small but growing number of municipalities. Because municipalities are partly financed through licensing fees, this implies that the reform process in this area must go along with a reconsideration of the current framework for financing the municipalities.

The lengths of the judicial process, as well as the instability of the tax system (Chapter 2), create regulatory uncertainty in Portugal, which weights on economic activity and FDI. The level of compliance costs is particularly high, as detailed in Chapter 2. On average, it takes a medium-size company 328 hours per year to pay taxes and mandatory contributions in Portugal; the average across OECD countries is 213 hours per year.<sup>14</sup> The recent simplification of administrative procedures will be more effective if there is a concomitant improvement in the judicial system. As in other areas, Portugal needs to address major implementation issues when it comes to reap the benefits of structural reform. Specific policy recommendations to reduce compliance costs are discussed in Chapter 2.

Portugal has launched an ambitious competitiveness agenda and faces a narrow window of opportunity to implement it. The government's pledge to endorse structural reforms and the concomitant implementation of the 2007-13 EU Structural Funds programming period offer Portugal an opportunity to take a qualitative leap. Investment in long-term assets for competitiveness must be pursued via differentiated strategies building on the specific potential of each region (ranging from high-end skills to landscapes and biodiversity). The government should build better linkages between innovation and regional policy, combining national leadership and regional interfaces. The "Competitiveness and Technology Hubs" initiative is a promising approach and should be pursued further. Portugal should establish appropriate mechanisms to better exploit regional knowledge in order to stimulate development dynamics driven by inter-firm networks: the example of the footwear cluster in the Norte region suggests that this is a promising strategy to climb the productivity ladder. Portugal has no elected regional level of government that could reflect bottom-up views. More should be done to integrate the specific knowledge of local and regional actors in the policy-making process. One way forward to achieve this objective would be to clarify the role of the commissions for regional coordination and development as promoters of policy coherence and facilitators of collaboration (OECD, 2008a).

## Addressing infrastructure bottlenecks

### **Modernising transport infrastructure to reap the benefits of globalisation**

There is cross-country evidence that infrastructure investment boosts economic growth beyond its direct impact on the capital stock (Sutherland et al., 2009). This can come about through facilitating the division of labour, competition in markets, diffusion of technology, adoption of new organisational practices, or through providing access to new markets, resources or intermediate inputs. The government can play a proactive role in facilitating timely improvements of infrastructure in the process of structural change (Lin, 2010). Transport infrastructure is special in that it potentially has impacts on productivity that are not characteristic of other public-capital investments. Most obviously, transport improvements have benefits in the form of time savings which comprise a major part of the welfare gains in cost-benefit studies of transport projects and which accrue partly from reductions in congestion. There are also distinctive wider economic benefits of cheaper

transport. Reductions in transport stimulate trade, with positive implications for productivity (Frankel and Romer, 1999, Limao and Venables, 2001). Transport improvements have implications for the location of industry through changing access to markets, and also increase the size of agglomerations with attendant productivity gains (Combes *et al.*, 2008).

The main channel through which infrastructure affects productivity and competitiveness in a small trade-dependent economy like Portugal is that of trade costs associated with transport infrastructure, hence by stimulating trade and FDI. More generally, a good transport infrastructure can help to restore productivity not only in the tradable industrial sectors but also in the low-productivity non-tradable services sectors: if transport improvements lead to greater integration of the market, this can improve productivity through the impact of potential entry on the productive efficiency of firms with organisational slack or through stimulating innovation to protect economic rents. Strong evidence has emerged of productivity gains from agglomeration effects, especially so in the service sector (Crafts, 2009). Increased market size is also a stimulus to innovation.

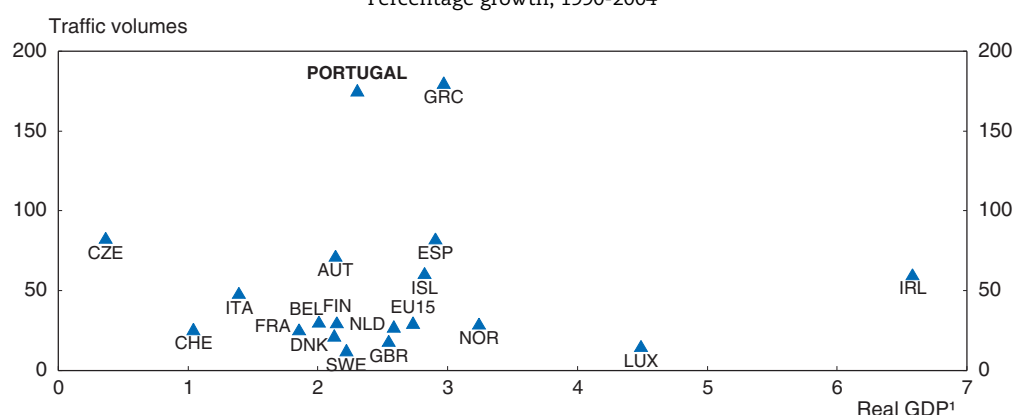
However investment needs to be undertaken within a policy framework that is conducive to growth and ensures the appropriate use of infrastructure. Central aspects of this framework are robust decision making, improving the selection of investment projects, the introduction of competitive pressure, and the application of incentive regulation (Sutherland *et al.* 2009). Moreover, given the current pressure on Portuguese public finances and the associated consolidation process, public investment has to be very selective. Finally, the government should pay attention to improved efficiency and increased profitability of SOEs, particularly so in railways. Hence, the authorities should ensure effective implementation of the new performance monitoring regulation in railways and expand it to other sectors.<sup>15</sup> Improving governance arrangements would also help increase efficiency. Profit maximisation rather than intermediate targets should be the objective of the SOEs as this allows managers greater discretion to achieve the State's objectives.

The government announced in the context of its Stability Programme for 2010-13 a number of measures aimed to reduce primary expenditure through the rationalisation of the state-owned enterprises (SOEs). These developments go along with an important privatisation process, part of which has been postponed due to financial markets turbulence. The specific measures aimed at curbing SOEs financial needs include greater selectivity in investment and the establishment of indebtedness thresholds ceilings, public service contracts, and wage restraints. The government is currently preparing the execution of the public service contracts with all SOEs in the transport sector. As soon as financial markets conditions stabilise, Portugal should further reduce the scope of the public enterprise sector, which remains extremely high in a comparative perspective (Wölfl *et al.*, 2009).

### **Rebalancing the transport mode**

Policy initiatives in transport infrastructure should reflect the imbalance of Portugal's current setting. While massive investment in motorways allowed different parts of the country to be connected, there has been a clear imbalance in favour of road investments, particularly so in motorways. Over the 1995-2004 period, there was an increase of 528% in the length of motorways. Passenger transport relies massively on private cars. During the past 15 years, the numbers of cars in circulation increased by 135% (IEA, 2009). Indicators of traffic volumes point to 175% increase of passenger cars between 1995 and 2004 in Portugal (Figure 3.5), as opposed to 30% for the EU15, despite the concomitant increase in

Figure 3.5. **Traffic volumes versus GDP growth**  
Percentage growth, 1990-2004



1. Compound annual growth rate.

Source: OECD, *Environmental data*, 2007 and OECD Economic Outlook Database.

StatLink  <http://dx.doi.org/10.1787/888932331125>

fuel prices (see Chapter 2). Congestion is an important issue in urban areas, where more could be done to increase public transport.<sup>16</sup>

The environmental implications of these patterns are dramatic. Road transport has accounted for the largest increase in CO<sub>2</sub> emissions between 1990 and 2007 (93%), or 57% of all emission increases, reflecting the growing prosperity of Portuguese consumers but also the high levels of state investment in transport infrastructure. Road transportation represents 87% of transport-related emissions in Portugal (the EU15 average is 83%) and fuel consumption associated to private vehicles accounts for over half of such emissions. Against this background, there is an obvious need to promote alternative transport modes, increase the demand for public transport and restrict the circulation of private vehicles for passengers and freight.<sup>17</sup> It has to be recognised that the transport sector is not the only source of emission: environment-friendly growth policies need to cover other important sectors such as energy and agriculture, which will not be dealt with here. Portugal has been proactive in this respect, in particular through ambitious renewable energy policies and important measures aimed at promoting energy efficiency (IEA, 2009), as well as through the reform of the registration tax (ISV) in 2007 to differentiate vehicles according to CO<sub>2</sub> emissions (see Chapter 2).

### **Developing inter-modality in a European perspective: the role of the rail and sea sectors**

The need to reduce the reliance on road transportation has been acknowledged by the authorities, who have developed an ambitious integrated approach in railway and port platforms. One of the main aims has been that of enhancing the connections with Spain through both high-speed and conventional railway developments along with intermodal platform development and a connection between the Portuguese sea ports and the Spanish borders. This strategy aims at reducing the costs associated with Portugal's geographical location by increasing the connections with the rest of the EU and also by promoting Portugal's sea ports as alternative logistic hubs for main inland Spanish cities. Much emphasis is put on the articulation and integration between conventional and high-speed networks, ports and logistic systems, as well as logistic interoperability, so as to promote

railway as a privileged means of transportation, both at the national and at the international level, for both freight and passengers transport. This strategy is appropriate to boost Portugal's productivity and competitiveness and the government should be able to develop it in the medium term. However, current budgetary pressures imply that public investment has to be selective.

Public-private partnerships are being launched for the high-speed railways projects infrastructure. More precisely, the design, building, financing, and maintenance of the infrastructure and signalling and telecommunications systems will be run through different PPPs. Currently, two tenders have been launched for the infrastructure PPP regarding the Lisbon-Madrid axis. Portugal has accumulated considerable experience in using PPPs, and PPP policy settings generally look favourable (Sutherland *et al.*, 2009). Indeed, the selected business model for high speed railway infrastructure seems relatively well designed to ensure that appropriate investment incentives are in place. The authorities have relied on external cost-benefit analysis (CBA) for assessing the economic impact of the construction and operation of the high speed network. But the results of the CBA point to very different rates of return across the different projects, with some of them exhibiting relatively low expected return. The government has recently announced that it will focus on the Lisbon-Madrid axis and consider the remaining projects once the public finances have reached a sustainable position.<sup>18</sup> The authorities should take the occasion of the current postponement of the infrastructure investments to carefully and transparently question the economic relevance of each of the high-speed railway axes before any further decision is taken.

Portugal should account for the long-term fiscal implications of the high-speed railway PPPs in government accounts. Given the widespread use of PPPs and concessions in Portugal, the fiscal implications of pluriannual contractual spending commitments should be fully transparent. In the high-speed railway system, there is a contractual agreement under which the government is committed to pay the concessionaire during the concession period. The private partner is rewarded based on the availability and state of the infrastructure. The contract also stipulates that 2% of the private partner's revenues are related to traffic levels. This follows a recommendation from the Portuguese Court of Auditors against transferring demand risk to private sector. Even when part of the demand risks are transferred to the private sector, the government still entails a significant risk as the provider of last resort, due to its interest in guaranteeing service provision. Given the threat of service interruption, the government can be forced to make unanticipated transfers to the operators. This would arise if PPPs projects relied on overly optimistic demand assumptions. Historically, unrealistic demand forecasts have been at the origin of government bailouts of private contractors, for instance in the UK rail sector (Araujo and Sutherland, 2010). Portugal's own experience suggests that poor PPP performance can be related to demand risks. In the case of the Fertagus suburban rail passenger service, the initial contract formally transferred demand risk to the concessionaire, but established that the government would assume the debt if traffic remained below the lower traffic-band level for several years. This event materialised, and contract renegotiation took place, with the government being in a relatively weak position (Monteiro, 2005). Against this background, Portugal should consider accounting for demand risk among contingent liabilities in government accounts, such as done in a number of OECD countries.<sup>19</sup>

A correct assessment of the implications would discourage using PPPs in shifting spending off government's balance sheet. This is important, as the treatment of PPPs does not always reveal the extent to which PPPs are being used and the associated potential



burden to future generations. For example, Eurostat classifies the assets of PPP projects based on 3 types of risk: construction, availability and demand risk. The government bears most of the construction risk if payments to the private partner are not linked to the state of the asset; the government bears most of the availability risk if payments are independent of service delivery; if the government makes payments to the private sector independently from the demand level, the government bears most of the demand risk. According to this rule, the assets that result from the PPP are classified as government assets if the public sector retains most of the risk. This will result in the high speed train investments being classified as private as the contractor bears construction and availability risk (Corbacho and Schwartz, 2008). The government bears other risks, even if the PPP is treated as a private investment. Moreover, it does not encourage efficient risk sharing, and can create moral hazard, as governments, faced with tight public budgets, will be tempted to choose an allocation that passes the Eurostat test of classifying a PPP as private.

The final model for the railway operation will be defined after 2010. The government is considering two possible scenarios. In one case, the state would purchase the rolling stock directly and lease it back to the operator(s), while in the other scenario, the operator(s) would be responsible for supplying its own rolling stock. An unbundled model would raise some well known concerns associated with market structure in the railroad industry. Contrary to other network industries such as gas and electricity, the problems created by vertical separation in railways can be severe. In particular, the network operator – not benefiting from higher revenue from train operators – has little incentive to improve its services. One way to ensure that the network operator maintains infrastructure quality is to allow a greater say to users on investment. Portugal should ensure that regulatory tools are in place in the PPP contracts to allow railway operating firms to monitor investment and maintenance of the railway network. The authorities should not wait until the final model for train operation is developed to establish those clauses because the network operator needs to fully internalize the associated costs throughout the contract period.

The PPP business model does not fully address to so-called “hold up potential”, according to which the concessionaire can under-invest when the concession is approaching renewal. The current high-speed railway model contain rules aimed at guaranteeing the availability and good condition of the infrastructure, with payments to the private partner dependent on infrastructure availability. At the end of the contract, although the assets have a predefined residual life, they revert to the government. To ensure that the contractor keeps investing, the contract should also contain rules to guide the definition of the asset residual value and the contractor should be compensated fully for the residual value of the assets. Another approach to mitigate this problem is to require reinvestment of profits, as is done in some OECD countries such as Belgium and Mexico (Sutherland *et al.*, 2009).

Portuguese experience suggests that regulatory risk can affect PPPs (Monteiro, 2005). Most PPPs experienced cost overruns and delays, first because of changing environmental regulations and second because projects were tendered without prior environmental licensing. Changes in environmental regulation are difficult to avoid altogether, and it is clearly the public sector that has to bear their consequences. The current PPP law does not allow for a tender to be launched before all environmental licenses have been obtained. Portugal should consider allowing environmental impact studies to be carried out and initial licenses obtained before PPPs are tendered so that bidders know all the environmental constraints and the mitigating measures they should include in their proposals.

Since 2007, the government has been promoting competition in railway transport operation, by granting access to new operators in the freight market. This is a welcome initiative to improve efficiency, by putting pressure on the national operator. The railway freight network is now open to any company in Portugal that meets the financial and technical requirements necessary to be issued a license by the Regulator. This process requires careful design of a transparent price setting mechanism: there is no international consensus of an optimal access fee pricing in this respect. The central challenge is to ensure that it encourages efficient use of scarce network capacity while at the same time preserving incentives to maintain quality and expand capacity when appropriate. The government should ensure, though, that access prices are set in a clear and transparent way; moreover, total costs of the track operator could be benchmarked internationally to ensure that the subsidy payment is not too high, in case the access fee is set below full recovery cost. The government has also announced the partial privatisation of freight services in the context of the 2010-13 privatisation process. Going further in the gradual liberalisation of the railways, Portugal is now ready to consider establishing free entry (upon access fees) in the passenger transport activities, which would help to boost productive efficiency along with consumer well-being.

Portugal has an ambitious approach to develop port platforms along with interconnections between ports and railways, in the logic of interoperability. Important steps are also being taken to dematerialize and streamline procedures, such as the creation of the “ports single window” which is expected to evolve into an overall “logistic single window”. The government has launched “Portugal Logístico” in 2006, an important plan to develop and restructure the Portuguese ports logistic system. The plan establishes a National Logistic Platform Network (RNPL) comprising 12 platforms and complemented by two air cargo centres in Lisbon and Oporto. The 12 logistic platforms are grouped in 4 separate categories: national urban platforms, port platforms, trans-border platforms, and regional platforms. The plan is based essentially on partnerships with the private sector. The projects are sometimes very large, and, more importantly, they are numerous. While some projects are being concluded, others are under way or in design.

Project selection should be based on transparent CBA. There are signs that some of the planned investments might not be profitable. This might be inferred *ex post* from the fact that development of some platforms is not attracting private investors.<sup>20</sup> This is the case of the Maia/Trofa logistic platform, where there was a single bidder that finally withdrew. This is also the case of Area B of Sines logistic platform, where the Port Administration has not been able yet to find private investors and promoters wishing to share the risk of the project. Project selection should also be based on a consistent assessment of the country’s overall transportation networks architecture. It might be appropriate to choose a limited number of clearly profitable projects. In the case of port development, the authorities could consider rationalising the projects in case where two planned ports are very close to each other, such as Aveiro and Porto. Without clear economic benefits of having the two ports, consideration could be given to integrate them in order to achieve economies of scale. It is also essential to monitor the effectiveness of these initiatives by measuring associated changes in cargo and logistic costs.

As well as improving physical infrastructure and processes, the authorities should encourage greater competition in the ports sector. It is important to actually implement the new Port Law after parliamentary approval. The government has reformed the Portuguese Institute for Ports and Maritime Transport (IPTM), which provides common

technical regulations and guidelines as well as economic regulation of ports. During a transitory period, it is in charge of the management of some secondary ports. Port management and pricing at major ports are now conducted independently by each port administration. In the present framework, the IPTM has a dual role as policy adviser to the government and sector regulator. It is important that future regulation is focused on promoting internal competition between the Portuguese ports to increase port efficiency, including the provision of transparent information on port charging across ports to promote yardstick competition. Promoting internal competition is complementary to the increased integration of the port and railway network that is expected to make it easier for customers to choose between different ports.

### **Modernising the air sector**

Efficient airline and airport services for passengers and cargo are important for trade, in both goods and services, particularly so for tourism. There has been growing recognition of airport infrastructure bottlenecks in Portugal, in the face of rising demand; in particular, the main airport infrastructure bottleneck is in Lisbon, where rapid growth in passenger demand is absorbing available capacity. Progress has been made in upgrading the current airport, Portela, and opening a new terminal. The Portuguese government has launched an ambitious programme to build a new airport in Lisbon, away from the centre of the city, in the location of Alcochete, currently a military shooting range at 40 kilometres east of the city. The underlying strategy is that of promoting Lisbon as a European hub for intercontinental flights, notably to Brazil and Western Africa. The strategic objective behind the new airport construction is clear and justified.

Due to budgetary pressures, the government announced in May 2010 that the airport construction will be postponed. While this is understandable given fiscal pressure, the authorities should resume the new airport project when the fiscal position has improved, due to its strategic relevance as a tool to increase productivity and competitiveness. The Portela airport will close with the beginning of the operation of the new airport, which was, prior to the latest postponement, expected in 2017. The planning process associated with the development of the new Lisbon airport is supported by a Reference Master Plan, based on aviation activity forecasts until 2050. There is yet no available CBA for assessing the economic return of the Alcochete project, although the authorities expect high internal rates of return, in the area of 10%.<sup>21</sup> Decisions should be made more transparent, for instance by relying on external CBA.

There has been no transparent assessment of the long-term fiscal implications of the airport investment. Consideration should be given to consider the long-term fiscal implications of the new airport in government accounts, because the State remains the provider of last resort, given its interest in guaranteeing service provision. In principle, demand risk under the concession is transferred to the private sector, but in practice the government still retains a significant risk as the provider of last resort. This situation would occur if the aviation activity forecasts of the Portela Airport Master Plan proved to be overly optimistic. Yet, one concern with the demand forecast is that it should not underestimate the competitive advantage of the Madrid airport as a hub for intercontinental flights to non-Brazil Latin America. Lisbon would hardly be able to compete with Madrid in this respect because of lock-in effects associated with Madrid's first mover advantage. Against this background, Portugal should ensure that demand forecasts are on the cautious side.

Despite Portugal's experience in introducing private provisions through concessions and PPPs, the current design of the airport project investment raises some regulatory issues. The proposed financing arrangements for constructing the new airport would create a private monopoly in Lisbon and in all other Portuguese cities where Aeroportos de Portugal (ANA) operates airports as well, which would in turn have to be regulated to prevent monopoly pricing. Portugal should ensure effective regulation is implemented to monitor the new monopoly in the airport sector. Increasing competition in airline services should also be considered. The national airline, Transporte Aéreos Portugueses (TAP), has a virtual monopoly on domestic flights in mainland Portugal.<sup>22</sup> The government recently announced (update of the Stability and Growth Programme for 2010-13) its intention to unlock TAP's capital to a strategic partner in parallel with the ANA privatisation process, in the context of the 2010-13 privatisation process. Details are not known yet although it is clear that the privatisation will be partial, as in the case of ANA. The government still entails golden shares in ANA and TAP, which it can exercise in merger and acquisitions by another company. Portugal should take the occasion of the air sector privatisations to consider giving up the state special voting rights in ANA and TAP. Given the potential substantial gains associated with tourism development in Portugal, lowering barriers to competition in the air sector would be particularly effective in promoting growth.

### ***Addressing public transport bottlenecks in the context of climate change***

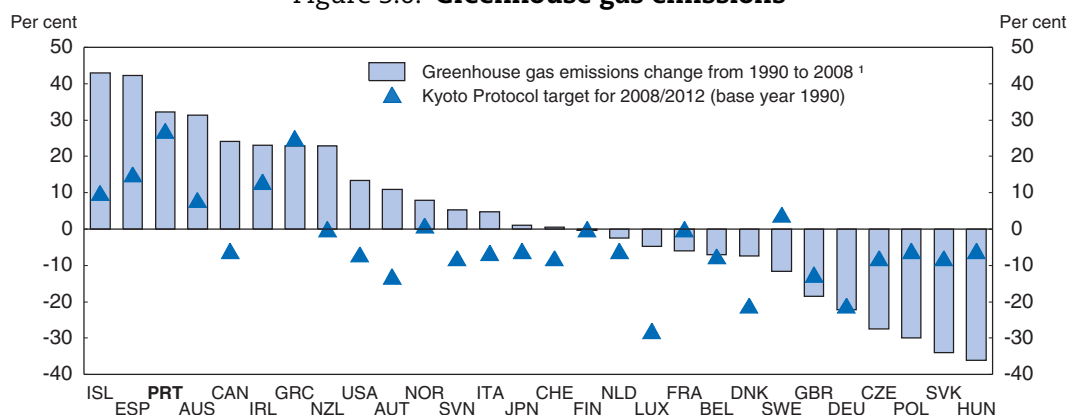
As part of the initiatives to enhance public transport infrastructure and reduce transport-related emissions, many projects have been launched with the explicit aim to increase the availability, the quality and finally the demand for public transport in metropolitan areas. In principle this is a welcome initiative not only from a broad environmental perspective, but also, in the short run, from a pure economic perspective, given the recognition of substantial congestion costs in Portuguese metropolitan areas. The 2010 Eurotest inspection of local public transport systems ranks Lisbon at the 18th position out of 23 capitals, which can be mainly attributed to the length of travel time.<sup>23</sup> Portuguese initiatives to enhance the effectiveness of public transport in cities have been developed in the broader context of the National Programme for Climate Change (PNAC 2006), which formulated specific measures, responsible authorities, and associated numeric targets for 2010. Notable projects include the expansion of the Lisbon Metro, the construction of Metro Sul do Tejo, and the construction of the Oporto Metro. PNAC 2006 also includes the creation of the metropolitan transport authorities of Lisbon and Oporto, whose purpose is to plan and coordinate the provision of collective transportation. Associated numerical targets include the transfer of 5% passengers per km in the Lisbon and Oporto Metropolitan Areas from individual transport to collective transport.

The Portuguese transport strategy sets ambitious targets but currently most of the projects are being delayed, while others are delivering disappointing outcomes. While the PNAC transport sector agenda provides transparent targets for emission reductions and inter modal shift associated with each project, it does not provide any cost – based economic analysis of the planned investments. Some implementation issues are associated with the multiplicity of responsible authorities and bodies involved in the overall strategy (municipalities, public transport operators, metropolitan authorities). A contingency plan has been drafted by the Ministry of Public Works, Transport and Communications in August 2009, which identifies a set of new measures capable of reducing emissions in the transport sector. This contingency plan is not publicly available

and is still being discussed. It has to be approved by the Portuguese Climate Change Commission and integrated with other sectors' contingency plans. The authorities should take this occasion to rationalise the overall strategy, including redefining the devolution of missions and responsibilities across the relevant actors, and enhancing the associated implementation procedures. Project selection should be based in accordance with emissions reductions engagement but also with a transparent CBA of the individual investments. The authorities should encourage private provision and ensure appropriate incentive-based regulation is in place to monitor operating firms. In this context, the fiscal consequences of the selected investments should be clearly identified.

Addressing transport infrastructure bottlenecks should be part of an integrated approach to climate change and environmental policy. The Kyoto Protocol emission targets stipulate an increase of Portuguese CO<sub>2</sub> emissions in 2008-12 by 27% relative to 1990 benchmark (Figure 3.6). By 2008, emissions were almost one third higher than the 2012 target. Policy to date has focused mostly on supply-side measures, such as the promotion of investments in renewable sources, energy savings, and clean technologies. The significant growth in renewable energy should play a large role in meeting the country's obligations set out in the EU Burden-Sharing Agreement under the Kyoto protocol. While a clear path towards compliance has been laid out, the transport-related component of the CO<sub>2</sub> emissions reductions is in doubt. As outlined above, many of the infrastructural projects supposed to contribute to the overall CO<sub>2</sub> emission reductions are behind schedule and thus delay the delivery of expected savings, at least within the time frame set out in the PNAC. Cost-effective transport policy tools to reduce CO<sub>2</sub> emissions should rely more on price-based instruments: the authorities have taken steps in this direction, through developments in CO<sub>2</sub>-differentiated motor vehicle taxes, but more needs to be done, as discussed in-depth in Chapter 2.

Figure 3.6. **Greenhouse gas emissions**



1. Total CO<sub>2</sub> equivalent emissions without land use, land-use change and forestry.

Source: United Nations Framework Convention on Climate Change Database.

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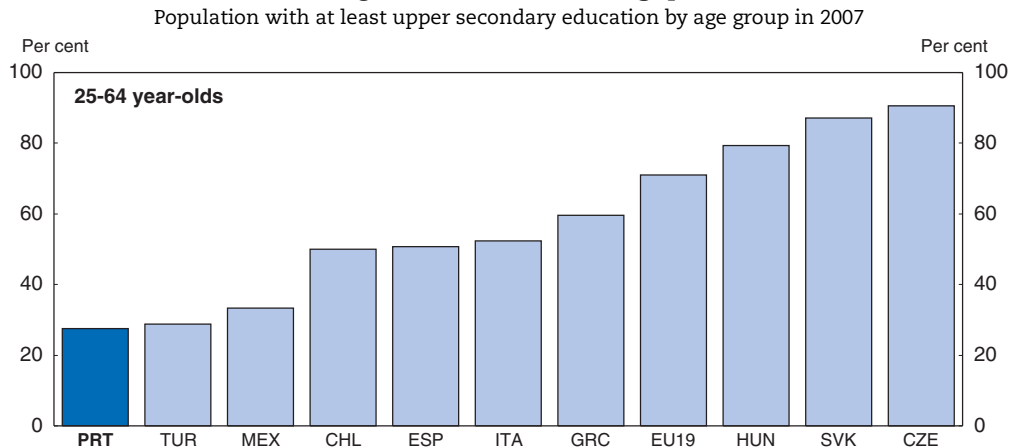
## Reaping the benefits of education is key to restore productivity growth

### ***The educational gap is the main source of the labour productivity gap***


The low education level of Portuguese workers is a major cause of their weak productivity relative to richer OECD countries, even though there has been a substantial improvement in educational attainment over generations (OECD, 2009a); still the

proportion of working-age population with upper-secondary education in Portugal is only slightly higher than 27%, as opposed to 71% in EU19 countries (Figure 3.7). The supply of skilled labour remains extremely scarce from a cross-country perspective: in 2007, less than 15% of the working-age population had attained tertiary education while the EU19 average was almost 30% (OECD, 2009a). Portugal's educational gap is higher relative to income when comparing with other countries (Figure 3.8). In this respect, Portugal is similar to middle income countries such as Mexico and Turkey while eastern European countries stand out as displaying very high levels of education for comparable income gaps. While this pattern is difficult to explain, it might be to some extent related to the level of income and wealth inequalities in Portugal, which is high and not far from that observed in middle income countries (OECD, 2008c). It is also part of the dictatorship's legacy, as education has long been confined to the *élites*. Upskilling Portugal's population requires making the educational system more inclusive by allowing all individuals to acquire basic skills. This is one of the defining dimensions of equity in education, at the core of Portugal's growth priorities.

Figure 3.7. **Educational gap**



Source: OECD, *Education at a Glance 2009: OECD Indicators*.

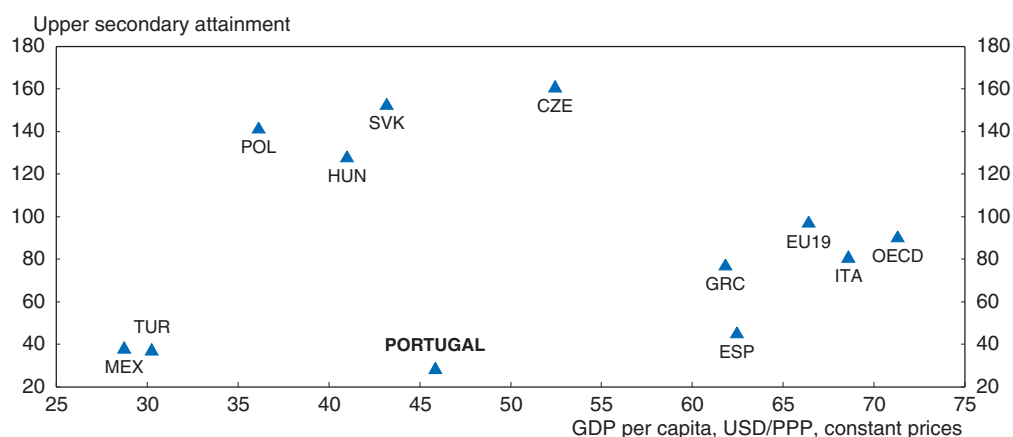
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One way to illustrate the contribution of education to the Portuguese labour productivity gap is to compute the changes in labour productivity induced by changes in the composition of labour, from the current situation to a simulated scenario in which the structure of the working-age population is the same as in a reference country, while group-specific employment rates and average working-time remain at their current levels. In other words, holding overall labour utilisation constant, workers' productivity is allowed to change in line with changes in the composition of the workforce in terms of educational levels. This exercise is done for OECD countries in Boulhol (2009), with the US taken as the reference country.<sup>24</sup>


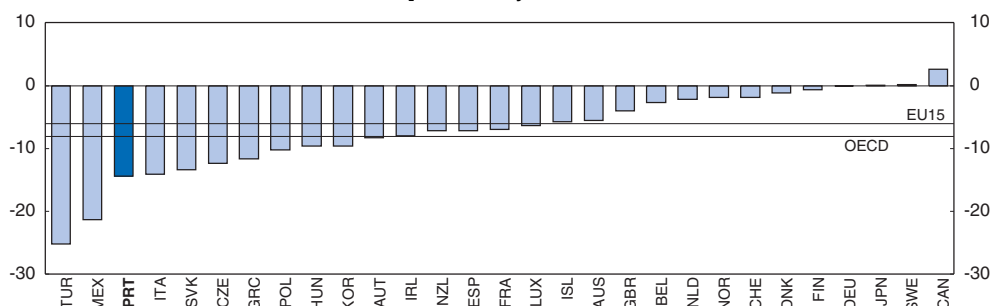
The implications for Portugal are substantial. Aligning working-age education shares for all groups on those of the US would increase average productivity levels dramatically. Based on this mechanical effect, differences in the education of the working-age population compared with the US penalise Portugal in terms of output per hour worked by 14.4%, while the effect for the EU15 is approximately 7% (Figure 3.9). In other words,

Figure 3.8. **Educational and income gaps, 2007**

United States = 100



Source: OECD, National Accounts and Education at a Glance 2009 Databases.

StatLink  <http://dx.doi.org/10.1787/888932331182>Figure 3.9. **Simulating the contribution of education to the Portuguese labour productivity gap**Mechanical effect of population structure differences vis-à-vis the United States on average hourly productivity, 2004<sup>1</sup>

1. In Portugal, for example, average hourly productivity is mechanically reduced by 14.4% compared with the situation where Portugal had the same population structure as the United States while keeping its group-specific employment rates. Data for EU15 and OECD (minus the United States) are weighted averages.

Source: OECD (2009), Boulhol, H., "The Effects of Population Structure on Employment and Productivity", *Economics Department Working Papers* No. 684.

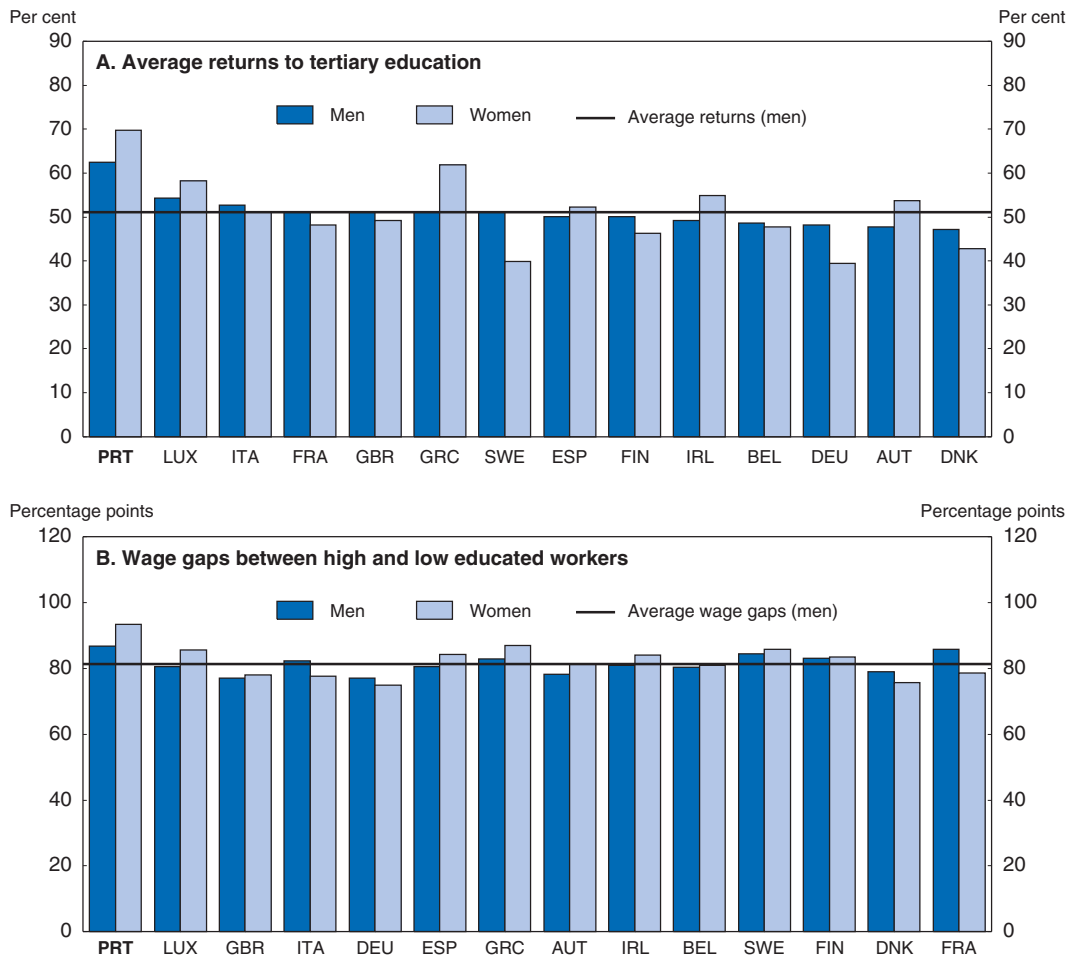
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according to this calculation, Portugal's hourly productivity would be 14.4% higher if its working-age population had the same level of education as the US. According to this simulation, education would explain approximately 25% of Portugal's GDP per capita gap vis-à-vis the United States.<sup>25</sup>

### Returns to education are high in a comparative perspective


Returns to education have been historically high in Portugal, particularly so after EU accession in 1986 (Hartog *et al.*, 2001; Martins and Pereira, 2002 and 2004; Budria and Celso, 2005). Skill-based technological change has been proposed as the chief explanation for a shift in the demand towards educated labour (Hartog *et al.*, 2001), and Portugal's high returns to education can therefore be understood as the outcome of an excess demand for skilled labour. New empirical results based on estimates from 2005 microeconomic household data confirm that returns to education are substantial in Portugal (Figure 3.10); they are the

Figure 3.10. Returns to education based on household data<sup>1, 2</sup>  
2005



1. Estimated returns from tertiary education based on microeconomic household data (European Union Statistics on Income and Living Conditions (EU-SILC), 2005 data). Dependent variable is (log of) hourly gross wage for employees. The sample is restricted to individuals who declare having worked more than 15 hours per week and earning more than 1 euro per hour. Education is defined as the highest International Standard Classification of Education (ISCED) level attained by the individual. For the purpose of estimation, the five ISCED categories are aggregated into three modalities: i) low education (pre-primary, primary, lower secondary, i.e. ISCED 0-2); ii) medium education (upper-secondary and post-secondary i.e. ISCED 3, 4); and iii) higher education (tertiary i.e. ISCED 5, 6). Control variables include age and age squared, experience and experience squared, degree of urbanisation of the living area, marital status, and migration background. Regressions for men are performed through ordinary least squares while regressions for women are performed through Heckman's sample selection bias correction procedure. The latter estimation uses a dummy on the presence of children in the household for identification purposes in the selection equation. Regressions are weighted using individual sampling weights. Standard errors are clustered at the household level.
2. Interpretation: Panel A. In Portugal, a man who has attained tertiary education has a 62% wage premium compared to a man who has attained upper-secondary education, controlling for individual characteristics. Panel B. Wage gaps between high and low educated workers can be computed as the difference between the estimated premium to tertiary education and the estimated penalty to less than lower secondary education, relative to upper-secondary education. In Portugal, wage gaps between high and low educated workers amount to 87 percentage points.

Source: OECD, author's calculations based on EU-SILC data.

StatLink  <http://dx.doi.org/10.1787/888932331220>

highest across European OECD countries covered by the analysis. According to the estimates, a man who has attained tertiary education has 62% wage premium compared to a man who has attained upper-secondary education, controlling for individual characteristics.<sup>26</sup>



Estimated *premia* to tertiary education are generally higher for women than for men, controlling for self-selection into paid employment. In Portugal, they amount to 70%.

The importance of education for individual wage outcomes in Portugal is further confirmed by the finding that the dispersion in wages is very well explained by the dispersion in educational levels within the employed population: in this respect too, the relationship between education and wages is the strongest among European OECD countries, both for men and for women.<sup>27</sup> Finally, wage differences between high and low educated workers are the highest among European OECD countries (Figure 3.10).<sup>28</sup>

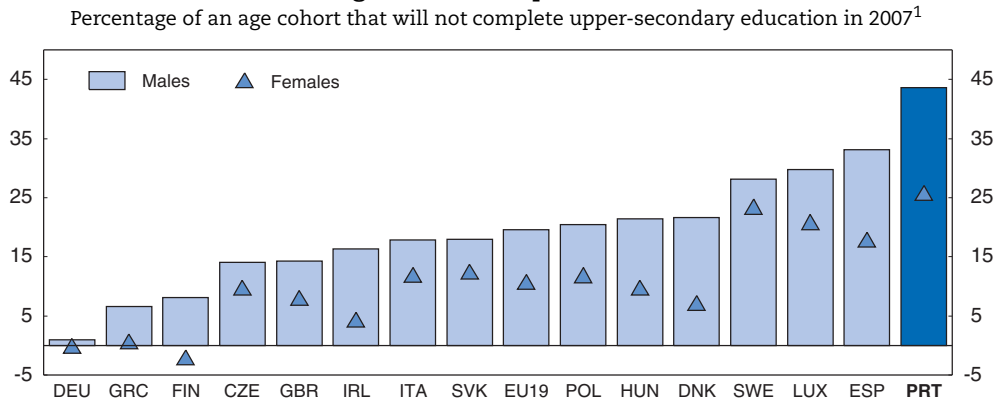
### **Raising the educational level of the population by achieving higher equity in education**

Portugal's educational gap is compounded by a lack of equity with respect to educational opportunities. It will not be possible to upskill the labour force without addressing the problem of educational equity upfront. The authorities have been developing a number of reforms that can be effective in achieving higher equity in education, but more needs to be done to openly address educational inequities in Portugal. Equity in education has two dimensions. The first is *fairness*, which implies ensuring that personal and social circumstances – for example gender, socio-economic status or ethnic origin – should not be an obstacle to achieving educational potential. The second is *inclusion*, which implies ensuring a basic minimum standard of education for all – for example that everyone should be literate and numerate. The two dimensions are closely intertwined: tackling school failure helps to overcome the effects of social deprivation which often cause school failure.

The benefits from education are large, and particularly so in Portugal. Education affects economic outcomes indirectly because it is associated with better health, successful parental and civic participation. The long-term social and financial costs of educational failure are high, as those without the skills to participate socially and economically generate higher costs for health, income support, child welfare and security. Finally, achieving higher inclusion in education can help address the dual and segmented nature of the Portuguese economy. A related structural feature of Portugal's economy and labour market is that of informality, which can at least in part be fought against by giving individuals better educational opportunities.


Many children fail to acquire basic skills at school in Portugal; 24.2% of 15 years-old students perform below the minimum skill level of 400 PISA points, whereas the OECD average is 18% (OECD, 2010a). Responding to the concern on the literacy levels of the Portuguese population in general, especially that of young people, the government has launched the *National Reading Plan* in 2006, aiming at raising literacy levels of the Portuguese population, especially targeted at children attending pre-school and basic education; similarly, it has launched the *Action Plan for Mathematics*, to support projects in schools to improve mathematics learning for pupils in the 1st, 2nd and 3rd cycles of basic education. The *National Reading Plan* is technically based on a set of studies and evaluation tools to verify its achievement. It is important to monitor the effectiveness of these programmes as they are implemented at different stages of the school system.

Retention at the secondary level is one of the major factors behind the low proportion of upper-secondary and tertiary education graduates in the Portuguese population. Portugal displays the highest dropout rates from secondary school among European OECD countries (Figure 3.11). There is also a striking difference between male and females, as in

Figure 3.11. **Dropout rates**

1. Data are calculated using the 2007 net graduation rates.

Source: OECD, *Education at a Glance 2009: OECD Indicators*.

StatLink  <http://dx.doi.org/10.1787/888932331239>

other countries; male are almost twice as likely to dropout as females. It is difficult to identify the reasons of such high dropout rates; to some extent, the phenomenon reflects the weak cultural value associated with education until recent times in the Portuguese society. There is evidence that this perception is changing, partly due the government's commitment to emphasize the importance of education. Reducing dropout rates at the secondary level is indeed on top of the policy agenda. Recent policies are showing encouraging results. According to data from the Ministry of Education, the academic year 2008-09 exhibits a downward trend of school failure and early leaving, and there are signs of a consolidated and sustained increase in the number of pupils completing mandatory education and entering upper-secondary school. Increasing enrolment at the tertiary level is also an important objective; however, ensuring higher completion rates at the secondary level will, by itself, allow greater enrolment at the tertiary level.

The impact of family background on the probability to dropout is also strongest in Portugal than elsewhere: according to 2005 household data, 98.9% of men aged between 25 and 34 years old who dropout before the end of upper-secondary school has a low-educated father, more than 10 percentage points higher than it is on average across European OECD countries (OECD calculations based on the 2005 EU-SILC Database). Not surprisingly, the impact of family socio-economic background on student performance is also among the highest among OECD countries. Empirical evidence further suggests dramatic learning difficulties concentrated in socio-economically disadvantaged schools.<sup>29</sup> Targeted interventions for disadvantaged schools and for disadvantaged individuals can therefore have positive effects.

Parental background also influences adults' post-secondary educational opportunities. Tertiary education is not only relatively rare but also unequally distributed in Portugal, in particular for women. Individuals coming from educated families make up the most of university graduates. Based on household data for 2005, Causa *et al.* (2009) estimate that a woman whose father achieved less than upper-secondary education faces a probability to achieve tertiary education that is 52 percentage points below that of a woman whose father achieved tertiary education. Portugal has recently introduced an innovative system of student loans with mutual guarantee underwritten by the State, which complements the system of public grants. This is an appropriate initiative that is

already improving educational opportunities. However, because education is a cumulative process and because early interventions have the highest payoff, focusing on basic and secondary education will be more effective to raise tertiary enrolment levels and to diversify students' social background.

### **Education policies: achieving stronger performance and inclusion**

There are enormous economic gains to be achieved in Portugal by improving educational performance and inclusion. Recent simulations based on PISA data suggest that reforms that brought all Portuguese students to a level of minimal proficiency for the OECD – which would achieve higher performance and inclusion, would imply an average annual growth rate that is 0.9% higher (see Box 3.3).

#### **Box 3.3. Achieving stronger education performance and inclusion: quantifying the gains in Portugal**

The historical record on the relationship between cognitive skills and economic growth provides a means of directly evaluating the benefits of educational reform programmes. OECD (2010a) uses several alternative benchmarks to provide country-specific information about the economic impact of a change. A simulation model is employed, based on the idea that moving from one quality level to another of the workforce depends on the shares of workers with different skills. As such, the impact of skills on GDP at any point in time will be proportional to the average skill levels of workers in the economy. The expected work life is assumed to be 40 years, which implies that each new cohort of workers is 2.5% of the workforce. Thus, even after an educational reform is fully implemented, it takes 40 years until the full labour force is at the new skill level. In order to consider the impacts of improvement on OECD countries, the simulations rely on the estimates of growth relationships derived from the 23 OECD countries with complete data. These estimates suggest that a 50-point higher average PISA score (i.e., one-half standard deviation higher) would be associated with 0.87% higher annual growth. This estimate clearly includes some uncertainty, a factor that is also included in the simulations. The simulation does not adopt any specific reform package but instead focuses just on the ultimate change in achievement. Reforms are assumed to take 20 years to complete, and the path of increased achievement during the reform period is taken as linear. For example, an average improvement of 25 points on PISA is assumed to reflect a gain of 1.25 points per year. This might be realistic, for example, when the reform relies upon a process of upgrading the skills of teachers – either by training for existing teachers or by changing the workforce through replacement of existing teachers. This linear path dictates the quality of new cohorts of workers at each point in time. To gauge the magnitude of such changes, Poland, the country that displayed the largest improvement in PISA, improved its performance in reading by 29 points between 2000 and 2006.

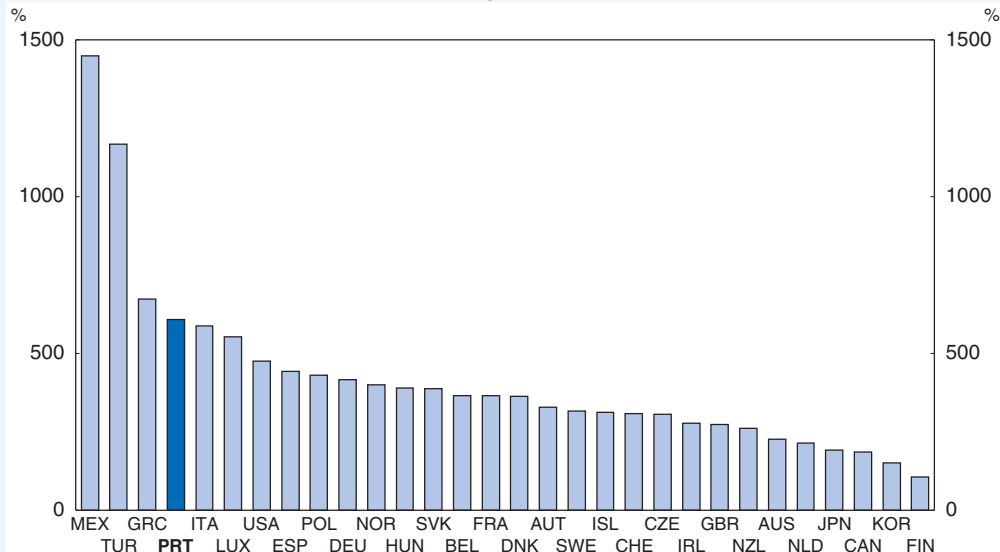
The simplest way to see the impact of any improvement in cognitive skills is to trace out the increased GDP per capita that would be expected at any point in the future (Figure 3.12). For example, it is possible to say what percentage increase in GDP per capita would be expected in 2050, given a specific change in skills started today. The benchmark considers all economic returns that arise during the lifetime of a child that is born at the beginning of the reform in 2010. The calculations take a time horizon until 2090, considering all future returns that accrue until then, but neglecting any returns that accrue after 2090. Finally, because economic benefits accrue at varying times into the future, the

**Box 3.3. Achieving stronger education performance and inclusion: quantifying the gains in Portugal (cont.)**

entire stream is converted into a present discounted value. A standard value of the social discount rate used in long-term projections on the sustainability of pension systems and public finance is 3%.

**Figure 3.12. Present value of bringing all to a level of minimum proficiency for the OECD<sup>1</sup>**

As a percentage of current GDP



1. Discounted value of future increases in GDP until 2090 due to a reform that ensures that all students perform at a minimum of 400 points on the PISA scale.

Source: OECD (2010), "The High Cost of Low Educational Performance: The Long-Run Economic Impact of Improving PISA Outcomes".

StatLink  <http://dx.doi.org/10.1787/888932331258>

OECD (2010a) presents several simulation scenarios, all of which have dramatic implications for Portugal. Given the country's context, low performance and low equity, the goal of bringing Portugal to a level of minimum proficiency for the OECD (a PISA score of 400) probably represents the most relevant scenario for assessing the potential gains from human capital reform. Against this background, Figure 3.12 presents the expected benefits of bringing all students to minimum of 400 points in PISA in OECD countries. As can be seen from the figure above, Portugal ranks among the countries that would experience the strongest GDP benefit from this move, more than 6 times its current GDP.

The shortage of human capital calls for action not only to raise the education level of the population, but also to review the type of education and its quality, as identified in the last two OECD *Economic Surveys of Portugal* and also various editions of *Going for Growth* (OECD, 2010b). The government has implemented a number of major reforms across all levels of the education system, including steps to promote vocational education and training (VET) and integrate unskilled adults in formal learning. Overall Portugal's reforms are ambitious and well designed. It is important that the authorities consolidate the reform process by carefully

monitoring implementation and effectiveness. A number of the enacted reforms do tackle the problem of equity. However, more needs to be done to address the issue upfront, through specific policies in the education area, but also through the promotion of educational equity within the civil society, that is, by raising public awareness of the equity challenges.

### ***Vocational education: the diversification of upper-secondary education and adult education***

The focus on vocational education and training is a major development in Portugal in the current context, because it is key to both preventing school failure and dropout, and also effective to upgrade adults' qualifications. Major reforms under this strategy are headed under the *Novas Oportunidades* programme, launched in 2005, and covering two distinct axes: one that structures vocational education for young people at the upper-secondary level, and the other targeting adults who did not conclude secondary education. The government must also be praised because the system is sufficiently open and flexible to allow students to transfer between general and vocational courses: indeed, a more flexible curriculum may help make VET more attractive and reduce dropout rates (DeLuca et al., 2005; Teese et al., 2005).

VET programmes are being implemented with encouraging results. There has been an increase of 24 percentage points in the enrolment of young people in vocational education and training courses at the upper-secondary level, including technological specialisation courses, professional courses, apprenticeship courses, and courses promoted by tourism schools. Fifty per cent of students in upper-secondary education are estimated to be currently enrolled in VET. The large expansion of the network of VET providers has led to a dramatic diversification in the supply of vocational education and training courses at the upper-secondary level in Portugal. There are currently more than 120 different VET courses in the system. At this stage of development, the problem is therefore lack of information for prospective students and parents. Career guidance services are fragmented and weakly underpinned by information on labour market opportunities. As a first step, the authorities could support the creation of a comprehensive website with career guidance information.

More needs to be done also to raise the social standing of VET, which has been historically low. Involving firms in the process is a way forward, and this is starting to occur in some schools that have created local networks with employers and firms. Stronger links with employers would help to ensure that the skills acquired through VET correspond to labour market requirements. Ireland has developed a number of relevant tools in this respect, which could serve as examples. It has launched a schools-business partnership to support educational inclusion, which has apparently reduced dropout (OECD, 2007). It has developed some innovative ways of engaging employers in a bottom-up approach to provision, such as Skillnets – an initiative widely supported by employers (OECD, 2010c). Going further, Portugal should strengthen the professional content of VET. Supply diversification has to evolve towards a better matching between acquired competencies and labour market needs, which calls for the development of professionally oriented courses. Over the medium term, Portugal should consider expanding the supply of apprenticeship programmes and ensure that guidance is in place to enrol students and firms in the process. Switzerland provides an effective model of apprenticeship, because the system is strongly employer and market driven, flexible, and subject to regular evaluation (OECD, 2009b).

The adult axis of the *Novas Oportunidades* programme promotes integration of low skilled adults into formal learning. The programme comprises the recognition of qualifications acquired throughout life and the chance for low skilled adults to undergo further education and training. The challenge is to enable under-qualified adults to improve their employability and encourage their returns to education and training processes. The initiative has attracted strong demand from adults both for the recognition of competencies and for lifelong learning. Since 2007, there have been more than one million candidates enrolled in the adult axis of the new opportunities centres, 63% of whom are employed and 33% unemployed. Portugal's experience is quite unique in this respect. It is crucial at this stage of implementation that the quality of services provision matches the increasing number of participants in the programme and that training actually meets labour market demand. This is all the more relevant in the current context of rising unemployment. Labour market links should be given more emphasis through partnerships between training centres, social partners, local governments and companies. In this context, enhancing the connection between the information system of *Novas Oportunidades* and the employment centres is a relevant step to improve the effectiveness of the system in smoothing labour market matching between employers and re-qualified unemployed. Education and training programmes for adult learners should be targeted at the needs of the labour market as well as their particular skills. It is important in this context to provide flexible learning arrangements, including part-time or distance learning, reducing the opportunity cost of studying by making it compatible with everyday adult life: against this background, Portugal should better target provision to meet specific adult needs and schedules. This a particular challenge for Portugal where typically the offer of training had traditionally not been directed at people already in employment.

The authorities should reinforce evaluation tools to monitor the effectiveness of the *Novas Oportunidades* programme. Historical estimates of the market returns to vocational education in Portugal cast some doubt on the market value of the skills acquired within the apprenticeship system and in the vocational training schools.<sup>30</sup> It is also important to evaluate whether adults succeed in upgrading the quality of their job after programme participation. This assessment is relevant to measure the effectiveness of the programme and evaluate if it responds to participants' expectations. Preliminary evaluation analysis initiated by the authorities provides encouraging results in this respect. There is currently an international experts' team developing an external evaluation study about the impact of the programme on adults' social and professional paths. The 4-year study began in 2008 and it is supposed to publish its preliminary results in 2011. This process is welcome: the authorities should put more emphasis on evaluation tools, including cost-benefit analysis, to measure the effectiveness of the *Novas Oportunidades* programme.

### ***The increase in the age of compulsory education***

In 2009, Portugal raised the age of compulsory education from 15 to 18 years old. Widening mandatory school comes as a corollary to all the work developed on the diversification of the educational supply that resulted in a dramatic increase of the VET. This policy has the advantage of providing a clear signal about the importance of education. Portugal is making important efforts to meet the needs and expectations of all target groups, and to expand the networks of VET providers. Financial support to low-income students has also been increased. The flexibility and diversity of the offer is expected to result in a diversification of the students' body.

While the reform might be very effective in reducing the statistics on dropouts, it will not by itself significantly change the underlying failure of the system to retain children in school. Portugal's education system must offer strong incentives for learning and ensure that these incentives are understood by all students, including those with the weakest achievement. Without clear demonstrable benefits, under-achievement will continue: legally raising compulsory education will not by itself translate into higher incentives for students and their families. It is important in this context that this process is accompanied by measures to inform parents and students about the benefits of education, which can be done through career guidance and mentorship programmes.

Portugal needs to address up front the implementation issues associated with raising the age of compulsory education. Financial resources are needed to cope with the increase in pupils attending education and training. Preliminary surveys have concluded that there will not be a significant overload of the system associated with this reform, mainly due to the trend decrease in the number of students as a result of demography, which will imply a stable student-teacher ratio. However, more consideration should be given to the need to increase physical resources, and in particular those that are associated to the provision of technical and vocational education (laboratories, specific equipment): indeed, the VET providers will probably absorb most of the increase in the student intake. The government has launched a technological plan for the educational system and a modernisation programme in secondary schools to improve facilities and building quality. Implementation of the programme should be monitored closely in order to ensure that it effectively achieves a comprehensive coverage of the relevant training providers.

The increase in the number of students raises the challenge of addressing increased diversity and heterogeneity in the student body. An associated issue relates to potential disciplinary problems arising if students are not motivated to stay at school. It is essential to provide training to school managers and teachers to improve their competencies to work in complex contexts, including through the help of multidisciplinary teams (psychologists, sociologists, and social workers). Raising compulsory schooling should not come at the cost of educational quality: the reform raises the challenge of keeping educational standards while enlarging the audience of compulsory education. Portugal should monitor closely the implementation and the impact of the reform, including on school performance, taking into account the socio-economic context in which schools operate.

### ***Teacher evaluation reform and school governance***

Over the last three years, important measures have been taken to strengthen teachers' skills and improve the quality of teaching. In particular, a contentious yet necessary system of teacher performance evaluation has been introduced first in 2007. Implementation has been challenging, reflecting natural resistance to change and an introduction of a new culture of evaluation, as well as practical difficulties associated with introducing a comprehensive model within a short time span. Difficulties experienced by the school management bodies relate to the definition of objectives and goals, the development within the school of tools and instruments to register evidence concerning the dimensions evaluated, and the lack of teaching staff trained to develop and implement the assessment process. Considering these implementation difficulties, the Ministry of Education re-opened the negotiation process with the unions, and adopted in early 2010 a revised version of the 2007 model. A concomitant OECD report by education experts has

provided a comprehensive review of teacher evaluation in Portugal, highlighting the strengths and the weaknesses of the original model (OECD, 2009c).

The teacher evaluation model provides a good basis for further development, because it is comprehensive, includes most aspects of teachers' performance, a wide range of sources of data, provides more than one evaluator and has a peer review element. One important loophole in the original model was that it did not explicitly consider the development of competencies to implement teacher evaluation. The Ministry of Education has recently announced that new specialised training will be provided to evaluators during 2010 with the aim of developing professional competences and responding to the training needs. It is important to implement such training systematically within schools.

Portugal should ensure appropriate articulation between school evaluation and teacher evaluation.<sup>31</sup> School evaluation should include the establishment of school internal mechanisms to assess the quality of teachers and teaching. In particular the external evaluation of a school, which in principle takes into consideration the teachers' evaluation procedures developed by the school, should provide recommendations for improvement, and hold the school director accountable if such procedures are deemed inadequate. Portugal should also introduce an external component to teacher evaluation and link the evaluation to national-level criteria standards and indicators, while accounting for the school context. There is evidence that this process is starting. The Scientific Council for Teacher Evaluation (CCAP) is defining national teacher performance standards. These will be used as references for teacher evaluation.

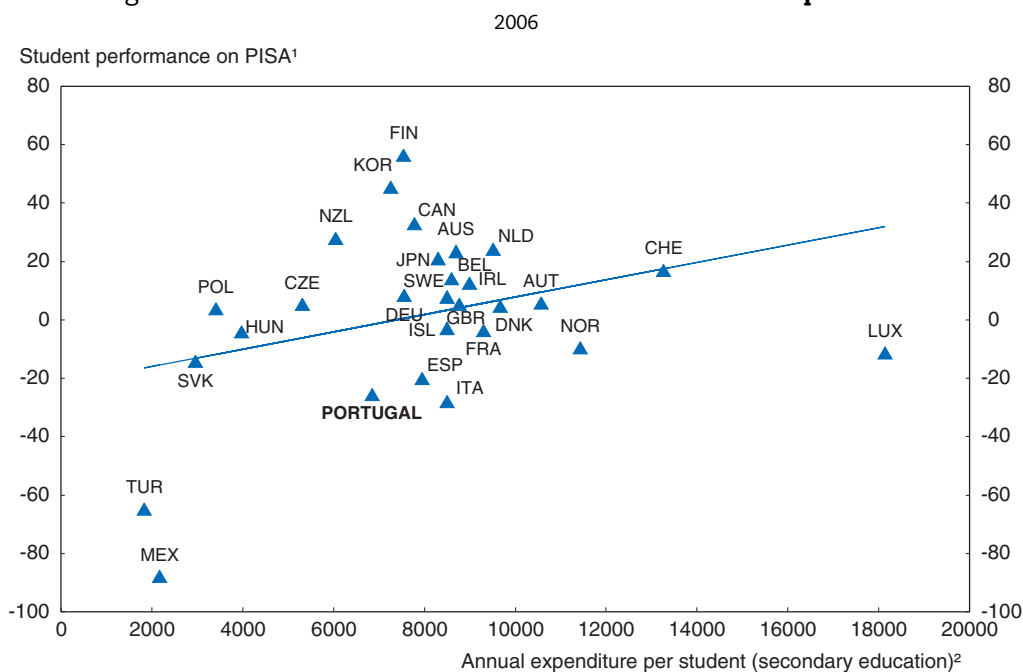
Educational outcomes seem disappointing given the scale of expenditures in Portugal (Figure 3.13). To improve the quality of education and the efficiency of educational expenditure, the authorities should further increase school autonomy and accountability. Investment in school autonomy has been rather slow, mostly due to the centralised tradition and resistance factors of a cultural nature. Currently, the development of autonomy is based on the possibility for schools to sign autonomy contracts on a voluntary basis, which are conceived as instruments for negotiation and involvement of local stakeholders. Under the contract, schools are being evaluated by external agents, as a precondition to be transferred a limited amount of responsibilities.

### ***School and out-of-school practices***

According to PISA 2003 data, school repetition in Portugal is among the highest in OECD countries: more than 15% of students repeat years in primary and lower secondary school, compared to less than 5% in more than half of OECD countries, including the best performing ones.<sup>32</sup> There is wide recognition in educational research that grade repetition is an ineffective intervention for low achievement while it poses risks for equity in terms of bias based on social background (OECD, 2007). Also, the costs of repetition are indirect but substantial: the full economic costs have been estimated up to USD 20 000 equivalents for each student who repeats.<sup>33</sup> The problem is that schools have very few incentives to take these large costs into account. In summary, year repetition is ineffective and costly: this has both efficiency and equity implications.

Portugal should reduce high rates of school-year repetition. This practice has been questioned in other countries that acknowledged the problem, such as France and Luxembourg. There are alternative ways of supporting those with learning difficulties in the classroom: one way is to provide extra teaching time for students who fall behind and adapt



Figure 3.13. **Educational outcomes and educational expenditure**

1. Student performance on PISA, relative to the OECD average score. Computed as the sum of the contributions of relative performance in mathematics, reading and science (these three skills are weighted equally in the total score).
2. Expenditure on educational institutions in equivalent USD converted using PPPs for GDP.

Source: OECD, *Education at a Glance 2009: OECD Indicators*.

StatLink  <http://dx.doi.org/10.1787/888932331277>

teaching to their needs. More generally, interventions in the classroom can be very effective to tackle underachievement: among approaches available, the Finish example, offering a sequence of intensifying interventions which draw back into the mainstream those who fall behind, is a successful approach. Portugal has started introducing classroom interventions along these lines. This strategy requires continuing supporting teaching professionals so that they develop their in-classroom techniques to help those who are falling behind.

The impact of family background on school achievement in Portugal is among the highest among OECD countries, as recalled above: this implies that home factors, including parental support for education, engagement with children's learning and cultural assets are, in Portugal more than in most OECD countries, associated with stronger school performance. Against this background, it is important to strengthen the links between school and home and help disadvantaged parents help their children to learn. One approach is that of providing additional time for children who need homework support on school premises, as done in Ireland, where a school completion programme to help youth at risk includes a strategy of before-school and after-school support delivered outside school.<sup>34</sup> Strengthening communication with parents is another complementary approach, especially when formal arrangements to link parents and school may not work for disadvantaged groups. The authorities have very recently approved a law aimed at involving more parents and local authorities in the process of enhancing schooling outcomes. It will be important to evaluate the effectiveness of this new process at the school level.

It is also important to address the educational problems of newly arrived migrants in Portugal, where specific educational programs targeted to them appear to be less developed

than in other OECD countries. Portugal should expand interventions targeted to immigrant groups, given the observed low educational attainment of some of them, in particular migrants from former Portuguese colonies in Africa, like Cape Verde (OECD, 2008d), and in so far as they are overrepresented among the socio-economic disadvantaged groups.

### **Resources and outcomes**

Portugal has recently introduced a number of measures aimed at targeting education spending to disadvantaged schools and pupils. One of the most important measures is the programme “Educational Territories of Priority Intervention” (TEIP), which was developed in 105 schools groups with high rates of failure, dropping out and absenteeism (Box 3.4). According to this programme, schools propose a pluriannual intervention program for improving results at different levels of education, setting their respective goals. The Educational Administration provides human and financial resources and evaluates the implementation of the proposed plan. The program includes socio-cultural mediators and other professionals with the objective of improving the integration of pupils and supporting head teachers in their relation with families. The approach taken by Portugal has been to grant more autonomy to TEIP schools whose results were positively evaluated, the idea being that schools be progressively able to develop their own projects and targets.

#### **Box 3.4. Directing resources to disadvantaged schools in Portugal**

##### **The Programme “Educational Territories of Priority Intervention”**

In 2006, the Portuguese Educational Administration re-launched “Educational Territories of Priority Intervention”, a programme targeted at disadvantaged schools. The aim of the programme is to provide targeted schools with effective means to improve the educational environment, promote inclusion, prevent dropout, and improve outcomes. It has been developed in the context of the progressive transfer of competencies to schools and local authorities in Portugal. To date it has been implemented in 105 schools groups with high rates of failure, dropping out and absenteeism.

Against a background of accrued autonomy, the schools are asked to propose a pluriannual intervention programme to improve their results, setting their respective goals, according to their economic, social and cultural specificities. The schools assume the responsibility to provide a diversified offer through alternative paths, education and training courses, recovery plans and other educational support.

The Educational Administration provides human and financial resources to implement school plans, and then evaluates the implementation of the proposed plan. The Ministry of Education allows for the priority placement of teachers in schools integrated in TEIP. Schools are also being reinforced in professional resources to allow the constitution of multidisciplinary teams (psychologist, mediators, social workers, etc.). Part of the resources targeted at TEIP schools comes from the European Social Fund.

The programme is currently being continued for most of the TEIP schools and extended to other schools. Based on observed implementation issues, it is being adjusted to improve its effectiveness in reducing dropouts and school failure.

Implementation of the programme has been challenging so far. Targeted schools have shown a lack of capacity and expertise to manage their extra resources. This is to some extent due to the fact that part of the extra funds comes from the European Social Fund

and targeted schools have experienced difficulties in dealing with the associated application procedures. Portugal should tackle the efficiency issue upfront; schools should be given the relevant resources to build financial expertise. The authorities should also consider introducing the possibility of hiring external experts on specific issues such as accounting and fund management. The costs involved by this approach would be much lower than the current efficiency losses incurred by the program.

It is important to expand mechanisms to properly evaluate the effectiveness of the TEIP programme to improve schools' outcomes. External evaluation mechanisms should be reinforced in every school to properly evaluate the effectiveness of the TEIP programme. Portugal could also consider designing a panel of students and schools that could be followed over time. Microeconomic data at the student level would allow for a scientific evaluation the programme. International experience can be useful to assess the relevance of the programme and to avoid replicating some well-known errors. For instance, the authorities must ensure that the extra resources are used to assist those most in need and avoid labelling certain as disadvantaged, as suggested by the unsuccessful French experience of the *Zones d'Éducation Prioritaires*. One way to avoid labelling issues is systematic evaluation of schools, so that schools easily obtain or lose their status.

Qualified teachers are an important resource for disadvantaged schools: there should be incentives for them to work in these schools. Currently the education system does not foresee any specific policy to attract experienced teachers to difficult schools: as a result of the centralised management of teacher allocation, the best classified teachers are avoiding sensitive areas. Consideration should be given to incentive-based pay for teachers. International experience suggests that this is not an easy task.<sup>35</sup> The teacher evaluation reform can be a relevant basis to address this important issue. To start with, Portuguese schools should be given more autonomy for hiring staff in the context of stronger accountability.

**Box 3.5. Summary of recommendations on productivity and competitiveness: setting the priorities for an appropriate growth strategy**

**Business environment**

- Expand industrial clusters, building on local stakeholders such as business associations and further develop co-operation between firms and the R&D sector. Regularly evaluate the performance of these programmes.
- Ease further licensing procedures, notably at the local level.
- Streamline the judicial process.

**Transport infrastructure**

- Policies to improve public infrastructure should be pursued. The authorities should resume the new airport construction as soon as the financial conditions permit. However, investments should rely on cautious and transparent cost benefit analysis (CBA).
- The fiscal implications of pluriannual contractual spending commitments under PPPs and concessions should be fully transparent.
- Increase efficiency and profitability of SOEs. Ensure effective implementation of the new performance monitoring regulation in railways and expand it to other sectors. Reduce the scope of the public enterprise sector further as soon as the financial market conditions improve.

**Box 3.5. Summary of recommendations on productivity and competitiveness: setting the priorities for an appropriate growth strategy (cont.)**

- Liberalise the passenger railway transport activity.
- Ensure effective regulation of the new monopoly in the airport sector. Increasing competition in airline services should also be considered.
- Rationalise the metropolitan public transport strategy to tackle CO<sub>2</sub> emissions and increase public transport by redefining the devolution of missions and responsibilities across the relevant actors and enhancing implementation at the local level.

**Education**

- Enhance career guidance mechanisms for prospective students in vocational educational training (VET).
- Strengthen the links between training centers and firms by engaging employers in a bottom-up approach to VET provision. Reinforce the professional content of the training programmes. Consider expanding the supply of apprenticeship.
- Reinforce evaluation tools to monitor the impact of the *Novas Oportunidades* programme.
- In the context of the rise in the age of compulsory education, consider the need to increase physical resources, and in particular those that are associated with the provision of technical education. Provide training to school managers and teachers to address increased diversity in the student body.
- Implement training for teacher evaluation systematically within schools. Strengthen the links between teacher and school evaluation. Consider introducing an external component to teacher evaluation and link the evaluation to national-level criteria standards and indicators.
- Reduce the high rates of school-year repetition. Continue to strengthen monitoring mechanisms of those at risk of dropping out. Expand targeted interventions to immigrant groups.
- Schools should be given more autonomy to hire staff and consideration should be given to design incentive-based pay for teachers.

**Notes**

1. Portugal's performance is benchmarked against two groups of countries: on the one hand, the neighbouring Southern European countries, and, on the other, the Eastern European countries, because those are becoming important competitors for Portugal in a number of sectors, particularly so in manufacturing.
2. The industry sector includes manufacturing, mining, quarrying, electricity, gas and water (see Table 3.A1.1).
3. Data from the Bank for accounts of companies harmonised (BACH), as analysed by the European Commission (European commission, 2009).
4. The share of clothing, textile materials and shoes in manufacturing exports went down from more than 28% in 1998 to less than 14% in 2008.
5. Recent empirical literature that has shown, based on firm-level data, that increased import competition with China has caused a significant technological upgrading in European firms through both faster diffusion and innovation, both within and between establishments and firms (Bloom *et al.*, 2009).
6. There are well-known difficulties in properly measuring labour productivity in services, which should be kept in mind when interpreting this analysis. These cover: i) general problems of definition and computation of underlying price indexes for measuring constant price value added;

- ii) the use of employment *versus* hours worked as a measure of labour input (see Wölfl, 2003). The dataset used in this analysis is produced with the explicit aim of minimizing measurement issues for cross-country comparative perspective.
7. The productivity benefits of FDI in trade, restaurants and hotels is less clear cut than in other sectors, though. Dynamic MNCs can have an impact on growth by boosting services exports.
  8. Nunes and Sarmento (2010b).
  9. See also data on size distribution of firms and employment (European Commission, 2009). Moreover, empirical work based on *Quadros de Pessoal* shows that firm size has been decreasing in Portugal over the recent period, within sectors (Nunes and Sarmento, 2010a).
  10. The level of concentration, measured by the Herfindhal-Hirschman index (HHI), is increasing in both industries. According to *Quadros de Pessoal* data, in wholesale, it went from 25.1 in 1995 to 36.39 in 2006. In retail, it went from 49.44 in 1995 to 108.46 in 2006. This assessment comes with a caveat, however. The HHI criterion might indeed not be a sufficient metric to assess the overall level of competition in an industry. Furthermore, the relatively high turnover of firms in the sector in Portugal (measured by birth and death rates) can be indicative of a relatively better competitive stance.
  11. See the product market indicators database (Wölfl *et al.*, 2009).
  12. The period referred by the World Bank indicator includes the required notifications and inspections. However, a warehouse may be in use before an inspection is performed and, thus, it is usually operating in a shorter period than 287 days.
  13. Wölfl *et al.*, 2009.
  14. Doing Business indicators (*Doing Business*, 2010).
  15. Performance contracts are already in place in television broadcasting, air travel, public theatres, and privately-owned public transportation operators that practice social tariffs.
  16. Congestion is one of the main externalities under discussion, but it is important to consider the costs associated with air quality and noise, especially in urban areas. The Portuguese Ministry of Environment has set up innovative and ambitious policies in this respect, such as a set of binding measures aimed at enhancing interior air quality within buildings.
  17. These data come from the International Energy Agency Review of Portugal's energy policy (IEA, 2009).
  18. In the 2010 Stability and Growth Programme, the government announced the "postponement, for two years, of the Lisbon-Porto and Porto-Vigo high-speed rail links, in order to avoid any financial impact until 2013".
  19. According to Araujo and Sutherland (2010), nine countries responding to the OECD infrastructure questionnaire in 2008 report that PPPs are accounted for as contingent liabilities in government accounts. Portugal is not part of them.
  20. It should be noted though that the plan was launched immediately before the onset of the global financial crisis, which clearly affected the capacity to invest in some of the projects.
  21. There is a 2007 CBA study on focused on the previous location (Ota), which implies a 10.8% economic rate of return. The comparative analysis made in 2007 by an independent entity between Ota and Alcochete indicated that Alcochete is close to or better than Ota in terms of CBA.
  22. Recently, some low cost companies have entered the market. In principle, there is no entry restriction in the market.
  23. Information available at [www.eurotestmobility.com](http://www.eurotestmobility.com).
  24. The effect of population structure actually covers both demographic and educational differences, because the groups are defined according to education, gender, and age classes. However, variations along the educational dimension explain about 85% of the total population structure effect across countries and 93% in Portugal so that the results would be the same by using only the educational structure component.
  25. While these calculations are illustrative in nature, they confirm the key role that education can deliver to close Portugal's income gap; moreover, these calculations are mechanical because group-specific employment rates and countries' aggregate technological levels are assumed to remain at their current levels. This implies that the complex implications of such population shifts for group-specific labour utilisation performance and for technology adoptions are ignored. To the extent that such changes in the composition of the working-age population would be associated

with skill upgrading, they would likely be conducive to the adoption of more efficient technologies. This would imply that those shifts in population structure have also indirect effects that amplify the direct ones that are computed herein.

26. Education is measured by a categorical variable based on the highest International Standard Classification of Education (ISCED) level attained by the individual. For the purpose of estimation, the five ISCED categories are aggregated into three modalities: i) low education (pre-primary, primary, lower secondary, i.e. ISCED 0-2); ii) medium education (upper-secondary and post-secondary i.e. ISCED 3, 4); and iii) higher education (tertiary i.e. ISCED 5, 6).
27. The R squared of a regression of low wages on educational attainment is the highest across European OECD countries: 33% for men and 50% for women (OLS estimates).
28. Wage differences between high and low educated workers can be computed as the difference between the estimated premium to tertiary education and the estimated penalty to less than lower secondary education.
29. Causa and Chapuis (2009).
30. Hartog et al. (2000).
31. Currently, there are two main mechanisms through which teacher and school evaluation are related: i) external evaluation takes into account how teacher evaluation is organised; ii) schools that receive a good evaluation can rise their quota of “very good” and “excellent” teachers.
32. Unfortunately, the more up-to-date PISA 2006 survey does not allow analysing repetition rates in a cross-country perspective.
33. Estimates presented in OECD (2007).
34. Empirical literature generally finds a positive effect of out-of-school practices on students’ achievement. One of the most recent examples is Zimmer et al. (2009), who provide empirical support to the effectiveness of programmes providing learning opportunities for students by funding tutoring and programmes providing supplemental educational services to low-income students attending schools that miss school-wide academic targets in Pittsburgh.
35. OECD (2009d).

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## ANNEX 3.A1

### *Results of the productivity analysis by sector*

Table 3.A1.1. Sectoral contributions to productivity growth<sup>1, 2</sup>

	Portugal		Czech Republic		Hungary		Poland		Slovak Republic		Italy		Greece		Spain	
<b>Agriculture</b>																
1990-1995	1.0	(0.0)	..	..	0.0	(-0.1)	..	..	0.0	..	0.0	(0.0)	0.3	..	0.0	0.0
1995-2000	0.0	(-0.1)	0.3	(0.2)	0.3	(0.3)	-0.1	(0.0)	0.7	(0.5)	0.3	(0.2)	0.3	(0.1)	0.2	(0.1)
2001-2006	0.1	(0.0)	0.2	(0.2)	0.9	(0.7)	0.4	(0.2)	0.7	(0.7)	0.0	(0.0)	0.4	(0.1)	0.0	(0.0)
<b>Construction</b>																
1990-1995	0.1	(0.1)	..	..	0.0	(-0.2)	..	..	..	..	0.0	(0.4)	..	..	0.1	(0.0)
1995-2000	-0.3	(-0.1)	0.1	(-0.1)	-0.1	(-0.1)	0.4	(0.4)	1.0	(0.5)	0.0	(0.0)	0.2	(0.2)	-0.3	(-0.1)
2001-2006	0.0	(-0.1)	0.0	(0.0)	0.0	(0.0)	0.2	(0.3)	0.3	(0.3)	-0.1	(0.0)	0.6	(0.5)	-0.2	(0.0)
<b>Industry</b>																
1990-1995	0.5	(1.9)	..	..	3.1	..	..	..	..	..	0.7	(1.0)	..	..	0.4	(0.3)
1995-2000	0.8	(0.5)	1.4	(1.3)	1.9	(1.1)	2.0	(2.1)	1.3	(1.2)	0.5	(0.4)	0.5	(0.3)	0.2	(0.1)
2001-2006	0.5	(0.3)	2.1	(1.9)	1.4	(1.4)	1.6	(1.5)	4.3	(3.8)	0.0	(-0.1)	0.6	(0.4)	0.1	(0.0)
<b>Trade</b>																
1990-1995	0.1	(0.4)	..	..	-0.3	(0.3)	..	..	..	..	0.4	(0.3)	..	..	-0.1	(0.1)
1995-2000	0.2	(0.3)	0.9	(0.8)	-0.2	(-0.1)	0.9	(0.8)	0.6	(0.5)	0.2	(0.2)	0.5	(0.5)	-0.2	(-0.2)
2001-2006	-0.5	(-0.3)	1.0	(1.0)	0.5	(0.6)	0.7	(0.8)	0.1	(0.2)	-0.3	(-0.2)	-0.1	(0.0)	-0.3	(-0.2)
<b>Finance</b>																
1990-1995	0.2	(-1.5)	..	..	0.8	(1.1)	..	..	..	..	0.2	(-0.4)	..	..	-0.1	(0.0)
1995-2000	1.0	(0.4)	-0.1	(-0.4)	0.0	(-1.0)	0.6	(-0.3)	-0.1	(-0.9)	0.0	(-0.6)	0.3	(-0.2)	0.2	(-0.3)
2001-2006	0.4	(0.2)	0.2	(0.0)	0.8	(0.3)	0.5	(0.4)	0.0	(-0.3)	0.0	(-0.4)	0.4	(0.0)	0.5	(0.1)
<b>Other services</b>																
1990-1995	0.6	(0.3)	..	..	0.5	(2.3)	..	..	..	..	0.1	(1.2)	..	..	0.2	(0.3)
1995-2000	0.3	(0.5)	-0.2	(-0.1)	1.0	(1.2)	0.9	(1.2)	1.9	(1.6)	0.1	(0.2)	0.7	(0.8)	0.1	(0.3)
2001-2006	0.3	(0.3)	0.6	(0.7)	0.5	(0.5)	0.9	(1.0)	-0.1	(0.0)	0.1	(0.2)	0.7	(0.6)	-0.3	(-0.2)
<b>Total services</b>																
1990-1995	0.9	-0.8	..	..	1.0	3.7	..	..	..	..	0.7	1.1	..	..	0.0	0.4
1995-2000	1.5	1.2	0.6	0.3	0.8	0.1	2.4	1.7	2.4	1.2	0.3	-0.2	1.5	1.1	0.1	-0.2
2001-2006	0.2	0.2	1.8	1.7	1.8	1.4	2.1	2.2	0.0	-0.1	-0.2	-0.4	1.0	0.6	-0.1	-0.3
<b>TOTAL</b>																
1990-1995	2.6		..		5.2		..		..		1.7		..		1.1	
1995-2000	2.0		2.1		2.9		4.6		4.2		1.1		2.5		0.2	
2001-2006	0.8		3.9		3.9		4.3		4.7		-0.3		2.5		-0.1	

1. Data in parenthesis represent within-sector effects.

2. Sectors are classified as follows (ISIC Rev. 2): Agriculture: Agriculture, hunting, forestry and fishing (01-05). Construction: Construction (45). Industry: Mining, quarrying, manufacturing electricity, gas and water (1014 + 4041 + 1537). Trade: Wholesale and retail trade; repair of motor vehicles and household goods, and hotels and restaurants (5055). Finance: Financial assurance and real estate (6574). Other services: Transport, storage, communication and community, social and personal services (6064 + 7599).

Source: OECD calculations based on Structural Analysis (STAN) Database.

## ANNEX 3.A2

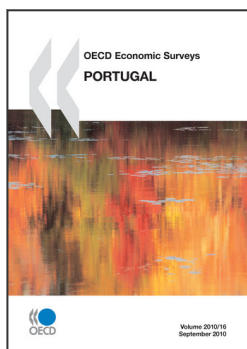
## Progress in structural reform

This annex reviews actions taken to follow productivity-related policy recommendations made in the 2008 OECD *Economic Survey of the Portugal*. Recommendations that are new in this Survey are shown in the box at the end of the chapter.

Recommendations in previous Survey	Actions taken and current assessment
<b>A. Maximising the gains from integration in the world economy</b>	
<b>Reduce non-tariff barriers to trade</b>	
Continue to reduce customs costs associated with exporting and importing, through upgrading and developing an integrated information technology (IT) system that can be used by all the main actors in importing and exporting, including customs, ports and airports and freight companies.	Since July 2009, all export-related customs declarations are produced at the customs authority by using an IT system. A Single Port Window, a technological platform involving all public relevant actors in importing and exporting, is in use in the main Portuguese ports.
Remove Portuguese specific ( <i>i.e.</i> non-EU), penalties for non compliance with the customs code and other regulations.	No actions taken.
<b>Maximise the benefits of FDI</b>	
Reduce FDI restrictions in air transport, to promote competition and tourism trade.	There has been an increase in the number of low-cost airlines operating in the main Portuguese airports, although no formal action was taken to promote competition in the sector.
<b>Improve the product market regulatory system</b>	
Fully implement the SIMPLEX programme to improve the administrative and regulatory environment for business-government interactions.	The SIMPLEX program is being consistently implemented since its introduction in 2006. There has been a substantial reduction of administrative and regulatory procedures needed in business-government interactions. Simplex has been extended to municipalities through its 2009-10 Edition.
Streamline the licensing process and increase collaboration between central government and municipalities, for example through contracting arrangements, as this is important for effective implementation.	The licensing process is being streamlined by several measures, such as the "zero licensing" programme, further computerisation of procedures through the "Point of Single Contact" programme (set to be fully operational by January 2011), and simplification of commercial and industrial licensing (Decree-Law 21/2009, of January 19, and Decree-Law 209/2008, of 29 October, respectively). Licensing regimes were also simplified in the tourism sector. The <i>SimplexAutárquico</i> programme promotes collaboration in some licensing procedures between central government and a small but growing number of municipalities.
Harmonise regulations with major trading partners, particularly sector-specific regulations in services, including service sector standards and qualification requirements.	While transposing the Services Directive (2006/123/EC), sector-specific regulations have generally adopted rules on candidate selection procedures, tacit approval and nation-wide validity and unlimited duration for authorisations granted. Sector-specific "freedom to provide services" clauses were put in place.

Recommendations in previous Survey	Actions taken and current assessment
<b>Facilitate SME access to capital markets</b>	
Ensure public intervention to improve SMEs' access to financing remains focussed on solving market failures, such as information asymmetries. Maximise private sector capital contributions per euro of public capital at risk, and avoid outright grants or credit with a zero interest rate for SMEs.	Policies intended to improve SMEs' access to financing have been expanded through several programmes, such as <i>PME segura</i> (credit insurance), <i>FINICIA</i> (support new business start-up through technical advice and access to credit and venture capital), <i>FINTRANS</i> (encourage business re-sising and transfer), <i>COMPETE</i> (co-financed by the private sector, support the creation of risk capital and business angels funds).
Conduct a rigorous cost-benefit analysis of the programmes in place to promote SMEs' access to finance (for start-ups and more mature SMEs), in order to ensure maximum returns from public funds.	No actions taken.
<b>Strengthening competition and improving infrastructure</b>	
Increase the priority on price in public procurement criteria, differentiate the criteria used for procurement of consulting, infrastructure and goods and services and give the Competition Authority jurisdiction to issue decisions on public procurement concessions and contracts.	No actions taken.
Consider amending the Competition Law to repeal the Government's exceptional review power that allows it to overrule a Competition Authority decision to block a merger. Undertake a broad review across the economy of legal restraints on competition.	No actions taken.
<b>Telecommunications</b>	
Continue to lower mobile telephone termination charges and require that there be no discrimination of termination charges between calls within a firm's own network and calls from other networks to eliminate network externalities that favour larger firms.	From July 2008 to October 2009, the National Telecoms Regulator (ICP-ANACOM) implemented positive discrimination in mobile termination charges in favour of the smallest operator. In May 2010, ICP-ANACOM decided to further lower termination charges, which are set to decline until August 2011, therefore contributing to reduce the on-net/off-net gap.
Take action to increase ownership independence of the newly separated copper wire and cable-owned networks. Ensure there is effective competition between the two networks.	There is evidence of increased competition between copper and cable networks with bundled offers playing an important role. The incumbent market shares have decreased, especially in the fixed broadband access market where the entrants now have a combined market share of 56%.
Consider separating the ownership of PT multimedia content from the rest of the company to encourage competition.	In November 2007, the spin-off of PT Multimedia (now ZON) from Portugal Telecom (PT) allowed for a structural change in the Portuguese telecoms market, promoting platform competition between the incumbent public switched telephone network (PSTN) operator PT and the cable network operator ZON. However, the latter now possesses substantial media content in addition to its offer of bundled services.
<b>Electricity</b>	
Continue to encourage an increase in non-incumbent generation through expansion of the Virtual Power Plants scheme and issuing licenses to build new generation to non-incumbents.	The expansion through Virtual Power Plants was discontinued. Licenses to build new gas fired generation capacity have been issued but only one company made public a predicted entry date in the market.
Allow the regulator full independence to set retail tariffs.	No actions taken.
Fully implement the plan to phase out regulated retail tariffs and replace with market tariffs. Extend the phasing out to all consumers and, if necessary, introduce direct income support targeted to low-income consumers.	The Government has announced the phasing out of regulated tariffs in very high voltage, high voltage, medium voltage and low special voltage but the phasing out does not include domestic consumers.

Recommendations in previous <i>Survey</i>	Actions taken and current assessment
<i>Transport</i>	
Introduce a performance contract for both the rail track and rail companies with clear performance and financial targets linked to management compensation. Internationally benchmark both the rail track and rail operators to help set targets and encourage efficiency.	<p>A new Performance Contract Regulation was enacted by the Railway Regulatory Unit (URF) of the Institute for Mobility and Terrestrial Transportation and came into force on 21 May 2010.</p> <p>The performance contracts are mandatory and the first proposals must be submitted to the URF by the end of July 2010. The contracts are based on penalties and compensations in case of delays, as well as prizes for good performance, evaluated on a multi-year basis. Public service contract</p> <p>Within the context of the Iberian Electricity Market (MIBEL), an agreement was reached between Portugal and Spain (approved by the Portuguese Parliament in January 2009), to eliminate all regulated tariffs by January 2010, except for Low Voltage customers and management contracts targets will be linked.</p>
<b>B. Up-skilling the labour force</b>	
Maintain the focus on developing human capital of youths to improve their employment and earning prospects; and continue to develop vocational and technical education to improve the school-to-work transition.	There has been a sizeable expansion of vocational education and training supply at the upper-secondary level, notably through the <i>Novas Oportunidades</i> program.
Promote life-long learning to help the workforce adjust to higher value-added production, favouring important private sector participation, both in defining the programmes needed and in supply (such as private institutions providing courses or courses being offered in private firms).	Lifelong learning is being promoted through the <i>Novas Oportunidades</i> program. The private sector is involved in the supply of training courses.
Monitor the implementation and evaluate the results of the “New Opportunity” initiative (education programmes for the young at risk of dropping out and training programmes for adults with low school attainment) as its scale expands, to ensure that programmes meet private sector demand.	There is currently an international experts’ team developing an external evaluation study about the impact of the <i>Novas Oportunidades</i> program on adults’ social and professional path. The 4-year study began in 2008 and it is supposed to publish its preliminary results in 2011.



**From:**  
**OECD Economic Surveys: Portugal 2010**

**Access the complete publication at:**  
[https://doi.org/10.1787/eco\\_surveys-prt-2010-en](https://doi.org/10.1787/eco_surveys-prt-2010-en)

**Please cite this chapter as:**

OECD (2010), "Policy priorities to restore productivity growth", in *OECD Economic Surveys: Portugal 2010*, OECD Publishing, Paris.

DOI: [https://doi.org/10.1787/eco\\_surveys-prt-2010-6-en](https://doi.org/10.1787/eco_surveys-prt-2010-6-en)

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