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"Portugal before and after the European Union: Facts on Nontradables"

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Facts on Nontradables*

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Abstract

The rise of nontradable sectors has been mentioned as one of the causes of low economic growth and external imbalances in the Portuguese economy. In this paper we describe the main trends and jumps in the evolution of nontradable sectors, since the mid-1950s, using four different databases to shed light on different dimensions of this issue. We show that, despite the pattern of the growth of the share of services being similar to that observed in other developed countries, since the early 1990s it has been significantly larger than in most countries. We find that the shift to nontradables in Portugal has been fast and that it occurred essentially at the expense of agriculture in the period 1953-95, and essentially at the expense of industry in the period 1995-2009. In 2009, the share of nontradables in total GVA reached 61%, if we exclude open service sectors, and 74.4%, if we treat all service sectors as nontradable. We also find that more than half of the change towards nontradables since joining the European Union took place in the period 1988-1993. Finally, we show that construction and services facing a strong Government demand were the main drivers of the increasing weight of nontradables in the Portuguese economy since 1986.

1. Introduction

The role of nontradable sectors in the evolution of the Portuguese economy in recent years has been controversial. Several commentators, among which João Ferreira do Amaral and Vítor Bento, have argued that nontradable sectors in Portugal have

benefited from a misallocation of resources. According to Amaral (2006a), membership of the European Union – and later Eurozone – has imposed a straightjacket on the Portuguese economy, forcing the opening to international competition and to international financial markets of an ill-prepared economy, and the surrender of the exchange-rate instrument, and this has benefitted the rise of nontradable sectors relative to tradables. Bento (2009) views the rise of nontradables question from a different angle. According to Bento, the growth of nontradable sectors has essentially been spurred by their ability (enhanced by Government action) to extract rents, and has damaged the competitiveness of the Portuguese economy. Either way, both Amaral and Bento view the shift of resources to nontradable sectors as having contributed to poor economic growth and to the external imbalances at the root of Portugal's current predicament.

The European Central Bank, European Commission and International Monetary Fund, members of the troika that is conducting Portugal's bailout, seem to share the same view. The original memorandum of understanding mentions the need to "improve effectiveness of existing instruments dealing with export promotion and access to finance and support the reallocation of resources towards the tradable sector" (p. 32). The last, at the date of writing, review of the adjustment programme (October 2012) states on page 23 that the troika "urged the authorities to continue exploring options to reduce production costs and compress mark-ups in the non-tradable sector and boost productivity." Likewise, both the 2012 OECD Economic Survey of Portugal and the OECD Economic Outlook stress at several points the need for eliminating the distortions that tilted the Portuguese economy towards low-productivity domestically-oriented sectors. This view receives support from work by Amador and Soares (2012), who concluded that there is substantial room to improve competition in nontradable sectors.

The rise of nontradables has therefore played an important role both in stories about how Portugal arrived at its current situation and in the construction of roadmaps for exiting from the crisis. Assessment of the alternative proposals requires an understanding of the behaviour of nontradables in Portugal in the last decades.

In this paper we use databases from four different sources – namely, Banco de Portugal, European Commision, Instituto Nacional de Estatística and the EU Klems Growth and

Productivity Accounts Database – to characterize several dimensions of the evolution of nontradable sectors in the Portuguese economy. We begin by discussing the difficulties of measuring nontradables in section 2. We then describe the structural change in the Portuguese economy by placing them in the international context and examining the long run trends (sections 3 and 4). Finally, in section 5 we identify the periods, after joining the European Union, in which jumps in the weight of nontradables took place, and also the sectors which contributed the most for the rising weight of nontradables in the Portuguese economy.

2. Tradables and Nontradables

In economic theory, nontradable goods are those which are not exposed to international competition. This may happen as a result of the characteristics of those goods, which make it difficult to trade them across locations, in particular, across national borders; barber shops and convenience stores are traditional examples. The immediate implication of this distinction between tradable and nontradable sectors in economic theory is that there will be a difference in the behaviour of prices in tradable and nontradable sectors. In particular, the price of tradable goods will be subject to the law of one price, while the price of nontradables will depend on domestic demand and supply.

Balassa (1964) and Samuelson (1964) noted that a consequence of this difference of behaviour between prices of tradable and nontradable goods ("traded" and "non-traded" goods for Balassa, "mobile" and "domestic" goods for Samuelson) is that purchasing power parity will not hold for aggregate price indexes. In effect, the celebrated "Balassa-Samuelson effect" implies that, as a result of larger productivity differences across countries in tradable sectors than in nontradable sectors, rich countries' exchange rates will appear to be overvalued when compared with purchasing power parities computed with aggregate price indexes. The hypothesis that, as in the Balassa-Samuelson effect, productivity tends to grow faster in tradable sectors than in nontradable sectors has become common in economic analyses. This has to do, not with the fact that some goods are immune to outside competitive pressures – the original distinctive feature of nontradables –, but with the fact that, in general, tradable goods are associated with agricultural and manufactured goods – where technological progress

is notorious – whereas nontradable goods were thought to be mainly services – where technological progress is assumed to play a lesser role. Balassa explicitly made this association, while Samuelson suggested, as examples of nontradables, "cheap Italian haircuts" and "Niagara-Falls honeymoons", both of which refer to services.

Similarly, in Baumol's view (Baumol, 1967, pp. 415-416), manufacturing sectors are "technologically progressive activities", where innovation, capital accumulation and economies of scale contribute to increases in productivity. On the other hand, services – such as education and arts – are activities of a nature which allows only "sporadic increases in productivity."[1] On the basis of this difference in productivity growth, Baumol (1967) predicted that an increasing weight of services in the economy would imply a slowdown in economic growth rates. However, innovation in information and communications technologies (ICT) has changed the way certain services are produced and delivered,[2] and this has enhanced productivity growth. For example, Triplett and Bosworth (2003) show that labour productivity growth in services in the US, after 1995, accelerated and was almost identical to the economy-wide average, that is, an annual growth rate of approximately 2.5%. According to these authors, multifactor productivity, capital deepening and increased use of intermediate goods were the main causes of that acceleration – see also Timmer et al. (2010). These findings therefore suggest that the increasing weight of services is not incompatible with high growth rates – Ghani (2010), for example, presents evidence on the importance of some service industries for India's high growth rates.

Developments in ICT have also contributed to blur the association between services and nontradables. In fact, although the inclusion of manufacturing in tradable sectors is consensual, the classification of agriculture, mining and services such as transportation and communications as tradables has been controversial. Some authors exclude agriculture and mining from tradable sectors because these sectors, both in Europe and in the USA, are highly regulated and subsidized by Governments – see, for example, Camarero (2009). However, the traditional view of services as nontradables is highly

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[1] According to Baumol, the essential difference between these sectors is in the role of labour: in technologically progressive activities labour is primarily an instrument used in the production of certain goods, whereas in the other activities the quality of labour is the fundamental element of the good being produced, as in a live performance by a music quintet.

[2] In fact, this has led to a distinction between modern impersonal services (communication, banking, insurance and business related services) and traditional personal services (trade, hotel, restaurant, transport, public administration, among others) – see Ghani (2010).

controversial given the development of ICT, which has facilitated transnational trade in services. For example, Amazon provides stiff competition to local bookshops, while foreign students have flocked to US and UK universities, suggesting that retail shops and education institutions are not as immune to international competition as the traditional view would have it. On the other hand, business services, such as the software industry, have had an important impact, both on productivity growth and in exports – see, for example, Timmer *et al.* (2010). This trend has motivated a different approach to the classification of services as tradables and nontradables, which takes into account the weight of international transactions in the sector. Gregorio et al. (1994) follow this approach and set a 10% threshold for the export to production ratio. However, this approach results in a classification of tradable and nontradable sectors very close to the traditional partition. Amador and Soares (2012), using data for the Portuguese economy, classify as tradable all manufacturing industries plus all sectors with an export to sales ratio above 15%. Using this restriction, Amador and Soares classify around 23% of non-manufacturing sectors as tradable, mainly transportation and business services. In related work, Amador and Cabral (2009) show that services now represent over 28% of total Portuguese exports, travel and tourism being the largest contributor, followed by transportation and business services.[3]

In Table 2.1 we report a measure of openness of each services sector, given by the ratio of exports plus imports to total resources in each sector, and the weight of each services sector in total gross value added (GVA) of services sectors, using data from INE for 2009. If we use 20% as the threshold for the openness measure separating tradable from nontradable sectors, then only "Transportation and storage" and "Publishing, audiovisual and broadcasting activities" will qualify as tradable sectors. These two sectors account for only 7.5% of GVA in services. Using this threshold, agriculture and all manufactures will be classified as tradable sectors. Borderline sectors, such as "Electricity, gas, steam and air-conditioning supply", "Water, sewerage, waste management and remediation activities" and "Construction" will fall to the nontradables side. If we lower the threshold to 15%, then "Wholesale and retail trade, repair of motor vehicles and motorcycles", "Computer programming, consultancy and related activities; information service activities" and "Legal and accounting activities; activities of head

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[3] On the evolution of tradable services and its openness degree see also Catarino and Claro (2009). These authors also stress the high growth rate of those sectors relative to the average growth rate of the economy.

offices; management consultancy activities; architecture and engineering activities; technical testing and analysis" will also be considered tradable sectors. In this case, the tradable services sectors will represent 31.8% of total GVA in services. If we consider as nontradables only those service sectors that do not reach the 15% openness threshold, then the share in total GVA of nontradables in the Portuguese economy, in 2009, is 61%. This is significantly lower than the share of services in total GVA, which is 74.4%. These numbers, together with Amador and Cabral's (2009), show that there are a number of services sectors with a significant participation in international trade. In this context, it should be stressed the positive contribution of trade in services to the Portuguese current account balance. Nevertheless, the higher exposure of manufacturing sectors to international trade is still clear, which makes the traditional view appear as a reasonable first approximation. Therefore, we follow this approach in our analysis.

Table 2.1 - Openness of services in the Portuguese economy, 2009

Sectors	Openness (1)	% GVA
Wholesale and retail trade, repair of motor vehicles and motorcycles	16.20	18.69
Transportation and storage	37.21	6.59
Accommodation and food service activities	6.85	6.68
Publishing, audiovisual and broadcasting activities	22.34	0.91
Telecommunications	10.38	2.94
Computer programming, consultancy and related activities; information service activities	16.73	1.32
Financial and insurance activities	6.78	9.40
Real estate activities	0.12	10.95
Legal and accounting activities; activities of head offices; management consultancy activities; architecture and engineering activities; technical testing and analysis	18.81	4.33
Scientific research and development	8.64	0.52
Advertising and market research; other professional, scientific and technical activities; veterinary activities	11.36	0.78
Administrative and support service activities	8.27	3.42
Public administration and defence; compulsory social security	0.00	12.17
Education	0.03	9.12
Human health services	0.04	6.50
Social work activities	0.06	1.84
Arts, entertainment and recreation	7.07	1.06
Other services activities	0.10	1.45
Activities of households as employers of domestic personnel and undifferentiated goods and services production of households for own use	0.06	1.32
		100

Source: Portuguese National Accounts, Instituto Nacional de Estatística.

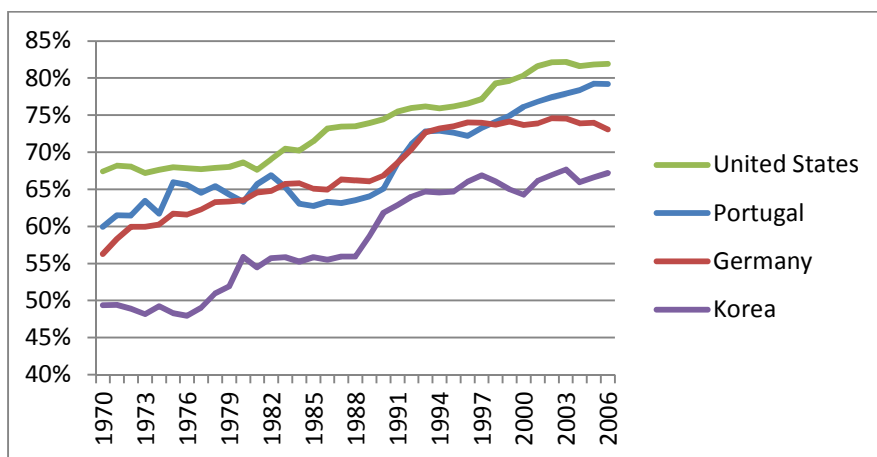(1) ratio of exports plus imports to total resources in each sector (%)

In the next section we describe the evolution of nontradable sectors in Portugal, since 1970, placing it in the international context.

3. Trends in nontradables in the international context

Since the Second World War services have been the most dynamic sectors in most OECD countries, currently accounting for around 70% of total Value Added (VA) and employment (OECD, 2005). In order to understand the evolution of services' share in Portugal, we should, therefore, begin by placing it in the international context. We use data aggregated at a broad sector level from the European Commission's AMECO database, which considers four sectors: (i) agriculture, forestry and fishery products; (ii) industry excluding building and construction; (iii) building and construction; (iv) services. In this section, given the available data, we follow the traditional view and define nontradables as the sum of services plus building and construction.

Figure 3.1 shows the evolution of nontradables' share of total gross value added in Portugal, Germany, the USA and Korea.

Figure 3.1 – Evolution of nontradables' share of GVA

Source: AMECO, European Commission.

It is clear from Figure 3.1 that Portugal has followed the long-run trend present in other countries. In fact, in the sample of countries that we used,[4] the USA (and France)

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[4] Portugal, Germany, Greece, France, Italy, Austria, Finland, United States, Japan, Canada, Australia, Denmark, Netherlands, Belgium, Norway, Mexico, Korea, Sweden, United Kingdom, New Zealand, Turkey, Iceland, Switzerland, Spain and Luxembourg.

provided an approximate upper bound and Korea provided an approximate lower bound for nontradables' share.[5]

In order to analyse the timing of changes in the share of nontradables in different countries, we depict in Figure 3.2, for each year, the evolution of the difference between the average share in the half-decade beginning in that year and the average share in the preceding half-decade, i.e., we filter the share time-series (s_t^i) for each country i to obtain a smoothed series:

$$y_t^i = \frac{s_t^i + s_{t+1}^i + s_{t+2}^i + s_{t+3}^i + s_{t+4}^i}{5} - \frac{s_{t-1}^i + s_{t-2}^i + s_{t-3}^i + s_{t-4}^i + s_{t-5}^i}{5}$$

The sample was divided into three groups of countries, reflecting the similarity of the timing of changes in nontradables' share within those groups (except for group 3, which collects countries with very dissimilar patterns).[6]

Figure 3.2 results from the application of the filter to countries in groups 1 and 2 and taking the yearly average of each group (which we view as representative of the behaviour of the countries in the group). Figure 3.2 shows the share of nontradables in group 1 countries rising slowly in the late 1970s; in the 1980s it increased strongly and continued to increase, albeit at a moderate pace, throughout the 1990s and 2000s. As for the countries in group 2, the share of nontradables was increasing in the late 1970s; the rhythm of increase slowed down in the early 1980s, but growth resumed at a very strong pace in the late 1980s-early 1990s; in the late 1990s the share increased at a more moderate pace, converging with the behaviour of the share in group 1 countries. The countries in group 3 did not display a behaviour similar to those of groups 1 and 2, neither to that of the other elements of group 3.
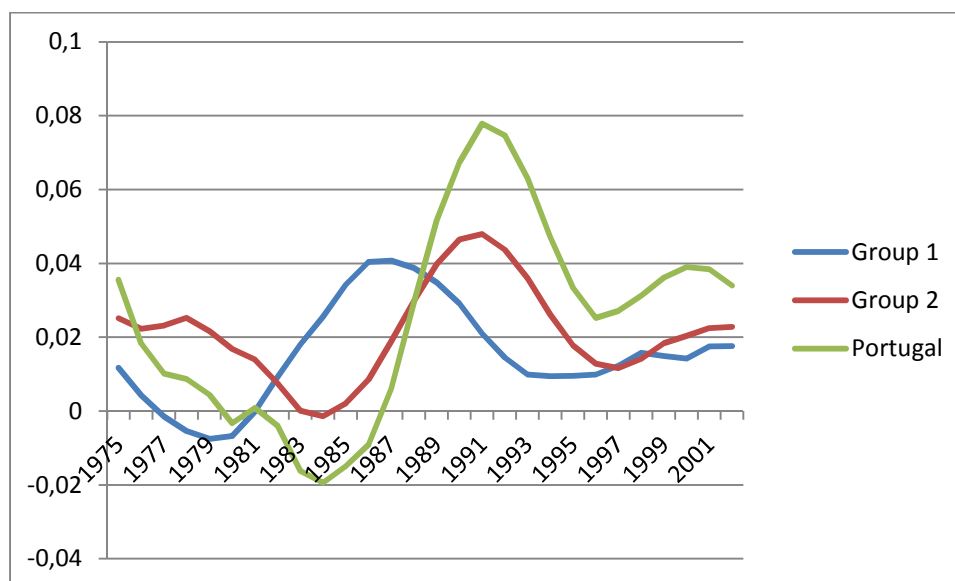
This analysis suggests that Portugal belongs to group 2. In fact, Figure 3.2 shows that the general pattern of the share of nontradables in Portugal is similar to the average of group 2 countries, which includes countries such as Germany and Spain. However, it should be stressed that the amplitude of fluctuations is considerably larger in Portugal.

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[5] Countries that break the bounds are Denmark in the early part of the sample, Luxembourg (for which data begins in 1985), Turkey and Norway, which display a somewhat erratic behaviour.

[6] Group 1 includes Australia, United Kingdom, Finland, Greece, Canada, New Zealand, United States and Norway. Group 2 includes Portugal, Belgium, Mexico, Korea, Luxembourg, Germany, Denmark, Spain, Japan and Sweden. Group 3 includes Austria, France, Italy, Netherlands, Switzerland, Turkey and Iceland.

In particular, the growth of the share of nontradables since the early 1990s in Portugal has been significantly larger than the average of group 2 countries.

Figure 3.2 – Change in the share of nontradables in GVA (smoothed)

Source: AMECO, European Commission, and authors' computations.

This analysis shows that the shift to nontradables in Portugal happened at a time when other advanced economies recorded similar increases in the share of nontradables. The structural change in Portugal therefore mirrors the global trend towards nontradables, observed in all groups: in an erratic fashion in group 3, since the early 1980s in group 1 and since the late 1980s in group 2. The increasing weight of nontradables, viewed in the international context, may therefore suggest that the evolution of nontradables in Portugal does not appear problematic: it is probably due to the same global factors that led others countries to report similar increases in the share of nontradables. Another view, shared by Ferreira do Amaral and others, is that the Portuguese economy was not prepared for such a change and that this change had detrimental effects on the performance of the Portuguese economy. Further enquiry into this matter requires a more disaggregated analysis, to which we give a contribution in the next two sections. We begin by looking in more detail at the long run trends in agriculture, industry, construction and services in the Portuguese economy in the next section.

4. Structural change in Portugal, 1953-2009

This section describes the structural change of the Portuguese economy in the last decades. It uses data for GVA and employment from Banco de Portugal, for the period 1953-1995, and from Instituto Nacional de Estatística, for the period 1995-2009. The disaggregated analysis of long run trends in nontradables in the Portuguese economy requires consideration of those two databases. Unfortunately, the caveat that the two databases are not fully compatible in terms of the classification of sectors must be acknowledged.

Data on GVA and employment presented below show that structural changes in the Portuguese economy presented patterns similar to those of other developing and developed economies, with a drastic reduction in the weight of agriculture and a similar increase in the weight of services – see, for example, Eichengreen and Gupta (2009) on the service sector growth. The weight of industry in total GVA and in total employment was fairly stable throughout most of the period, displaying a declining trend since the mid-1980s.
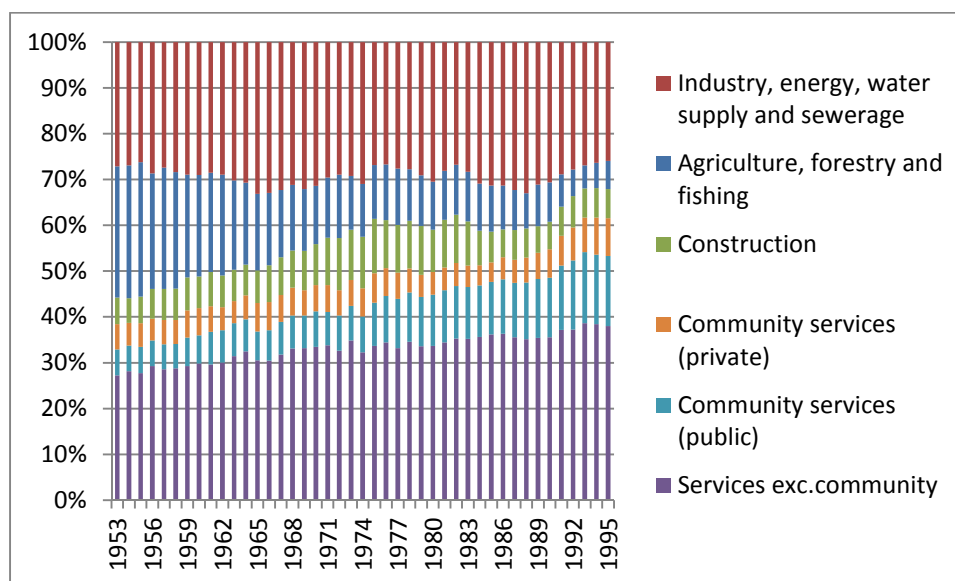
Table 4.1 shows the share of each sector in total GVA in 1953, 1974, 1986 and in 1995 and the difference in percentage points (pp) between 1953 and 1995. Figure 4.1 plots the evolution of these shares. Table 4.1 reports a very large decline in the weight of agriculture in GVA, from 28.7% to 6.2%. On the other hand, between 1953 and 1995, the share of services as a whole jumped 23.1 pp, from 38.4% to 61.5%. Community services provided by the public sector, which include education and human health services, increased 9.7 pp, from 5.6% to 15.3% of total GVA. Manufactures' share declined slightly between 1953 and 1995, while construction's weight rose only 0.5 pp, from 5.8% to 6.3%. However, this masks the fact that construction's weight was around or above 10% between 1971 and 1983.

Table 4.1 – Share in total GVA

Sectors	1953	1974	1986	1995	change
Agriculture, forestry and fishing	28.7%	11.6%	9.5%	6.2%	-22.5 pp
Industry, energy, water supply and sewerage	27.1%	31%	31.3%	26.0%	-1.2 pp
Construction	5.8%	11.2%	6.1%	6.3%	0.6 pp
Services exc.community	27.3%	32.3%	36.3%	38.0%	10.8 pp
Community services (public)	5.6%	7.8%	11.8%	15.3%	9.7 pp
Community services (private)	5.5%	6.2%	4.8%	8.2%	2.7 pp
Services (total)	38.4%	46.3%	53%	61.5%	23.1 pp

Source: Séries Longas, Banco de Portugal.
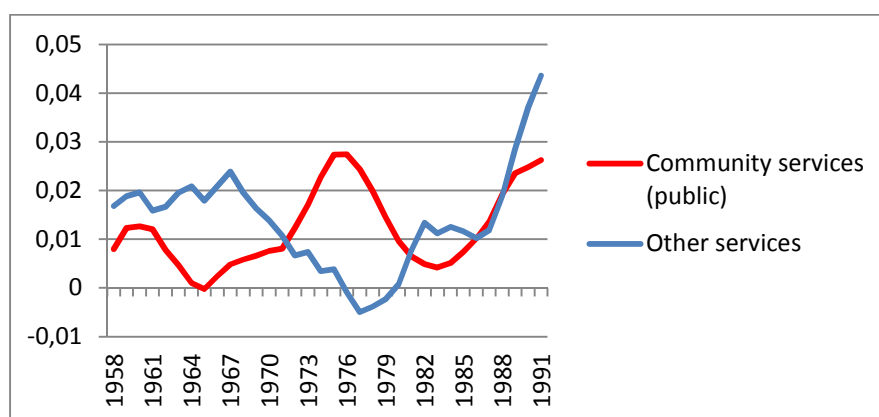
Figure 4.1 – Shares in total GVA

The analysis of Figure 4.1 suggests that the increase in the share of services has not occurred at similar paces in government-provided community services and in the other services. Identifying the periods of higher growth in community services provided by the government is of interest as the role of the government demand for services, such as education and health, to the increase of the weight of services has been emphasized by several authors, namely, Baumol (1967). In Portugal, the role of concentration, government incentives and public expenditure have been mentioned as having contributed to an excessive increase of the nontradable sector relative to the tradable sector – see, for example, Bento (2009).

To facilitate the analysis, we resort to the filter described in section 2. Results are depicted in Figure 4.2, which shows that the rise of government-provided community services' share occurred at a faster pace in the half-decades after 1975 and 1991. The half-decade beginning in 1991 also records the fastest increase in the share of other services. However, before that, the rhythm of increase of other services and of government-provided community services was negatively correlated: before 1972, other services rose faster; between 1972 and 1980, government-provided community services was the fastest growing sector.

Figure 4.2 – Change in GVA share (smoothed)

Source: Séries Longas, Banco de Portugal, and authors' computations.

As we mentioned above, the data we have for the period 1995-2009 does not allow us to continue to observe the evolution of exactly the same sectors. Nevertheless, Table 4.3 presents data on similar sectors. Compared to the shares reported in Table 4.2 for 1995, it is visible in Table 4.3 an increase of services' share. This is the natural result of the allocation of financial intermediation services to the sectors that consumed those services. The other difference, with respect to Table 4.2, is that in Table 4.3 we report the share of "Public administration and defence; compulsory social security; education; human health and social work activities", instead of government-provided community services. The difference in terms of share in 1995 is not large (18.6% versus 15.3%), but it is a reminder of the difficulties involved in long-run sectoral analyses of the Portuguese economy. Still, the numbers in Table 4.3 show that the shift to services, at the expense of agriculture and manufactures, continued in the Portuguese economy in the period 1995-2009. In fact, the pace of decline of industry's share has increased in this period.

Table 4.3 - Share in total GVA

Sectors	1995	2009	change
Agriculture, forestry and fishing	5.5%	2.3%	-3.2 pp
Industry, energy, water supply and sewerage	21.8%	16.6%	-5.2 pp
Construction	7.0%	6.7%	-0.3 pp
Services exc.community	47.0%	52.3%	5.3 pp
Community services(1)	18.6%	22.0%	3.4 pp
Services (total)	65.6%	74.4%	8.7 pp

Source: National Accounts, Instituto Nacional de Estatística.
(1) Public administration and defence; compulsory social security; education; human health and social work activities.

We now look at structural change from the view point of employment. Table 4.4 and Figure 4.3 show the trend of sector shares in total employment between 1953 and 1995,
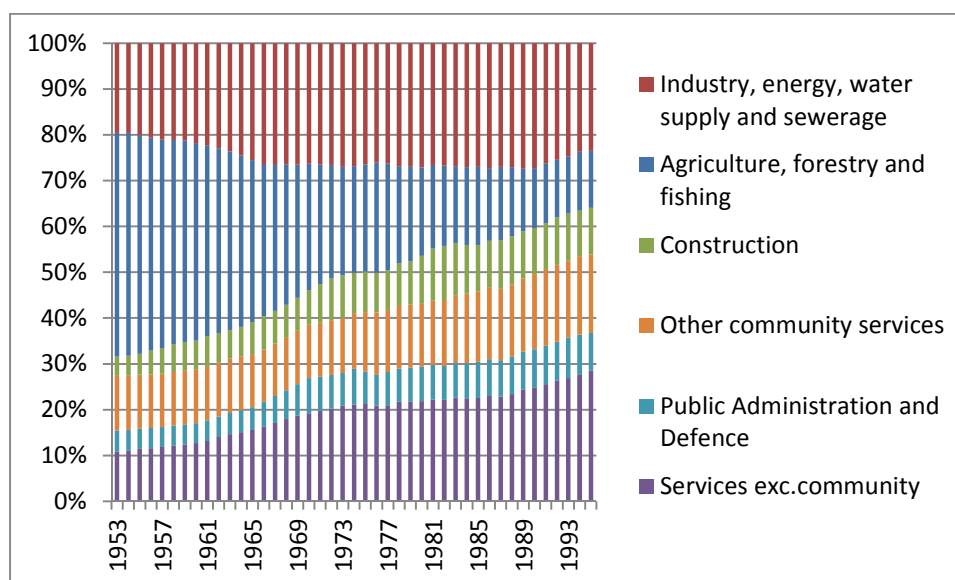
while Table 4.5 shows the change between 1995 and 2009. The change in the weight of primary sectors is enormous: over a third of Portugal's labour force was reallocated from the primary sectors to other sectors, especially services. Another noticeable aspect of the numbers presented is that the change in the share of employment in primary and secondary sectors between 1953 and 1995 is larger, in absolute value, than the change in the share of total GVA. This means that there were larger productivity (per person) gains in these sectors than in services. Between 1995 and 2009, the changes in employment shares are similar to the changes in GVA shares.

Table 4.4 - Share in total employment

Sectors	1953	1974	1986	1995	change
Agriculture, forestry and fishing	48.8%	23.2%	15.9%	12.5%	-36.3 pp
Industry, energy, water supply and sewerage	19.6%	26.9%	27.3%	23.5%	3.9 pp
Construction	4.2%	8.8%	10.1%	10.2%	5.9 pp
Services exc.community	10.9%	21.1%	23%	28.5%	17.7 pp
Public Administration and Defence	4.5%	7.8%	8.1%	8.2%	3.7 pp
Other community services	11.9%	12.2%	15.7%	17.2%	5.2 pp
Services (total)	27.3%	41.1%	46.8%	53.9%	26.5 pp

Source: Séries Longas, Banco de Portugal.

Figure 4.3 – Share in total employment

Source: National Accounts, Instituto Nacional de Estatística.

Table 4.5 - Share in total employment

Sectors	1995	2009	change
Agriculture, forestry and fishing	14.0%	11.1%	-2.8 pp
Industry, energy, water supply and sewerage	22.7%	16.7%	-6 pp
Construction	9.7%	9.8%	0.1 pp
Services exc.community	36.1%	42.5%	6.3 pp
Community services(1)	17.5%	19.9%	2.4 pp
Services (total)	53.7%	62.4%	8.7 pp

Source: National Accounts, Instituto Nacional de Estatística.
(1) Public administration and defence; compulsory social security; education; human health and social work activities.

Our analysis of long run trends suggests four conclusions. First, the shift to services in Portugal occurred essentially at the expense of agriculture in the period 1953-1995, and essentially at the expense of industry in the period 1995-2009. Second, the shift to services has been fast (almost 0.6 pp per year), especially around 1975 and 1991. Third, the rise of services was the result of both public and private increased production of services, with the public sector accounting for roughly 40% of the increase of services' share in total GVA. This leads us to our final conclusion, which is that the largest share increase occurred in areas of traditional public sector intervention: community services (public component) recorded the largest share gain in 1953-1995, while "Public administration and defence; compulsory social security; education; human health and social work activities" did the same in 1995-2009.

In the next section we focus on structural change in the period of the participation of Portugal in the European Union.

5. Structural change and the integration in the European Union

The adhesion, in 1986, to the then European Economic Community, is usually described as a change in the economic regime of the Portuguese economy. The swift economic and financial integration with other European economies and the increase in its openness degree, among other factors, resulted in a significant real convergence in terms of *per capita* income until the year 2000 and important changes in the structure of the economy – see, for example, Banco de Portugal (2009). As we saw in the previous section, the increase in the weight of nontradable sectors and the decline of manufacturing sectors are two important traits of that period and have been associated to the poor performance of the Portuguese economy in the last decade and to its current

predicament. Therefore, in this section, we look in more detail at the behavior of nontradable sectors. In our analysis we use the EU Klems Growth and Productivity Accounts database (O'Mahony and Timmer, 2009), which provides an alternative and continuous source of information on value added and employment by sector in Portugal from 1970 to 2006.

According to the EU Klems database, the share of nontradables, measured as the combined weight of services and construction, in total GVA in Portugal jumped from 62.9% in 1986 to 79.5% in 2006 – see Table 5.1. The same growth is visible in both total employment (from 55.2% to 69.7% – see Table 5.2) and in total employees (from 64.5% to 76.5% – see Table 5.3).

Table 5.1 – Share in total GVA in Portugal

	1974	1986	1995	2006
Agriculture, hunting, forestry and fishing	13%	10.1%	5.7%	2.8%
Manufacturing and (1)	20.2%	27%	22.1%	17.7%
Construction	7.1%	5.7%	6.4%	6.6%
Services	59.7%	57.2%	65.9%	72.9%
	100%	100%	100%	100%

Source: EU Klems
 (1) Mining and quarrying, electricity, gas and water supply.

Table 5.2 – Share in total GVA in Portugal

	1974	1986	1995	2006
Agriculture, hunting, forestry and fishing	28.8%	19.7%	14.5%	11.8%
Manufacturing and (1)	24.5%	24.9%	23.3%	18.5%
Construction	9.6%	8.7%	9.3%	10.2%
Services	37.1%	46.5%	53%	59.5%
	100%	100%	100%	100%

Source: EU Klems
 (1) Mining and quarrying, electricity, gas and water supply.

Table 5.3 – Share in total GVA in Portugal

	1974	1986	1995	2006
Agriculture, hunting, forestry and fishing	8.7%	4.2%	2.9%	2.3%
Manufacturing and (1)	33.3%	31.3%	27.6%	21.2%
Construction	11.2%	9.1%	9.2%	10.2%
Services	46.8%	55.4%	60.3%	66.3%
	100%	100%	100%	100%

Source: EU Klems
 (1) Mining and quarrying, electricity, gas and water supply.

A noteworthy aspect of this evolution is that, according to the EU Klems dataset, a large part of this structural change in the Portuguese economy is concentrated in one period. In terms of value added, over 55% of this change occurred in just 6 years, from 1988 to 1993: in 1987, the weight was 63% and in 1993 it was 72%. If we look at employment,

the change between 1988 and 1993 corresponds to 53% of the change between 1986 and 2006 (42% if we look at the number of employees). Besides this period of high growth of the weight of services and construction, it should also be mentioned that the change from 1996 to 2000 also corresponds to a sizeable 26% of the total change between 1986 and 2006, regardless of whether we look at value added, employment or employees. Thus, the increases that occurred in 10 of the 20 years under analysis represent almost 80% of the total increase of the weight of services and construction in the Portuguese economy. Using the databases of previous sections – Banco de Portugal, Instituto Nacional de Estatística and the European Commission's AMECO database – we find very similar results, that is, the bulk of the change in the weight of tradables/nontrabables took place at the end of the 1980s and in the first half of the 1990s.

In previous sections our analysis focused essentially on the behavior of aggregate sectors. The EU Klems dataset allows us to analyse the evolution of individual sectors and see which are responsible for the observed aggregate changes in the period 1986-2006. In the case of value added, the relevant numbers are in Table A1 in the Appendix. Among the manufactures, the losses occurred essentially in "textiles, textile, leather and footwear" (2.8 pp), "chemical, rubber, plastics and fuel" (3.4 pp) and "basic metals and fabricated metal" (1.1 pp). The gains in share of total GVA, in the period 1986-2006, were the largest in "real estate, renting and business activities" (5.6 pp), "public admin and defence; compulsory social security" (3.5 pp), "health and social work" (3.3 pp) and "education" (2.7 pp), with "hotels and restaurants" (1.9 pp), "financial intermediation" (1.7 pp) and "other community, social and personal services" (1.4 pp) not very far behind.

Focusing our analysis in the first period of extensive structural change (1988-1993), we conclude that the sectors with the largest declines in percentage points were "chemical, rubber, plastics and fuel" (2.2 pp), "pulp, paper, paper, printing and publishing" (1 pp), "basic metals and fabricated metal" (0.7 pp), "wholesale and retail trade" (2 pp) and "transport and storage and communication" (0.8 pp). On the side of increasing shares were "real estate, renting and business activities" (4.7 pp), "public admin and defence; compulsory social security" (2.2 pp), "education" (1.7 pp), "health and social work" (1.3 pp) and "hotels and restaurants" (1 pp). During the second period of significant structural change (1997-2000), the largest decline was observed in "textiles, textile,

leather and footwear" (1 pp), while the largest increases were in "construction" (1.1 pp), "real estate, renting and business activities" (1 pp) and "public admin and defence; compulsory social security" (0.7 pp).

In terms of employment – see Table A2 in the Appendix – the two periods of extensive structural change in value added identified before did not fully correspond to a transfer of employment from manufacturing to services, except in the case of "textiles, textile, leather and footwear" (-1.2 pp). Instead, the gains of services were obtained mainly at the expense of primary sectors – but note that if we look at the number of employees (see Table A3 in the Appendix) we observe a more significant decline in manufacturing employment. In the first period (1988-1993), there was also a reallocation of workers from "hotels and restaurants" to other sectors. The main recipients were "real estate, renting and business activities" (2.4 pp), "public admin and defence; compulsory social security" (1.5 pp), "education" (1.2 pp) and "health and social work" (1 pp). In the second period (1997-2000), the sectors that recorded the largest gains were "construction" (2.2 pp) and "real estate, renting and business activities" (0.7 pp). The significant labour flows that have resulted from the structural change of the Portuguese economy in the last decades deserve a deeper analysis, which could be done using the Ministry of Employment's *Quadros de Pessoal* database.

In summary, the EU Klems database suggests three main observations. First, the process of structural change in Portugal since joining the EU was concentrated in the period 1988-1993 (and, to a smaller extent, in 1997-2000). Second, the shift in importance seems to have occurred mainly from "textiles, textile, leather and footwear", "chemical, rubber, plastics and fuel" and "wholesale and retail trade" towards "real estate, renting and business activities", "public admin and defence; compulsory social security", "education" and "health and social work" – i.e., apart from the first sector mentioned, growth benefited what we may call "community services", which includes government activities. Third, the second period of strong structural change appears to have been strongly connected to "construction" – again, the role of government spending appears to deserve further research.

6. Final Remarks

The rise of nontradable sectors in the Portuguese economy in the last decades has been a key issue in the debate about the Portuguese crisis. Scholars, policymakers and several

commentators have been citing the weight of nontradables as one of the main causes of low economic growth and external imbalances. Despite trends in nontradables in Portugal being similar to patterns observed in other developed countries, since the early 1990s the increase in the weight of nontradable sectors in Portugal has been larger than in most countries. These important changes in the structure of the economy coincided with the integration in the European Union. Most of the increase in nontradables was concentrated in a period of 10 years, and especially between the end of the 1980s and the early 1990s. The data also shows that construction and services usually associated to government spending were the main drivers of the increasing weight of nontradables in the Portuguese economy since 1986. Ferreira do Amaral and others argue that the Portuguese economy was not prepared for such a change, which resulted in low economic growth and in a long period of significant current account deficits. However, the validation of this hypothesis requires a deep analysis of the causes of the structural change in the Portuguese economy in the last decades, such as the real exchange rate appreciation, changes in preferences, differences in productivity growth and government action.

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APPENDIX

Table A1: Share in total GVA in Portugal (disaggregated sectors)

	1974	1986	1995	2006	06 – 74	06 – 86	93 - 87	00 – 96
food , beverages and tobacco	0,03	0,03	0,02	0,02	-0.3 pp	-0.4 pp	0.1 pp	-0.2 pp
textiles, textile , leather and footwear	0,03	0,05	0,04	0,02	-0.4 pp	-2.8 pp	-0.6 pp	-1 pp
wood and of wood and cork	0,01	0,01	0,01	0,01	0 pp	0.1 pp	0.1 pp	0 pp
pulp, paper, paper , printing and publishing	0,02	0,02	0,02	0,01	-0.1 pp	-0.8 pp	-1 pp	0.1 pp
chemical, rubber, plastics and fuel	0,04	0,05	0,02	0,02	-2.1 pp	-3.4 pp	-2.2 pp	-0.5 pp
other non-metallic mineral	0,02	0,02	0,02	0,01	-0.8 pp	-0.7 pp	-0.2 pp	-0.2 pp
basic metals and fabricated metal	0,03	0,03	0,02	0,02	-1.1 pp	-1.1 pp	-0.7 pp	-0.1 pp
machinery, nec	0,01	0,01	0,01	0,01	0 pp	-0.3 pp	-0.3 pp	0.1 pp
electrical and optical equipment	0,01	0,01	0,01	0,01	-0.1 pp	-0.3 pp	-0.1 pp	-0.2 pp
transport equipment	0,00	0,00	0,01	0,01	0.4 pp	0.4 pp	0 pp	-0.1 pp
manufacturing nec; recycling	0,00	0,00	0,01	0,01	0.3 pp	0.2 pp	0.4 pp	-0.1 pp
total manufacturing	0,19	0,24	0,19	0,14	-4.2 pp	-9.1 pp	-4.6 pp	-2.1 pp
electricity, gas and water supply	0,01	0,03	0,03	0,03	1.9 pp	0.3 pp	0.4 pp	-0.5 pp
construction	0,07	0,06	0,06	0,07	-0.5 pp	1 pp	0.1 pp	1.1 pp
wholesale and retail trade	0,13	0,17	0,14	0,13	-0.3 pp	-4 pp	-2 pp	-0.3 pp
hotels and restaurants	0,01	0,03	0,04	0,04	3.2 pp	1.9 pp	1 pp	0.5 pp
transport and storage and communication	0,05	0,08	0,07	0,07	2.4 pp	-0.6 pp	-0.8 pp	0 pp
financial intermediation	0,04	0,06	0,06	0,07	3.6 pp	1.7 pp	0.2 pp	0.3 pp
real estate, renting and business activities	0,28	0,09	0,14	0,15	-13.2 pp	5.6 pp	4.7 pp	1 pp
public admin and defence; comp. s. security	0,03	0,06	0,08	0,09	6 pp	3.5 pp	2.2 pp	0.7 pp
education	0,02	0,04	0,06	0,07	4.6 pp	2.7 pp	1.7 pp	0.2 pp
health and social work	0,02	0,03	0,05	0,07	4.9 pp	3.3 pp	1.3 pp	0.4 pp
other community, social and personal services	0,01	0,01	0,02	0,03	1.6 pp	1.4 pp	0.5 pp	0.3 pp
private households with employed persons	0,00	0,01	0,01	0,01	0.4 pp	0.3 pp	0.2 pp	0 pp
total services	0,60	0,57	0,66	0,73	13.2 pp	15.7 pp	9.1 pp	3.1 pp

Source: EU Klems

Table A2: Share in total employment in Portugal (disaggregated sectors)

	1974	1986	1995	2006	06 – 74	06 – 86	93 - 87	00 – 96
food , beverages and tobacco	0,03	0,03	0,03	0,02	-0.9 pp	-0.5 pp	-0.2 pp	-0.2 pp
textiles, textile , leather and footwear	0,08	0,09	0,08	0,05	-2.8 pp	-3.4 pp	-0.1 pp	-1.1 pp
wood and of wood and cork	0,02	0,01	0,01	0,01	-0.5 pp	-0.3 pp	0.1 pp	-0.1 pp
pulp, paper, paper , printing and publishing	0,01	0,01	0,01	0,01	-0.1 pp	-0.1 pp	0.1 pp	-0.1 pp
chemical, rubber, plastics and fuel	0,01	0,01	0,01	0,01	-0.4 pp	-0.4 pp	-0.1 pp	-0.1 pp
other non-metallic mineral	0,02	0,01	0,02	0,01	-0.4 pp	-0.2 pp	0.1 pp	-0.1 pp
basic metals and fabricated metal	0,02	0,02	0,02	0,02	0 pp	0 pp	0.1 pp	0 pp
machinery, nec	0,01	0,01	0,01	0,01	-0.1 pp	-0.3 pp	-0.1 pp	-0.1 pp
electrical and optical equipment	0,01	0,01	0,01	0,01	-0.2 pp	-0.3 pp	0 pp	0 pp
transport equipment	0,01	0,01	0,01	0,01	-0.2 pp	0 pp	-0.1 pp	0 pp
manufacturing nec; recycling	0,01	0,02	0,01	0,01	-0.1 pp	-0.5 pp	-0.4 pp	-0.1 pp
total manufacturing	0,24	0,24	0,22	0,18	-5.8 pp	-5.9 pp	-0.8 pp	-1.8 pp
electricity, gas and water supply	0,01	0,01	0,01	0,00	-0.2 pp	-0.5 pp	-0.1 pp	-0.1 pp
construction	0,10	0,09	0,09	0,10	0.6 pp	1.6 pp	0.5 pp	2.2 pp
wholesale and retail trade	0,14	0,15	0,16	0,17	3.3 pp	2 pp	-0.2 pp	0 pp
hotels and restaurants	0,04	0,06	0,05	0,06	1.6 pp	0 pp	-1.4 pp	0.5 pp
transport and storage and communication	0,04	0,04	0,04	0,04	0 pp	-0.1 pp	-0.2 pp	0.1 pp
financial intermediation	0,01	0,02	0,02	0,02	0.3 pp	-0.2 pp	0.2 pp	-0.3 pp
real estate, renting and business activities	0,01	0,02	0,05	0,06	4.9 pp	4.1 pp	2.4 pp	0.7 pp
public admin and defence; comp. S. security	0,04	0,05	0,07	0,07	3.4 pp	1.8 pp	1.5 pp	0 pp
education	0,03	0,04	0,05	0,06	2.9 pp	1.6 pp	1.2 pp	0.2 pp
health and social work	0,03	0,04	0,05	0,05	2.9 pp	1.9 pp	1 pp	0.2 pp
other community, social and personal services	0,01	0,02	0,03	0,03	1.8 pp	1.3 pp	0.5 pp	0.2 pp
private households with employed persons	0,02	0,02	0,03	0,03	1.3 pp	0.6 pp	0.6 pp	-0.1 pp
total services	0,37	0,46	0,53	0,59	22.4 pp	13 pp	5.7 pp	1.5 pp

Source: EU Klems

Table A3: Share in total employees in Portugal (disaggregated sectors)

	1974	1986	1995	2006	06 – 74	06 – 86	93 - 87	00 – 96
food , beverages and tobacco	0,04	0,04	0,03	0,03	-1.8 pp	-1 pp	-0.4 pp	-0.4 pp
textiles, textile , leather and footwear	0,11	0,11	0,10	0,06	-4.9 pp	-4.8 pp	-0.7 pp	-1.4 pp
wood and of wood and cork	0,02	0,02	0,01	0,01	-0.8 pp	-0.4 pp	0 pp	-0.1 pp
pulp, paper, paper , printing and publishing	0,02	0,01	0,01	0,01	-0.4 pp	-0.3 pp	0 pp	-0.2 pp
chemical, rubber, plastics and fuel	0,02	0,02	0,01	0,01	-0.7 pp	-0.6 pp	-0.3 pp	-0.1 pp
other non-metallic mineral	0,02	0,02	0,02	0,01	-0.8 pp	-0.4 pp	0 pp	-0.1 pp
basic metals and fabricated metal	0,03	0,02	0,02	0,02	-0.4 pp	-0.2 pp	-0.1 pp	0 pp
machinery, nec	0,01	0,02	0,01	0,01	-0.3 pp	-0.5 pp	-0.2 pp	-0.1 pp
electrical and optical equipment	0,02	0,01	0,01	0,01	-0.5 pp	-0.5 pp	-0.1 pp	0 pp
transport equipment	0,01	0,01	0,01	0,01	-0.5 pp	-0.1 pp	-0.1 pp	0 pp
manufacturing nec; recycling	0,02	0,02	0,02	0,01	-0.4 pp	-0.8 pp	-0.6 pp	-0.1 pp
total manufacturing	0,32	0,30	0,26	0,20	-11.6 pp	-9.4 pp	-2.5 pp	-2.5 pp
electricity, gas and water supply	0,01	0,01	0,01	0,01	-0.3 pp	-0.7 pp	-0.2 pp	-0.1 pp
Construction	0,11	0,09	0,09	0,10	-1 pp	1.1 pp	0 pp	2.2 pp
wholesale and retail trade	0,17	0,17	0,16	0,18	1.1 pp	1 pp	-1.2 pp	-0.1 pp
hotels and restaurants	0,05	0,06	0,05	0,06	1.2 pp	-0.1 pp	-1.8 pp	0.6 pp
transport and storage and communication	0,05	0,05	0,04	0,05	-0.9 pp	-0.6 pp	-0.5 pp	0 pp
financial intermediation	0,01	0,02	0,02	0,02	0.4 pp	-0.4 pp	0.1 pp	-0.3 pp
real estate, renting and business activities	0,01	0,03	0,05	0,07	5.4 pp	4.3 pp	2.6 pp	0.6 pp
public admin and defence; comp. s. security	0,05	0,07	0,08	0,09	3.6 pp	1.9 pp	1.5 pp	-0.1 pp
Education	0,04	0,05	0,07	0,07	2.8 pp	1.4 pp	1.2 pp	0.1 pp
health and social work	0,04	0,05	0,06	0,07	3.1 pp	1.9 pp	1 pp	0.3 pp
other community, social and personal services	0,02	0,02	0,03	0,03	1.4 pp	0.8 pp	0.5 pp	0.1 pp
private households with employed persons	0,02	0,03	0,04	0,03	1.3 pp	0.6 pp	0.6 pp	-0.2 pp
total services	0,47	0,55	0,60	0,66	19.5 pp	10.9 pp	4 pp	0.9 pp

Source: EU Klems

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