



BANK ĊENTRALI TA' MALTA  
EUROSISTEMA  
CENTRAL BANK OF MALTA

# EVALUATING THE DIVERSIFICATION OF THE MALTESE ECONOMY

## BOX 1: EVALUATING THE DIVERSIFICATION OF THE MALTESE ECONOMY<sup>1</sup>

The Maltese economy has evolved very rapidly in recent years and has had a much better performance than neighbouring economies. This has coincided with a large decline in the share of industrial activity and the emergence of a substantial number of new service operators. This article explores the policy question as to whether this development could be long lasting and attempts to assess whether the shift has made the Maltese economy less or more diversified, and to consider the potential main macroeconomic effects.

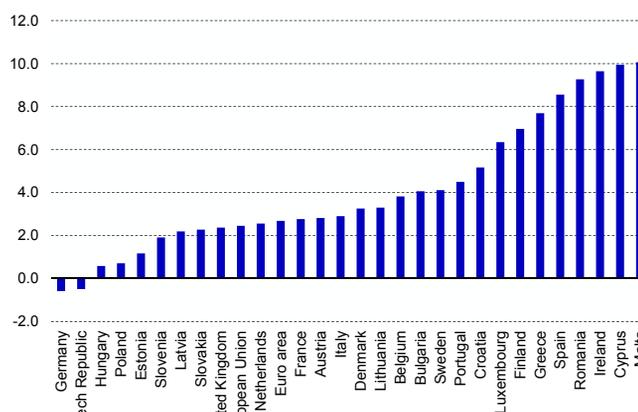
### The shift to services in Malta

Malta has traditionally had a large services sector, as the presence of an established British naval base prior to 1979 necessitated several ancillary services and resulted in a very good infrastructure, particularly for transshipment and trade. Since 1980 the share of agriculture and industry in the Maltese economy has halved.<sup>2</sup> In contrast, the relative importance of services has surged to over 80%.

The shift towards a greater share of services in overall economic output was particularly sharp after EU accession. In the 25 years preceding EU accession, the relative share of services grew by 12 percentage points. However, nearly the same rise was experienced in just a decade after EU accession. In fact, whereas in 2004 Malta had the seventh highest share of services in its GVA among EU countries, by 2014 it had the third highest. The rise in the share of services between 2004 and 2014 was the highest across EU countries (see Chart 1).

Besides tourism, the services sector has expanded to include activities, such as specialised forms of tourism, namely language schools and dive centres, maritime activity, professional services, back-office administration, information technology, and gambling and betting. Consequently, the share of tourism workers out of total service employment has declined from 11.5% in the 1980s to around 8% in 2014, despite the fact that, in absolute numbers, employment in tourism rose by half during the last 30 years. Computer programming, professional services and administrative support accounted for a quarter of the increase in value added since EU accession. This is quite an achievement, given that in 2004 these sectors amounted to just 9% of value added. In ten years, the value added of computer programming rose to more than four times its initial value. Moreover, during the same time, the arts, entertainment and recreation

**Chart 1**  
CHANGE IN RELATIVE SIZE OF SERVICES SECTOR: 2004–2014  
(per cent of total gross value added in each economy)



Source: Authors' calculations using Eurostat data.

<sup>1</sup> Prepared by Dr Aaron G. Grech and Ms Sandra Zerafa. Dr Grech heads the Bank's Modelling and Research Department, while Ms Zerafa is a senior research economist within the same department. This Box summarises the main findings of Grech, A.G., "The diversification of the Maltese economy", *Policy Note*, Central Bank of Malta, September 2015. Any errors, as well as the views expressed in this note, are the authors' sole responsibility.

<sup>2</sup> See Grech, A. G., "The evolution of the Maltese economy since independence", *Working Paper WP/05/2015*, Central Bank of Malta.

sector, which includes gambling and betting, saw its share in value added increase from 2.1% to 9.5%.

The decline in the share of industry does not mean that, in absolute terms, its output fell. Industry's value added, in fact, rose between 2004 and 2014 by 11.5% in nominal terms. The transformation of the Maltese economy is the result of the appearance of a large swathe of new service operators rather than the disappearance of existing industrial operators.<sup>3</sup> There are some industrial sub-sectors, such as the manufacturing of pharmaceutical products, which have increased their economic share. Even agriculture and fisheries witnessed considerable growth in value added, up by 45%, despite having their share in the national economy halve in the last two decades. The decline in the relative employment share for industry is noticeably more pronounced than in its relative value added share, suggesting that, over time, firms in this sector have become more capital intensive and increased productivity. The intra-sectoral composition of activity also changed substantially. For instance, whereas in the 1980s those employed in the manufacture of clothing and footwear constituted 17% of all industrial workers, in 2014 their share had fallen to 4%.

### **Job-rich economic growth leading to a more diversified economy**

Between 1995 and 2004, total GVA in the Maltese economy grew by €1.7 billion, or 69%. In the following decade, GVA expanded by €2.8 billion, or 66%. The trend in employment growth was quite different, with the expansion in the first period being just 3.1% (or 4,510 jobs) as against 26.0% (or 38,930 jobs) in the following decade.

In the decade before EU accession, the five sectors that contributed the largest absolute increase in GVA were construction, real estate, financial services, education and public administration. Together, they made up 39% of the increase in value added and almost the entire rise in employment. In the following decade, the five largest sectoral contributions came from financial services, computer programming, legal and accounting services, gambling and betting, and education. Together, they made up 46% of the growth in value added and around 43% of the rise in employment. Sectors which until 2004 were quite small, such as computer programming, and gambling and betting, saw their value added grow by five to six times by 2014, but increased their employment by less than 80%. Thus, for instance, the employment share in computer programming rose from 0.9% to 2.1% between 1995 and 2014, while its GVA share increased from 1.1% to 3.2%.

A number of indicators suggest that the Maltese economy has become more diversified over time and that the recent expansion of services has not led to an increase in the concentration of economic activity (see Table 1). Both the median share in value added and the standard deviation of the various shares have declined over these two decades. The size of the largest five sectors has gone from 43.2% of GVA in 1995 to 40.4% in 2014, primarily because the largest sector, wholesale and retail, has seen its share drop to 11.1%, down from 15.3% two decades earlier. The Herfindahl index – a standard measure used to study the concentration of activity – has declined since 1995.<sup>4</sup> Economic sectors in Malta also have a low and declining normalised Herfindahl index, implying that GVA is fairly equally distributed among them.<sup>5</sup>

The level of the Herfindahl index for Malta compares well with the situation observed across the euro area (EA). At 0.057, this index is only slightly higher than the 0.053 for the EA. More important, the trend of the diversification indicators for Malta is contrary to the trend observed using EA data. Across

<sup>3</sup> Grech, A.G. and Zerafa, S, "Structural changes in the Maltese economy", *Annual Report*, Central Bank of Malta, 2014.

<sup>4</sup> The Herfindahl index is calculated as the summation of the squared market shares. For instance, if there are three firms with equal share, the index gives a value of 0.33 ( $0.33^2 + 0.33^2 + 0.33^2$ ), while if two of these firms each control 45% and the third just 10%, the index gives a value of 0.42. A higher value implies more concentration.

<sup>5</sup> While the Herfindahl index ranges from  $1/(\text{number of shares})$  to 1, the normalised index ranges from 0 to 1 and is used to study how equally distributed market shares are.

**Table 1**  
**DIVERSIFICATION MEASURES BASED ON VALUE ADDED BREAKDOWN BY**  
**38 SECTORS**

	1995	2004	2014
Standard deviation	0.030	0.029	0.029
Coefficient of variation	115%	109%	109%
Size of largest sector	15.3%	13.1%	11.1%
Size of largest 5 sectors	43.2%	41.2%	40.4%
Median share	1.5%	1.5%	1.4%
Herfindahl index	0.060	0.057	0.057
Normalised Herfindahl index	0.035	0.031	0.031

Source: Authors' estimates using Eurostat data.

the EA, the Herfindahl index has risen from 0.049 in 2000 to 0.053 in 2013, while the size of the largest five sectors has expanded from 38.7% to 39.9% over the same period.

If one were to use sectoral employment rather than value added, the diversification indicators also show reduced concentration and more convergence in the size of sectors. However, while the GVA-based indicators show a consistent rise in diversification over the two decades, the employment-based indicators suggest that, in the decade before EU accession, sectoral employment had become more concentrated. This possibly reflects the fact that during that period a number of sectors laid off workers during their restructuring process, and overall job growth was quite muted. In contrast, the following decade saw a reversal of this trend and resulted in a broader-based recovery in employment.

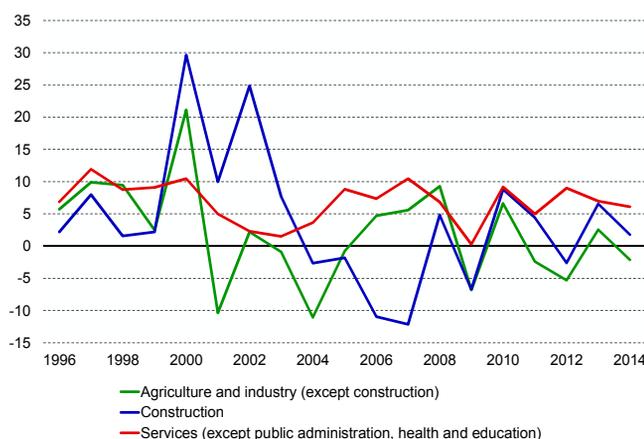
#### **The main macroeconomic effects of greater diversification**

The job-rich economic growth of the first decade post-EU accession was partly driven by the expansion of a number of labour-intensive service sectors. On the one hand, this reflected social changes, such as the ageing transition and the rising female labour participation rate. This meant that certain activities that had been previously conducted informally by housekeepers are now being serviced in the formal economy. Thus, whereas in 2004 there were about 3,300 workers in residential care services, by 2014 they had more than doubled to 6,700. This constituted a tenth of all employment growth, and was slightly higher than the increase observed in the gambling and betting sector. Another noticeable change during this decade, which has resulted in a spike in employment, was the rise in outsourcing. Over a tenth of the overall increase in employment between 2004 and 2014 occurred in security, office administration and support services. This could explain some of the decline in manufacturing and public service employment, as these sectors outsourced their activities, whereas in the past the tasks would have been carried out in-house. A significant part of the rise in employment in two main sectors, which include residential care services, and security, office administration and support services, went to migrants. These two sectors accounted for more than a fifth of the increase in the number of foreign workers observed during this decade.

The expansion of these labour-intensive service activities has played an important role in the apparent growth in unit labour costs observed in recent years, despite a relatively low rise in average compensation. At the same time, the high value added service sectors, such as legal and accounting, tend to be mostly reliant on human, rather than physical capital. This explains why the economy has continued to grow rapidly despite a decline in the investment ratio compared with the mid-1990s. These trends may complicate economic analysis. For example, it becomes harder to use unit labour costs to assess competitiveness, as the former are partly driven by these structural changes. It is also more difficult to determine potential output by focusing just on physical investment and employment, as the new sectors are able to generate more output using fewer resources.

Besides affecting the level of potential output, the diversification of the Maltese economy and the shift towards services could have significant implications on the extent of cyclical fluctuations. Chart 2 shows the year-on-year change in GVA in manufacturing, construction and services. Figures for the latter exclude public administration, health and education, as these activities tend to be relatively stable as they are mostly financed by Government. As can be seen, the emergence of the new service sectors has done little to affect the volatility of the change in the value added of the services sector. If anything, the standard deviation of services' value added changes has moderated since 2005. In contrast, manufacturing and construction continued to exhibit quite volatile changes in their value added. Over the whole period, the standard deviation of relative changes in industrial value added was more than three times higher than that exhibited by services. This suggests that the increased diversification of the Maltese economy has smoothened the economic cycle.

**Chart 2**  
**GROWTH IN VALUE ADDED BY BROAD ECONOMIC SECTOR**  
*(per cent)*



Source: Authors' calculations using Eurostat data.