

Industry Outputs Arising from the Implementation of the Medium-Term Fiscal Strategy 2013-2016 for the Greek Economy

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The aim of this paper is to estimate the output vector of the Greek economy for the year 2015 based on the implementation of the Medium-Term Fiscal Strategy 2013-2016, and to make a comparative presentation of the output vectors for the years 2010 and 2015. The 2015 output vector is estimated using two different estimating methods, the first based on the Symmetric Input-Output Table (SIOT) and the second on the Supply and Use Table (SUT). The results show an increase in output of most industries and changes in the composition of sectoral outputs of the Greek economy. However, the available empirical evidence is in stark contrast to these estimates.

INTRODUCTION

In the Medium-Term Fiscal Strategy 2013-2016 (MTFS 2013-2016) for the Greek economy, a number of assumptions are made relating to the size of imports, exports, private consumption, government consumption and total investment for the period in question, which may be considered as constituting final demand for each respective year. Using data from MTFS 2013-2016, the aim of this paper is to estimate the output vector of the Greek economy for the year 2015.¹ A comparison is then made between the output vectors for 2010 and 2015, not only for the economy as a whole but also in terms of changes in output at an industry level. To assess the possibility of different results, the 2015 output vector is estimated using two different methods or estimations, the first based on the Symmetric Input-Output Table (SIOT) and the second on the Supply and Use Table (SUT) (see Eurostat, 2008; Miller and Blair, 2009).

The purpose of these estimates is to enable an assessment of the changes in the output of industries which would take place in the Greek

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economy if MTFS 2013-2016 was implemented. As evidenced by the relevant literature, this assessment does not appear to have been made by the institutional authorities (see Hellenic Republic Ministry of Finance, 2012; Bank of Greece, 2012).

The remainder of the paper is structured as follows. Section 2 describes the methodological approach adopted. Section 3 presents and evaluates the results. Finally, Section 4 concludes.

METHODOLOGICAL APPROACH

The estimation of the 2015 output vector is based on the technical characteristics of the input-output table for 2010. More specifically, we used the data on technical coefficients which derive from the 2010 table and in so doing we assume that technology has not changed between 2010 and 2015.² Furthermore, the MTFS 2013-2016 data were treated as exogenously given and used to calculate the final demand vector for 2015. As is well known, final demand in the input-output table that we use comprises private consumption (Households and Non-Profit Institutions Serving Households), government consumption, total investment, exports and imports of goods and services. Each of these components represents a share (percentage) of final demand in the input-output table for 2010, and this share is assumed to remain constant for all the years of our analysis.

In Table 1 we show the data pertaining to MTFS 2013-2016.³ On the basis of these changes, we calculate the main aggregate variables of the Greek economy, and the figures are displayed in Table 2 (using the year 2012 as our base year).

Table 1
Macroeconomic data of MTFS 2013-2016

Main aggregates of the Greek economy (% annual change, constant prices of the previous year) – MTFS 2013-2016

| | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|--------|-------|-------|--------------|-------|
| GDP, constant prices | -6.5% | -4.5% | 0.2% | 2.5% | 3.5% |
| Private consumption (Households + NPISH) | -7.7% | -7.0% | -1.6% | 1.3% | 2.3% |
| Government consumption | -6.2% | -7.2% | -3.1% | -1.9% | -3.0% |
| Total Investment | -15.0% | -3.7% | 3.0% | 7.0% | 10.0% |
| Exports of goods and services | 0.0% | 2.6% | 4.5% | 5.3% | 6.0% |
| Imports of goods and services | -10.1% | -5.2% | -0.4% | 2.0% | 3.1% |

Table 2
Main aggregates of the Greek economy (constant prices of the previous year, in € million) - MTFS 2013-2016

| | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---------|---------|---------|----------------|---------|
| GDP | 195,200 | 186,400 | 186,800 | 191,500 | 198,200 |
| Private consumption (Households + NPISH) | 141,674 | 131,756 | 129,648 | 131,334 | 134,354 |
| Government consumption | 34,713 | 32,214 | 31,215 | 30,622 | 29,703 |
| Total Investment | 25,520 | 24,576 | 25,313 | 27,085 | 29,794 |
| Exports of goods and services | 50,975 | 52,301 | 54,654 | 57,551 | 61,004 |
| Imports of goods and services | 59,603 | 56,503 | 56,277 | 57,403 | 59,182 |

The 2015 output vector is estimated on the basis of the following two methods:

(i) SIOT: We can express the input-output model as follows:

$$\mathbf{x} = \mathbf{Ax} + \mathbf{y} \quad (1)$$

where \mathbf{A} denotes the matrix of direct technical coefficients, \mathbf{x} the vector of outputs, and \mathbf{y} the vector of final demand (according to MTFS 2013-2016). Solving equation (1) for \mathbf{x} , we obtain:

$$\mathbf{x} = [\mathbf{I} - \mathbf{A}]^{-1} \mathbf{y} \quad (2)$$

where $[\mathbf{I} - \mathbf{A}]^{-1}$ is the Leontief inverse.

(ii) SUT: We can express the input-output model as follows:

$$\mathbf{Mz} = \mathbf{Uz} + \mathbf{y}$$

or

$$\mathbf{z} = [\mathbf{M} - \mathbf{U}]^{-1} \mathbf{y}$$

and

$$\mathbf{x} \equiv \mathbf{Mz} = \mathbf{M}[\mathbf{M} - \mathbf{U}]^{-1} \mathbf{y} \quad (3)$$

where \mathbf{M} denotes the Make matrix, \mathbf{U} the Use matrix, and \mathbf{z} the vector of activity levels.

RESULTS

The results of our analysis are summarized in Tables A.1 to A.4 (see the Appendix):

(i) Table A.1 shows the output of each sector in absolute numbers and as percentages, on the basis of both the SIOT and SUT for 2010 and 2015.

- (ii) Table A.2 ranks the main industries on the basis of their outputs.
- (iii) Table A.3 shows the main industries on the basis of their outputs at basic prices (in € million).
- (iv) Table A.4 shows a comparison of the output vectors on the basis of their different methods of estimation.

From these tables we may conclude that:

(i) Using the SIOT estimation, the total output increases from 351,385 to 453,886. The shares of Mining, Manufacturing and Energy increase, while those of Agriculture, Forestry & Fishing, Construction and Services decrease. Using the SUT estimation, the increase in total output is far greater, rising from 351,385 to 537,621. The shares of Mining, Manufacturing and Energy increase, while those of Agriculture, Forestry & Fishing, Construction and Services decrease.

(ii) The SIOT estimation results in remarkable changes in the industry rankings, the most important of which are the following: The third biggest industry in 2010 was Public Administration and Defense services, while in 2015 it is Water Transport services. Public Administration falls in 7th place. In 2010, Education services held 11th place, falling to 17th in 2015. Water Transport services, ranked 7th in 2010, are projected to climb to 3rd place in 2015. Mining & Quarrying, placed 19th in 2010, is projected to climb to 9th in 2015. Basic metals, Warehousing and support services for transportation and Mining & Quarrying occupied the three bottom places in 2010, while in 2015 the corresponding rankings were held by Education, Telecommunication and Wholesale and retail trade and repair services of motor vehicles and motorcycles. However, the main finding is the shrinking of the public sector industries. According to the SUT estimation, the three largest industries in 2005 are Basic metals, Crude petroleum, Mining & Quarrying. Real Estate falls in 4th place. Public Administration drops from 2nd to 8th place. Generally speaking, the public sector industries fall in the rankings, while the Manufacturing industries rise.

(iii) According to the SIOT estimation, the output of 11 main industries increases. Certain main industries, such as Wholesale trade, Food products and Water Transport Services grow, while other main industries, such as Construction, Real estate, Public administration, Education and Health contract. According to the SUT estimation, the output of 10 main industries increases. A number of industries such as Mining & Quarrying, Basic metals, Warehousing and support services for transportation show significant growth.

(iv) According to the SIOT estimation of the output vectors, 54 industries grow. According to the SUT estimation of the output vectors, 46 industries grow. In the case of Repair and installation services of

machinery and equipment, the negativity of the activity level indicates that the economic system, as shaped on the basis of our assumptions, is not capable of generating the projected vector of final demand.⁴

CONCLUDING REMARKS

On the basis of the implementation of the Medium-Term Fiscal Strategy 2013-2016 and input-output data of the Greek economy for the year 2010, this paper estimated the system output vector for the year 2015. The main conclusion is that both SIOT and SUT estimations result in an increase in the output levels in most industries and changes in the composition of their output. Another salient feature of our analysis is the reranking of Greek main industries during the examined period, while the public sector industries suffered a spectacular shrinkage.

Turning now to the actual official figures for the same aggregate real variables of the Greek economy, as reported by the National Statistical Service (ELSTAT), the total (private and public) final consumption estimated of constant prices of the previous year has declined. The same is true for total investment, while the value of imports fell and that of exports rose slightly. As for gross value added of the total economy, we observe a fall, and this fact is in stark contrast to the estimates of industry outputs which were made on the basis of the MTFS assumptions. Such a divergence from reality (in both sign and size) calls into question the official usually optimistic predictions.

Acknowledgements

We are indebted to an anonymous referee and the Editors of this journal for helpful comments, criticisms and suggestions on earlier versions of this paper.

Notes

1. Here by "outputs" we mean the row of "outputs at basic prices" as this appears in the input-output table of the year 2010.
2. In input-output analysis it is realistic to assume that the technical coefficients remain fixed or at most changes so slowly that does not alter qualitatively the result of the analysis. For the purposes of this study, we use the most recent input-output table, which for the Greek economy is available for the year 2010 (and provided via the EUROSTAT website, <http://epp.eurostat.ec.europa.eu>).
3. [http://www.hellenicparliament.gr/UserFiles/2f026f42-950c-4efc-b950-340c4fb76a24/%CE%88%CE%B3%CE%B3%CF%81%CE%B1%CF%86%CE%BF%20\(%CE%9C%CE%95%CE%A3%CE%9F%CE%A0%CE%A1%CE%9F%CE%98%CE%95%CE%A3%CE%9C%CE%9F_2013\).pdf](http://www.hellenicparliament.gr/UserFiles/2f026f42-950c-4efc-b950-340c4fb76a24/%CE%88%CE%B3%CE%B3%CF%81%CE%B1%CF%86%CE%BF%20(%CE%9C%CE%95%CE%A3%CE%9F%CE%A0%CE%A1%CE%9F%CE%98%CE%95%CE%A3%CE%9C%CE%9F_2013).pdf)

4. There are industries whose vector of activity levels is greater than 1 but whose output declines, as in the case of Telecommunications, while there are industries in which the opposite applies, such as Construction.

References

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APPENDIX

Table A.1
Output of sectors - (SIOT methodology)

| 2010 € million | | 2015 € million | | | |
|----------------|--------|---|---------|--------|--|
| 10,910 | 3.10% | Agriculture, Products of forestry, Fishing, | 13,197 | 2.91% | Agriculture, Products of forestry Fishing, |
| 1,268 | 0.36% | Mining-Quarrying | 16,649 | 3.67% | Mining - Quarrying |
| 70,338 | 20.02% | Manufacturing, Energy | 128,533 | 28.32% | Manufacturing, Energy |
| 22,346 | 6.36% | Construction | 21,217 | 4.67% | Construction |
| 246,523 | 70.16% | Services | 274,290 | 60.43% | Services |
| 351,385 | | Total | 453,886 | | Total |

Output of sectors - (SUT methodology)

| 2010 € million | | 2015 € million | | | |
|----------------|--------|---|---------|--------|--|
| 12,216 | 3.48% | Agriculture, Products of forestry, Fishing, | 17,217 | 3.20% | Agriculture, Products of forestry Fishing, |
| 1,320 | 0.38% | Mining - Quarrying | 28,593 | 5.32% | Mining - Quarrying |
| 67,130 | 19.10% | Manufacturing, Energy | 215,974 | 40.17% | Manufacturing, Energy |
| 21,769 | 6.19% | Construction | 21,460 | 3.99% | Construction |
| 248,950 | 70.85% | Services | 254,377 | 47.32% | Services |
| 351,385 | | Total | 537,621 | | Total |

Table A.2
Main industry rankings based on output

| | | SUT methodology | | |
|---|---|--|---|--|
| | | 2010 | 2015 | 2015 |
| | | SUT methodology | | |
| 1 | Real estate services | Real estate services | Real estate services | Basic metals |
| 2 | Wholesale trade services, except of motor vehicles and motorcycles | Wholesale trade services, except of motor vehicles and motorcycles | Public administration and defense services; compulsory social security services | Crude petroleum and natural gas; services incidental to oil and gas extraction excluding surveying |
| 3 | Public administration and defense services; compulsory social security services | Water transport services | Construction work | Mining and quarrying |
| 4 | Construction work | Crude petroleum and natural gas; services incidental to oil and gas extraction excluding surveying | Wholesale trade services, except of motor vehicles and motorcycles | Real estate services |
| 5 | Accommodation and food services | Construction work | Accommodation and food services | Food products and beverages. Tobacco products |
| 6 | Food products and beverages. Tobacco products | Food products and beverages. Tobacco products | Food products and beverages. Tobacco products | Water transport services |
| 7 | Water transport services | Public administration and defense services; compulsory social security services | Water transport services | Construction work |

contd. table

| | | | | |
|----|--|--|--|--|
| 8 | Health and social work services | Accommodation and food services | Retail trade services, except of motor vehicles and motorcycles | Public administration and defense services; compulsory social security services |
| 9 | Retail trade services, except of motor vehicles and motorcycles | Mining and quarrying | Health and social work services | Accommodation and food services |
| 10 | Crude petroleum and natural gas; services incidental to oil and gas extraction excluding surveying | Retail trade services, except of motor vehicles and motorcycles | Crude petroleum and natural gas; services incidental to oil and gas extraction excluding surveying | Electricity, gas, steam and air-conditioning |
| 11 | Education services | Warehousing and support services for transportation | Education services | Products of agriculture, hunting and related services |
| 12 | Financial intermediation services, except insurance and pension funding services | Financial intermediation services, except insurance and pension funding services | Financial intermediation services, except insurance and pension funding services | Wholesale trade services, except of motor vehicles and motorcycles |
| 13 | Products of agriculture, hunting and related services | Basic metals | Products of agriculture, hunting and related services | Financial intermediation services, except insurance and pension funding services |
| 14 | Wholesale and retail trade and repair services of motor vehicles and motorcycles | Electricity, gas, steam and air-conditioning | Electricity, gas, steam and air-conditioning | Warehousing and support services for transportation |
| 15 | Electricity, gas, steam and air-conditioning | Products of agriculture, hunting and related services | Telecommunications services | Health and social work services |

contd. table

| | | | | |
|----|---|--|--|--|
| 16 | Telecommunications services | Health and social work services | Wholesale and retail trade and repair services of motor vehicles and motorcycles | Education services |
| 17 | Basic metals | Education services | Basic metals | Telecommunications services |
| 18 | Warehousing and support services for transportation | Telecommunications services | Warehousing and support services for transportation | Retail trade services, except of motor vehicles and motorcycles |
| 19 | Mining and quarrying | Wholesale and retail trade and repair services of motor vehicles and motorcycles | Mining and quarrying | Wholesale and retail trade and repair services of motor vehicles and motorcycles |

Table A.3
Main industries based on output at basic prices (in million Euros)

| | <i>SIOT estimation</i> | | <i>SUT estimation</i> | |
|--|------------------------------------|------------------------------------|------------------------------------|------------------------------------|
| | <i>Output at basic prices 2010</i> | <i>Output at basic prices 2015</i> | <i>Output at basic prices 2010</i> | <i>Output at basic prices 2015</i> |
| Construction work | 22,346 | 21,217 | 21,761 | 21,460 |
| Wholesale and retail trade and repair services of motor vehicles and motorcycles | 6,760 | 6,310 | 7,143 | 4,031 |
| Wholesale trade and commission trade services, except of motor vehicles and motorcycles | 25,369 | 27,698 | 24,544 | 14,831 |
| Real estate services | 31,707 | 29,455 | 27,854 | 28,535 |
| Public administration and defense services; compulsory social security services | 23,704 | 18,280 | 25,829 | 18,252 |
| Accommodation and food services | 20,863 | 16,922 | 21,112 | 16,923 |
| Food products and beverages, Tobacco products | 17,704 | 20,852 | 16,292 | 23,944 |
| Water transport services | 15,182 | 22,300 | 15,872 | 22,166 |
| Retail trade services, except of motor vehicles and motorcycles | 13,175 | 14,284 | 13,786 | 7,891 |
| Health and social work services | 14,436 | 10,997 | 13,694 | 11,016 |
| Education services | 11,761 | 9,472 | 11,888 | 9,526 |
| Financial intermediation services, except insurance and pension funding services | 10,253 | 13,702 | 10,428 | 13,741 |
| Crude petroleum and natural gas; services incidental to oil and gas extraction excluding surveying | 13,392 | 22,867 | 13,542 | 35,174 |
| Products of agriculture, hunting and related services | 9,578 | 11,530 | 10,961 | 15,026 |
| Telecommunications services | 8,166 | 9,293 | 8,785 | 9,662 |
| Electricity, gas, steam and air-conditioning | 8,260 | 11,751 | 8,321 | 16,355 |
| Basic metals | 4,696 | 12,018 | 4,950 | 36,876 |
| Warehousing and support services for transportation | 2,676 | 13,780 | 3,316 | 13,021 |
| Mining and quarrying | 1,268 | 16,649 | 1,320 | 28,593 |
| Total | 261,296 | 309,377 | 261,398 | 347,023 |
| Percentage of output of the main industries to the total output vector | 74.36% | 68.16% | 74.39% | 64.55% |

Table A.4
Comparison of output vectors based on the different methods of estimation

| <i>Industries</i> | <i>Output vector 2015 (SUT) € million</i> | <i>Vector of activity levels 2015 (SUT)</i> | <i>Output vector 2010 (SUT) € million</i> | <i>Output vector 2010 (SIOT) € million</i> | <i>Output vector 2015 (SIOT) € million</i> |
|---|---|---|---|--|--|
| Products of agriculture, hunting and related services | 15,026 | 1.57 | 10,961 | 9,578 | 11,530 |
| Products of forestry, logging and related services | 535 | 5.85 | 76 | 134 | 206 |
| Fish and other fishing products; aquaculture products; support services to fishing | 1,656 | 1.40 | 1,179 | 1,198 | 1,462 |
| Mining and quarrying | 28,593 | 22.55 | 1,320 | 1,268 | 16,649 |
| Food products, beverages and tobacco products | 23,944 | 1.39 | 16,292 | 17,004 | 20,852 |
| Textiles, wearing apparel and leather products | 9,490 | 5.31 | 2,483 | 2,445 | 6,613 |
| Wood and of products of wood and cork, except furniture; articles of straw and plaiting materials | 12,650 | 8.91 | 1,493 | 1,479 | 3,142 |
| Paper and paper products | 4,164 | 3.66 | 1,094 | 1,140 | 2,330 |
| Printing and recording services | 1,677 | 1.51 | 1,190 | 1,071 | 1,167 |
| Coke and refined petroleum products | 35,174 | 2.60 | 13,542 | 13,392 | 22,867 |
| Chemicals and chemical products | 20,479 | 11.13 | 2,150 | 1,888 | 8,539 |
| Basic pharmaceutical products and pharmaceutical preparations | 6,314 | 3.70 | 1,765 | 1,642 | 5,198 |
| Rubber and plastics products | 7,373 | 4.81 | 1,573 | 1,545 | 3,706 |
| Other non-metallic mineral products | 5,106 | 1.77 | 2,968 | 2,827 | 3,976 |
| Basic metals | 36,876 | 7.85 | 4,950 | 4,696 | 12,018 |

contd. table

| <i>Industries</i> | Output vector 2015 (SUT) € million | Vector of activity levels 2015 (SUT) | Output vector 2010 (SUT) € million | Output vector 2010 (SIOT) € million | Output vector 2015 (SIOT) € million |
|---|--|--|---|--|--|
| Fabricated metal products, except machinery and equipment | 10,350 | 13.77 | 4,230 | 4,196 | 6,727 |
| Computer, electronic and optical products | 2,564 | 13.91 | 242 | 179 | 2,352 |
| Electrical equipment | 4,274 | 3.11 | 1,242 | 1,183 | 3,258 |
| Machinery and equipment n.e.c. | 3,522 | 11.56 | 999 | 1,172 | 3,219 |
| Motor vehicles, trailers and semi-trailers | 3,103 | 11.50 | 304 | 345 | 1,968 |
| Other transport equipment | 5,472 | 37.15 | 485 | 331 | 5,146 |
| Furniture; other manufactured goods | 2,699 | 1.21 | 1,779 | 1,601 | 2,024 |
| Repair and installation services of machinery and equipment | 610 | -143.13 | 494 | 614 | 731 |
| Electricity, gas, steam and air-conditioning | 16,355 | 1.98 | 8,321 | 8,260 | 11,751 |
| Natural water; water treatment and supply services | 999 | 1.15 | 888 | 869 | 949 |
| Sewerage; waste collection, treatment and disposal activities; materials recovery; remediation activities and other waste management services | 2,789 | 1.10 | 2,453 | 2,458 | 3,290 |
| Constructions and construction works | 21,460 | 0.95 | 21,769 | 22,346 | 21,217 |
| Wholesale and retail trade and repair services of motor vehicles and motorcycles | 4,031 | 0.58 | 7,143 | 6,760 | 6,310 |
| Wholesale trade services, except of motor vehicles and motorcycles | 14,831 | 0.29 | 24,544 | 25,369 | 27,698 |
| Retail trade services, except of motor vehicles and motorcycles | 7,891 | 0.60 | 13,786 | 13,175 | 14,284 |

contd. table

| <i>Industries</i> | <i>Output vector 2015 (SUT) € million</i> | <i>Vector of activity levels 2015 (SUT)</i> | <i>Output vector 2010 (SUT) € million</i> | <i>Output vector 2010 (SIOT) € million</i> | <i>Output vector 2015 (SIOT) € million</i> |
|---|---|---|---|--|--|
| Land transport services and transport services via pipelines | 8,212 | 0.79 | 6,997 | 6,776 | 7,869 |
| Water transport services | 22,166 | 1.46 | 15,872 | 15,182 | 22,300 |
| Air transport services | 2,941 | 0.30 | 1,808 | 2,206 | 2,998 |
| Warehousing and support services for transportation | 13,021 | 5.48 | 3,316 | 2,676 | 13,780 |
| Postal and courier services | 2,596 | 1.72 | 1,566 | 1,514 | 2,203 |
| Accommodation and food services | 16,923 | 0.81 | 21,112 | 20,863 | 16,922 |
| Publishing services | 3,775 | 0.94 | 3,357 | 4,150 | 3,737 |
| Motion picture, video and television programme production services, sound recording and music publishing; programming and broadcasting services | 2,905 | 1.32 | 2,218 | 2,198 | 2,720 |
| Telecommunications services | 9,062 | 1.11 | 8,785 | 8,166 | 9,293 |
| Computer programming, consultancy and related services; information services | 1,955 | 1.04 | 1,885 | 1,883 | 1,945 |
| Financial services, except insurance and pension funding | 13,741 | 1.34 | 10,428 | 10,253 | 13,702 |
| Insurance, reinsurance and pension funding services, except compulsory social security | 3,538 | 2.03 | 1,747 | 1,766 | 2,936 |
| Services auxiliary to financial services and insurance services | 1,518 | 0.90 | 1,605 | 1,640 | 1,787 |
| Real estate services | 28,535 | 0.90 | 27,854 | 31,707 | 29,455 |
| Legal and accounting services; services of head offices; management consulting services | 13,862 | 2.09 | 6,760 | 6,660 | 10,498 |

contd. table

| <i>Industries</i> | <i>Output vector 2015 (SUT) € million</i> | <i>Vector of activity levels 2015 (SUT)</i> | <i>Output vector 2010 (SUT) € million</i> | <i>Output vector 2010 (SIOT) € million</i> | <i>Output vector 2015 (SIOT) € million</i> |
|---|---|---|---|--|--|
| Architectural and engineering services; technical testing and analysis services | 6,484 | 1.33 | 4,885 | 4,875 | 5,733 |
| Scientific research and development services | 840 | 1.16 | 823 | 724 | 813 |
| Advertising and market research services | 3,966 | 1.31 | 3,044 | 3,032 | 3,890 |
| Other professional, scientific and technical services; veterinary services | 2,448 | 1.25 | 1,944 | 1,956 | 2,575 |
| Rental and leasing services | 3,135 | 2.40 | 1,189 | 1,320 | 2,503 |
| Employment services | 289 | 1.70 | 170 | 170 | 242 |
| Travel agency, tour operator and other reservation services and related services | 1,665 | 0.93 | 1,671 | 1,692 | 1,995 |
| Security and investigation services; services to buildings and landscape; office administrative, office support and other business support services | 9,433 | 1.69 | 4,580 | 6,178 | 8,510 |
| Public administration and defense services; compulsory social security services | 18,252 | 0.77 | 25,829 | 23,704 | 18,280 |
| Education services | 9,526 | 0.81 | 11,888 | 11,761 | 9,472 |
| Human health services | 11,018 | 0.82 | 13,694 | 13,436 | 10,997 |
| Social work services | 697 | 0.66 | 1,063 | 1,054 | 690 |

contd. table

| <i>Industries</i> | <i>Output vector 2015 (SUT) € million</i> | <i>Vector of activity levels 2015 (SUT)</i> | <i>Output vector 2010 (SUT) € million</i> | <i>Output vector 2010 (SIOT) € million</i> | <i>Output vector 2015 (SIOT) € million</i> |
|--|---|---|---|--|--|
| Creative, arts and entertainment services; library, archive, museum and other cultural services; gambling and betting services | 4,716 | 1.20 | 3,921 | 3,938 | 4,611 |
| Sporting services and amusement and recreation services | 754 | 1.22 | 586 | 635 | 700 |
| Services furnished by membership organizations | 4,068 | 1.05 | 3,874 | 3,874 | 3,999 |
| Repair services of computers and personal and household goods | 1,459 | 1.40 | 1,034 | 1,034 | 1,431 |
| Other personal services | 2,838 | 1.01 | 2,787 | 2,816 | 2,841 |
| Services of households as employers; undifferentiated goods and services produced by households for own use | 1,282 | 0.93 | 1,379 | 1,379 | 1,282 |
| Total | 537,621 | | 351,385 | 351,385 | 453,886 |

