

# What is the financial sector's contribution to the Austrian economy?

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*Even though its contribution to the economy has decreased since the onset of the crisis, the Austrian financial sector still accounts for about 4% of value added and about 3% of the labor force. In rendering its services, the financial sector relies on inputs from the real economy, above all legal, accounting, head office and consulting services. In Austria, the domestic financial sector is still the main funding source for the real sector, even if its share has diminished over the past decade, with the decline having been somewhat more distinct on the asset side than on the liability side. For the financial sector, financing the real sector was becoming less relevant until the crisis hit.*

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A modern economy relies on a stable and efficient financial sector. The financial sector plays an essential role in mobilizing savings and determining the quantity and quality of investment. Companies, investors, savers and consumers rely on the availability of a broad range of financial services. However, the financial sector and the way it influences the economy at large has come under critical review of late.

This paper surveys the available evidence on the significance of the Austrian financial sector for the Austrian economy, highlighting how it evolved before the onset of the financial and economic crisis and how it has been evolving since. On the one hand, the contribution of the financial sector can be seen as the output generated by the individual firms of which the sector is made up. On the other hand, the financial sector can be analyzed by looking at the sector's function in mobilizing savings from savers or surplus units and allocating credit across space and time to real investment as well as liquidity provision.

In this article, the term *Austrian financial sector* refers to all institutions

and actors that are involved in providing financial services in Austria, such as banks, insurance companies, investment funds, pension funds as well as the stock exchange. The paper takes a comprehensive view of the financial sector and does not discuss specific segments and markets. Furthermore, the paper concentrates on the domestic economy, considering the financial sector's international activities only to the extent that they have immediate effects on the wider domestic economy. This "residential" perspective implies that we take all financial institutions operating in Austria into account, not only those in Austrian ownership. The data we look at are based on the national accounts framework (supplemented by current account data). In most cases (a notable exception being input-output data, which we use for cross-sectional analysis) they allow for a long-term perspective, reaching back to the mid-1990s, so that we can cover developments since Austria's accession to the EU in 1995 or the start of monetary union in 1999.

This paper is structured as follows: Section 1 sets the scene by providing a

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brief overview of the relevant literature on the relationship between the financial sector and economic development. In the two following sections, the contribution of the financial sector to the economy at large is analyzed from the two perspectives outlined above. Specifically, section 2 looks at the contribution to value added, and section 3 takes stock of the intermediation role of the financial sector. Section 4 discusses the benefits of having a domestic financial sector. Section 5 concludes.

### 1 Literature findings on the benefits and drawbacks of financial institutions and markets

In a world of perfect information and zero transaction costs, there would be no need for financial institutions. In the real world, the central contribution of the financial sector consists in reducing the agency problems caused by conflicting interests and information asymmetries that characterize the relations between investors and savers. These agency problems cause information costs (because of a lack of adequate access to information about the creditworthiness of prospective borrowers and the performance of current borrowers), transaction costs, as well as costs of risk, maturity, and volume transformation. By reducing such frictions, a well-functioning financial sector fosters economic activity. The financial sector positively affects the availability of funds for corporate investments by enabling households to deposit their savings in bank accounts, mutual funds or stocks (floated on the stock exchange by banks). Monitoring and screening prospective borrowers by the financial sector contributes to higher produc-

tivity of an economy by allocating capital to the most profitable investment opportunities.

However, the relationship between financial sector activity and economic activity remains an object of discussion.<sup>2</sup> While early empirical research on the nexus between financial sector size and economic growth found a positive, more or less linear relationship (King and Levine, 1993; Beck et al., 2000; De Gregorio and Guidotti, 1995 and Rajan and Zingales, 1998), these findings have been questioned in the wake of recent crises such as the burst of the dot-com bubble and in particular the crisis that started in 2008.

One strand of the literature focuses on the effects of a growing financial sector on macroeconomic performance. Several authors find that the higher the growth rate of financial sector value added relative to the non-financial sectors, the greater the probability of subsequent financial busts. Easterly et al. (2000) portend that additional financial development, which is reflected in higher debt ratios of the real sector and higher leverage of the financial sector, might aggravate cyclicity, as in a downturn banks are under pressure to cut the volume of loans granted to firms. Beck et al. (2012) relate this to the fact that the financial sector has extended its scope beyond traditional intermediation services to activities such as derivatives and trading.

Recent studies found not only diminishing marginal effects of the services provided by the financial sector but also evidence that in advanced economies the relationship may even (have) become negative at some point. Arcand et al. (2015) and Cecchetti and Kharroubi (2015) suggest that the rela-

<sup>2</sup> We refer here to the literature on the effects of the size of the financial sector but not of the structure of the financial system (e.g. the question of the relative merits of bank-based and market-based financial systems).

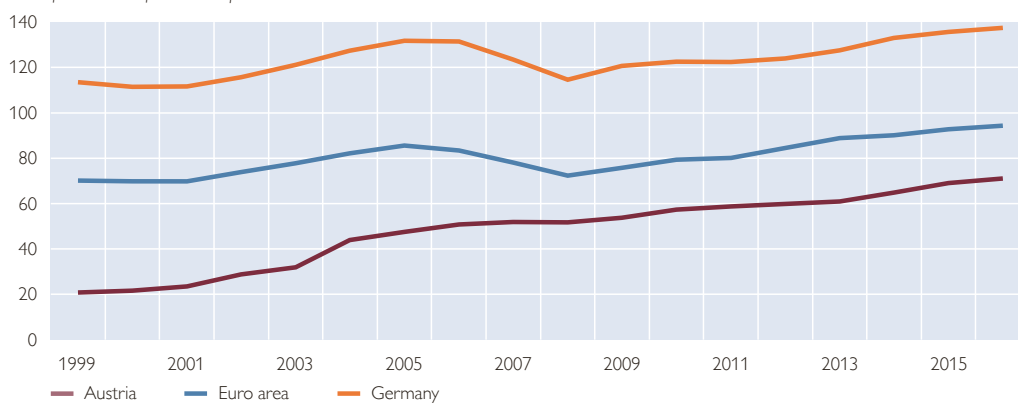
relationship between finance and growth resembles an inverted U-shape. Interestingly, despite using different methods and looking at different country groups and periods, all studies conclude that the turning point is private sector credit of about 90% to 100% of GDP.<sup>3</sup> Defining credit to the private sector (nonfinancial corporations and households) as loans granted and debt securities held by Austrian financial institutions, Austria has been above this threshold for more than 10 years. Philippon (2008) argues that the financial sector competes with other sectors for scarce resources, especially for skilled labor (“brain drain”).<sup>4</sup> A further aspect is that an expansion of financial intermediation might reflect a misallocation to less productive economic activities. In particular, additional mortgage lending often contributes less to

overall economic growth than credit to young innovative companies (Beck, 2015 and Coeuré, 2014). Credit to firms removes financing constraints, thus leading to higher investment and growth, whereas better credit to households is likely to result in a lower savings rate and may therefore be associated with lower economic growth.<sup>5</sup> These effects are particularly binding in a situation of restrictive loan supply, in which case credit to households would restrain credit to enterprises for investment, but less so in times of ample liquidity. Much of the increase in financial intermediation has been associated with mortgage loans, which – especially if used to purchase existing housing – contribute less to production. Expressed as a percentage of loans to nonfinancial corporations, housing loans by Austrian banks to domestic

Chart 1

### Lending for house purchase to households<sup>1</sup>

In % of loans to nonfinancial corporations



Source: OeNB.

<sup>1</sup> Including nonprofit institutions serving households.

<sup>3</sup> However, these studies are based on banking sector development indicators only and did not take into account the increasing role of other financial intermediaries and the capital markets in corporate finance.

<sup>4</sup> Yet, Ritzberger-Grünwald et al. (2016) show that at least for the banking sector this has not been the case in Austria.

<sup>5</sup> See Cournède and Denk (2014), Pagano et al. (2014) and the literature cited therein. Apart from the effect on the savings ratio that arises when households can spend more than without taking out a loan, residential construction typically features low productivity, so that an increase in the structure of investment towards residential construction reduces economic growth.

households rose from 21% in 1999 to 71% in 2016. However, in part this surge also reflects weak demand for corporate loans (see for example OeNB, 2016). While this increase was much more pronounced than in Germany and the euro area, the ratio is still markedly below that registered in Germany and the euro area as a whole (chart 1).

Another risk factor is the high interconnectedness among financial institutions (both within and across national borders). For example, many investment funds, pension funds and other financial institutions are subsidiaries of credit institutions. Banks provide financing to each other as well as to other financial intermediaries such as insurance corporations, pension funds and investment funds. The multiple layers of interconnection between the different institutions can be characterized as a complex, adaptive “system of systems” where the whole may behave differently than the sum of its parts, given dynamic properties such as amplifying feedback effects (Haldane, 2015). The interconnection of financial institutions can act as a transmitter of local shocks and disturbances to the financial system at large and thus pose a risk of contagion across sectors and beyond borders.

## 2 Role of the financial sector as producer and exporter of services

In this section we take up the first of the two perspectives on the macroeconomic relevance of the Austrian financial sector: we look at how the financial sector affects the economy by producing goods and (primarily) services used as final or as intermediate goods by

other sectors, by buying intermediate goods from other (domestic) enterprises and by exporting its services. Within the standard EU framework for the statistical classification of economic activities (NACE), the financial sector is categorized in section K (financial and insurance activities). It includes the subsectors financial service activities other than insurance and pension funding (in the following “banking”), insurance, reinsurance and pension funding other than compulsory social security “insurance” and activities auxiliary to financial services and insurance activities (“auxiliary”). Sector K covers a broad and comprehensive range of financial intermediaries as it includes also the stock exchange, brokers, and other activities related to financial services.

### 2.1 The financial sector's direct contribution to value added

Within the national accounts framework, the standard way of measuring a sector's contribution to the economy is gross value added, defined as the value of gross output that it produces less the value of its intermediate consumption. Besides income on intermediation (such as loan provision to consumers and businesses), value added also includes fees for advisory services, insurance premia etc. In 2015, gross value added by the financial sector amounted to EUR 12.8 billion or 4.2% of total value added.<sup>6</sup> Over the past two decades, this share has been on a downward trend; in 1995, the financial sector had contributed 5.6% to value added. This reduction, which took place in particular after the crisis hit, was in stark contrast to the development in the euro area where the financial sector's share in

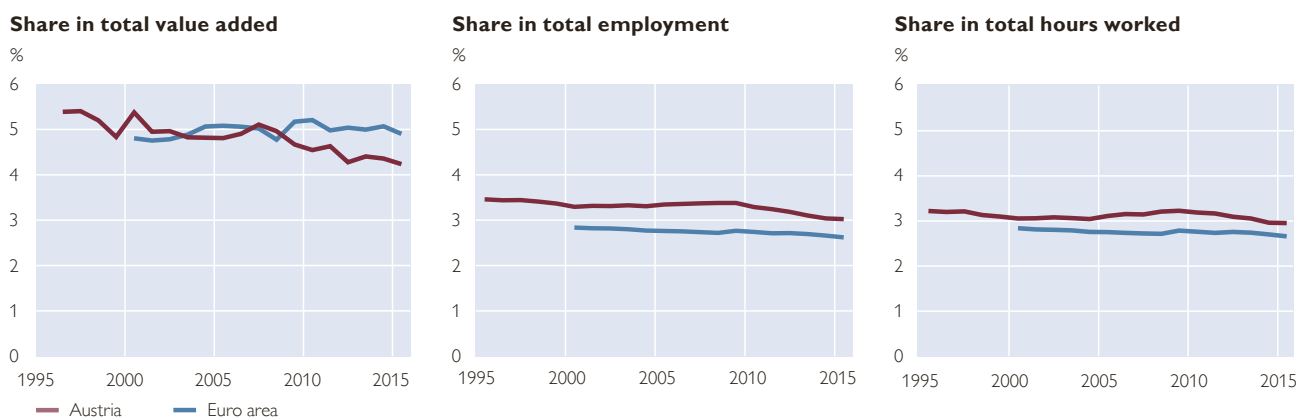
<sup>6</sup> Value added by Austrian banks only includes results of banks domiciled in Austria. The business activities of subsidiaries based abroad are included as capital income from the rest of the world.

value added has remained rather stable, fluctuating around 5% of value added. Hence, the Austrian financial sector's share in total value added fell below that of the euro area (see left-hand panel of chart 2). This is in line with the fact that financial activity growth in Austria has trailed corresponding growth in the euro area since the onset of the global financial crisis in 2008.<sup>7</sup> As – like in many other euro area countries – Austria's financial sector is strongly bank-based, the banking sector strongly affects the developments of the financial sector's value added.<sup>8</sup> In particular, this development might also reflect the way gross value added by the financial sector, and in particular the banking sector, is calculated. Banks' compensation for bearing risk constitutes part of their measured nominal

output. One could argue that investing capital in a risky asset is a fundamental feature of capital markets and not specific to the activities of banks. Conceptually, it is not clear to what extent purely risk-based income flows should represent bank output (Haldane et al. 2010).<sup>9</sup> Thus, on the one hand, national accounts most likely overestimate the financial sector's value added. On the other hand, the reduction of the financial sector's share in value added may also reflect less risk-taking by Austrian banks. However, the lower value added established for Austria's financial sector may also reflect, in purely mathematical terms, the fact that interest levels have been lower in Austria than in a number of other euro area countries since the crisis hit.<sup>10</sup>

Chart 2

### The financial sector's share



Source: Eurostat.

<sup>7</sup> The share of Austria in total financial assets of all euro area financial institutions fell after 2008, from 2.8% to 2.1%. Andreasch (2011) shows that there is a close relationship between financial assets and liabilities of the financial sector and its share in value added.

<sup>8</sup> In 2015, the share of banking in the financial sector's gross value added amounted to about 71% in Austria and 68% in the euro area.

<sup>9</sup> The effect could be substantial. Using an interest that takes into account the risk of default and any term premium, Basu et al. (2011) calculate that current methodologies overestimate imputed bank output by 45% for the U.S.A, and Colangelo and Inklaar (2012) that imputed bank output is overestimated by 28% to 54% for the euro area on average.

<sup>10</sup> Furthermore, the development of the financial sector's value added may have been influenced by special factors such as the expansion of the central banks' balance sheet in the course of the nonstandard policy measures or the different share (and the different statistical coverage) of captive financial institutions. These include holding companies and other institutions that only provide financial services to an enterprise (group).

The financial sector is an important employer, even though its share in total employment has come down over the past two decades.<sup>11</sup> In 2015, close to 130,000 persons or 3.0% of the total labor force were employed in the financial sector, according to national accounts data. The share of banking in financial sector employment was 59% in 2015 and thus somewhat lower than its share in value added, compared with about 21% employed by insurance firms and 8% by auxiliary activities. Since the financial sector's share in employment is considerably lower than in

output (chart 2), this implies that labor productivity in the financial sector is higher than in the total economy.<sup>12</sup> The financial sector's share in hours worked was about the same as in total employment, suggesting that on average working hours in the financial sector do not differ from those in the total economy.

## 2.2 Interdependencies between the financial sector and the wider economy

In this section, we analyze the interdependencies between financial sector services and the production of non-

Table 1

### Intermediate inputs used and supplied by the financial sector

	Used by the financial sector		Supplied by the financial sector to each sector
	<i>in % of total use of intermediate inputs by the financial sector</i>	<i>in % of total output produced by each sector</i>	<i>in % of total supply of intermediate inputs supplied by the financial sector</i>
<b>Domestic real sectors</b>			
Legal, accounting, head office, consulting	13.5	8.0	4.4
Advertising and market research	5.4	8.7	0.8
Computer programming	4.6	3.3	1.8
Security, building services, business support	3.8	5.7	0.9
Real estate	3.3	0.9	12.7
Publishing, broadcasting, telecommunication	3.3	2.6	1.0
Scientific, engineering and other services	2.6	1.3	2.2
Transport	2.5	0.7	2.5
Accommodation and food	1.4	0.6	2.3
Construction	1.2	0.3	3.3
Utilities	1.1	0.4	2.4
Manufacturing	0.9	0.0	12.7
Education, health, social work, arts, sports	0.9	0.1	7.0
Wholesale and retail trade	0.9	0.2	10.7
Personal services	0.5	0.7	1.0
Other	0.4	0.3	1.4
Agriculture and forestry	0.0	0.0	1.1
<b>Domestic financial sector</b>	40.2	17.9	31.8
Imports	13.6	x	x
Total	100	x	100

Source: Authors' calculations based on data from Statistics Austria.

Note: Data ordered by second column.

<sup>11</sup> For an overview of bank employment in Austria, see Ritzberger-Grünwald et al. (2016). As to the banking sector OeNB data show that the reduction in employment continued in 2016.

<sup>12</sup> However, to some extent this might also be the result of the potential overestimation of the sector's value added, given the uncertainties concerning its calculation (see above).



financial goods and services in the financial and nonfinancial corporate sectors. We use the most recent release of input-output tables, relating to 2013 (Statistics Austria, 2017). The input-output tables re-assign all activities that are characteristic of a sector to this sector and subtract the noncharacteristic activities (e.g. construction activities of the financial sector are assigned to the construction sector). Furthermore, the tables are derived under the assumption that a product has the same input structure regardless in which sector it is produced (commodity technology assumption; see Statistics Austria, 2017). Consequently, the activities assigned to a given sector may not be aligned with the framework underlying the previous sections. These aspects have to be taken into account when comparing the results in this section with those in other sections.

The left column of table 1 highlights that the financial sector uses intermediate goods from the domestic real sector, from the financial sector and from abroad (imports). The table shows a very high interconnectedness within the financial sector, as 40.2% of all intermediate goods used by the domestic financial sector stem from this very sector.<sup>13</sup> Inputs from the domestic real sector<sup>14</sup> amount to 46.2%, with the major intermediate inputs being attributable to legal, accounting, head office and consulting services (13.5%).<sup>15</sup> Other significant providers of intermediate inputs for the financial sector are advertising and market research services (5.4%); security, building services and business support; and com-

puter programming and transport (4.6%). Furthermore, the left column of table 1 suggests that the bulk of intermediate inputs used to produce financial sector services is supplied domestically, as only 13.6% are imports.

The middle column of table 1 indicates how important financial sector demand is for producers in the real sector and for the financial sector itself. It shows the share of goods in real and financial sector output that is used by the financial sector as intermediate goods and services. Thus, 17.9% of goods produced by the financial sector serves as intermediate input for the financial sector. Additionally, the financial sector is an important purchaser of intermediate goods from advertising and market research (8.7% of their total output is intermediate input for the financial sector); legal, accounting, head office and consulting services (8.0%); and security, building services and business support (5.7%).

The financial sector also supplies its services to other sectors in order to facilitate the production of goods and services. The right column of table 1 shows that 12.7% of all intermediate inputs supplied by the financial sector are used as intermediate input in manufacturing, further 12.7% by real estate services, 10.7% by wholesale and retail trade, 7.0% by education, health, social work, etc., and 4.4% by legal, accounting, head office and consulting services. This reflects both the size of these activities and the dependence on financial services.

Table 1 shows the interconnectedness in the production of goods and ser-

<sup>13</sup> Given the scope of this article, we focus on domestic effects and do not discuss the role of imports and exports.

<sup>14</sup> We merged the nonfinancial activities as shown in table A1 in the annex.

<sup>15</sup> However, one has to take into account that some of these inputs might be head offices within a banking or insurance group. The data do not allow scrutinizing the importance of the various activities merged under this heading.

vices between the real and financial sector. If final demand for financial sector services changes, not only does the output for final use of these services change (direct effect of the increase in demand) but also indirect effects arise as the financial sectors needs intermediate inputs from the real and financial sectors. The production of these intermediate inputs, in turn, relies on intermediate input from the financial sector and so on. Input-output analysis covers all of these effects, thus allowing us to calculate the impact on total output stemming from a change in demand for financial sector goods and services.<sup>16</sup>

The domestic output multiplier (i.e. the multiplier that shows the effects on the Austrian economy) amounts to 1.7. Hence, if demand for financial sector services increases by EUR 1, total domestic production increases by EUR 1.7. Compared with nonfinancial activities, this multiplier is about average. We can further determine how this effect on the total economy is distributed over financial and nonfinancial goods and services. Table 2 shows the indirect effects that arise if final demand for financial sector services increases by EUR 1. It corroborates the findings from the analysis in the first part of this section. There are strong effects on the financial sector itself and on nonfinancial goods and services producers, in particular on the production of legal, accounting, head office and consulting services. The output of these services would increase by EUR 0.11. The increase in output takes place be-

cause these services are required by the financial sector both as intermediate inputs (as discussed at the beginning of this section) and because they are needed to produce other goods and services that are intermediate inputs in the production of financial sector services. Relatively strong impacts of a change in demand for financial sector services are also apparent for advertising and market research, telecommunication and computer programming.<sup>17</sup>

Furthermore, we can also analyze for which goods and services financial sector services are important intermediate inputs – either in the production of final demand or in the production of other intermediate inputs. For this pur-

Table 2

### Indirect effects of an increase in final demand for financial sector services by 1 EUR

	EUR
<b>Domestic real sectors</b>	
Legal, accounting, head office, consulting	0.11
Advertising and market research	0.04
Publishing, broadcasting, telecommunication	0.04
Computer programming	0.04
Real estate	0.03
Security, building services, business support	0.03
Transport	0.02
Manufacturing	0.02
Scientific, engineering and other services	0.02
Utilities	0.02
Construction	0.02
Other	0.01
Wholesale and retail trade	0.01
Accommodation and food	0.01
Education, health, social work, arts, sports	0.01
Personal services	0.00
Agriculture and forestry	0.00
<b>Domestic financial sector</b>	0.25
<b>Total</b>	<b>0.70</b>

Source: Authors' calculations based on data from Statistics Austria.

<sup>16</sup> Such an analysis relies on several assumptions, e.g. constancy of input coefficients (e.g. Statistics Austria, 2017). However, for our analysis, which aims to provide some information on the interdependencies between the financial sector and real economic activity, these limitations are not too restrictive.

<sup>17</sup> In the interpretation of these results one has to keep in mind that the table only shows domestic indirect effects. Since in the case of e.g. manufacturing most indirect effects are effective abroad, the large role of manufacturing as a supplier of intermediate inputs for the financial sector cannot be inferred from the table.



Table 3

**Proportion of indirect effects occurring in the financial sector**

	% of total indirect effects
<b>Domestic real sectors</b>	
Real estate	11.5
Legal, accounting, head office, consulting	10.2
Wholesale and retail trade	8.8
Personal services	7.9
Education, health, social work, arts, sports	7.5
Other	7.1
Security, building services, business support	7.0
Computer programming	6.8
Scientific, engineering and other services	6.8
Accommodation and food	5.9
Manufacturing	4.5
Advertising and market research	4.5
Transport	4.3
Agriculture and forestry	4.2
Publishing, broadcasting, telecommunication	4.2
Construction	3.4
Utilities	3.0
<b>Domestic financial sector</b>	<b>36.3</b>

Source: Authors' calculations based on data from Statistics Austria.

pose, table 3 shows the proportion of additional output that occurs in the financial sector subject to rising demand for specific goods or services in the real and financial sector. In line with our discussion above, the table shows the strong interdependencies within the financial sector. Furthermore, 11.5% of all indirect effects from an increase in the demand for real estate services occur in the financial sector; likely because of the relevance of loans in real estate. Legal, accounting, head office and consulting services are not only large suppliers of inputs for financial sector services – financial sector services are also important intermediate inputs for these services. Furthermore, the table suggests that a significant part of indirect effects that arise in the production of wholesale and retail trade as well as personal services occurs in the financial sector. Yet, in sum the indirect effects in these sectors are rather small.

Overall, the input-output analysis suggests that there are quite strong interlinkages and interdependencies both within the financial sector and between the financial and nonfinancial sectors. The interconnections are most pronounced between the financial sector and legal, accounting, head office and consulting services.

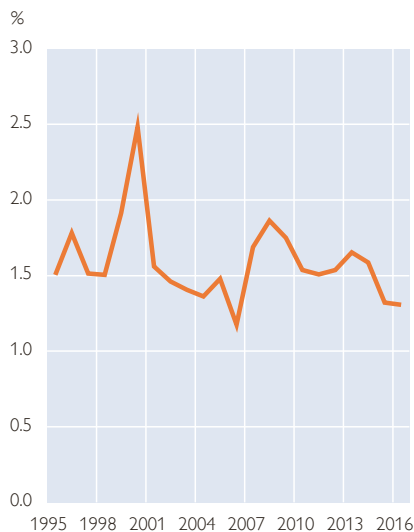
**2.3 Exports of financial services**

In the third part of the discussion of the financial sector's direct contribution to the wider economy, we turn to its relevance for Austria's exports of goods and services. To assess the financial sector's contribution, we added the balance-of-payment items *financial services*, which refer to cross-border services by banks and other financial institutions (e.g. brokers, clearinghouses) and *insurance and pension services*. Activities include bank fees and costs related to the issuance of bonds and underwriting, or the insurance service charge imposed on cross-border premium payments. Additionally, financial services include estimates of FISIM (financial intermediation services, indirectly measured), that is the margin between interest payable and a reference rate on loans and deposits. FISIM's share expanded over the past years significantly.

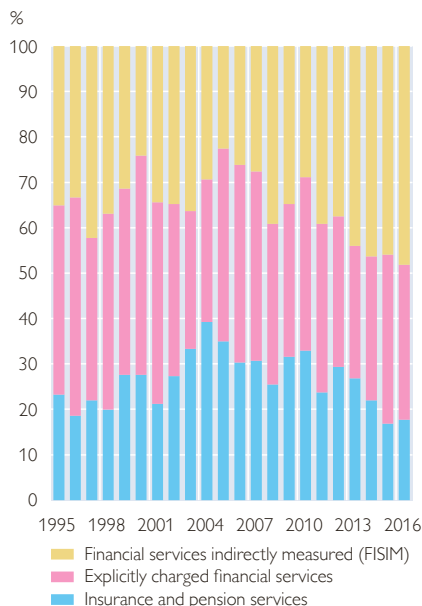
The financial sector's share in all Austrian gross exports of goods and services declined steadily after the onset of the crisis, from 1.9% in 2008 to 1.3% in 2016 (see left-hand panel of chart 3). In 2016, the restructuring of one large banking group accelerated this downward trend. This reduction was broad based, all major regions (with the exception of the U.K.) contributed to this development. However, the reduction was markedly lower in Central, Eastern and Southeastern Europe (CESEE) than in other regions. The regional distribution of exports

### Gross exports of the financial sector

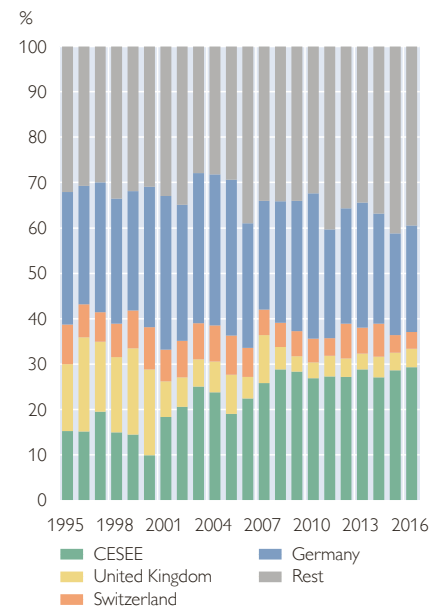
In % of total Austrian exports



By balance sheet item



By country/region



Source: OeNB.

highlights the significant role of CESEE.<sup>18</sup> As a group, CESEE took more than 29% of all exports of the financial sector in 2016. This share was consistently increasing over the last two decades. Among individual countries, Germany is the largest trading partner for financial goods and services, as is the case with other goods and services, accounting for almost 24% of all exports.

### 3 Role of the financial sector in the financing process

The second way to examine the macro-economic relevance of the financial sector is to look at its intermediation function, i.e. its role in providing financial services to the real economy (enterprises, government and households).

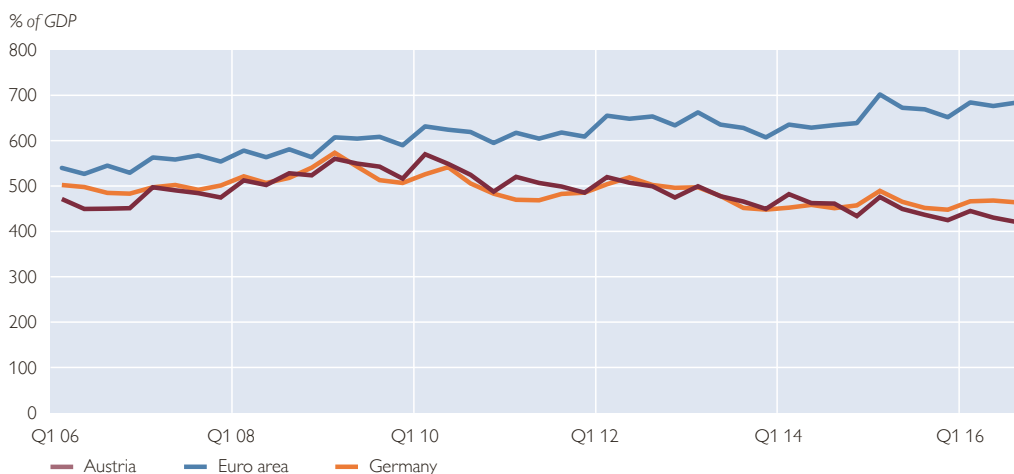
We base our analysis on the financial accounts, which provide harmonized data at a sectoral level. Within the financial accounts framework, the financial sector is represented by the institutional sector S12 (financial corporations) that covers all resident corporations whose main function is to provide financial services.

Looking at financial accounts data confirms the principal findings of the analysis of the financial sector's value added. To start with, the total financial volume (as measured by total assets) of the financial sector is not high in international comparison. By the third quarter of 2016, total assets of all Austrian financial corporations amounted to EUR 1.485 billion, which was equivalent to 430% of GDP. This was slightly

<sup>18</sup> Using the classification of the Austrian balance of payments statistics, CESEE includes the following countries: Albania, Bosnia and Herzegovina, Bulgaria, Estonia, Kosovo, Croatia, Latvia, Lithuania, FYR Macedonia, Moldova, Montenegro, Poland, Romania, Russia, Serbia, Slovak Republic, Slovenia, Czech Republic, Ukraine, Hungary, Belarus.

Chart 4

### Assets of financial institutions



Source: ECB, OeNB.

below the German value (464%) and well below the euro area average of 684% of GDP (chart 4). Moreover, in contrast to the euro area as a whole, the ratio of financial corporations' total assets to GDP declined over the past years (in the first quarter of 2010, it had been 570%). Finally, financial accounts data reinforce the notion that the Austrian financial sector is strongly bank-based, although the share of banks in the total assets of all financial intermediaries has decreased since the onset of the crisis (fourth quarter of 2008) from 71.8% to 64.4%. In the euro area as a whole, banks contributed less than half (46.5%) to financial sector assets.<sup>19</sup> The difference between the euro area and Austria has widened substantially since the onset of the crisis.

From a macroeconomic perspective, a more relevant measure for the importance of the financial sector is the extent to which it finances the domes-

tic real sector rather than devoting itself to other activities.<sup>20</sup> Until the onset of the crisis, financing nonfinancial corporations, government and households was becoming less relevant for the Austrian financial sector. Between 1995 and 2008 the share of funds provided to the domestic real sector (in the form of loans, debt securities and listed as well as unlisted shares) in total financial sector assets almost halved (from 50% to 25%) while foreign financings as well as financing within the financial sector increased. Since then, the share of the domestic real sector has recovered somewhat, reaching 30% in the third quarter of 2016. The largest contribution to this overall decrease came from the reduction in financing the public sector, whose share plummeted in the period from 1995 to 2008, but recovered to 6.3% in 2016 as the banking sector started to invest in government bonds (chart 5).<sup>21</sup> Financing non-

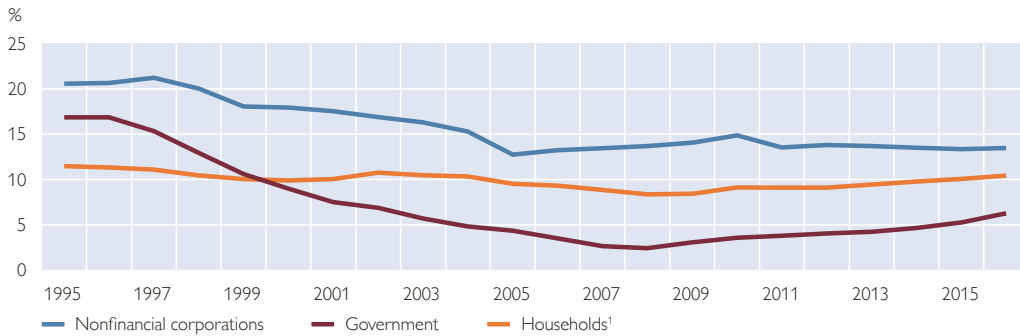
<sup>19</sup> Again, the different role of captive financial institutions has to be taken into account (see footnote 10).

<sup>20</sup> By mid-2016, roughly 40% of the total financing volume of the Austrian financial sector were foreign financings. Unfortunately, the financial accounts do not allow for a breakdown of these by foreign economic sector. Furthermore, available data go back only to 2012. In this period, the share of foreign financings did not change much.

<sup>21</sup> Another factor that has played a role has been the reclassification of banks into the government sector in the form of bad banks.

Chart 5

**Share of real sectors in total assets of Austrian financial corporations**



Source: OeNB.

<sup>1</sup> Including nonprofit institutions serving households.

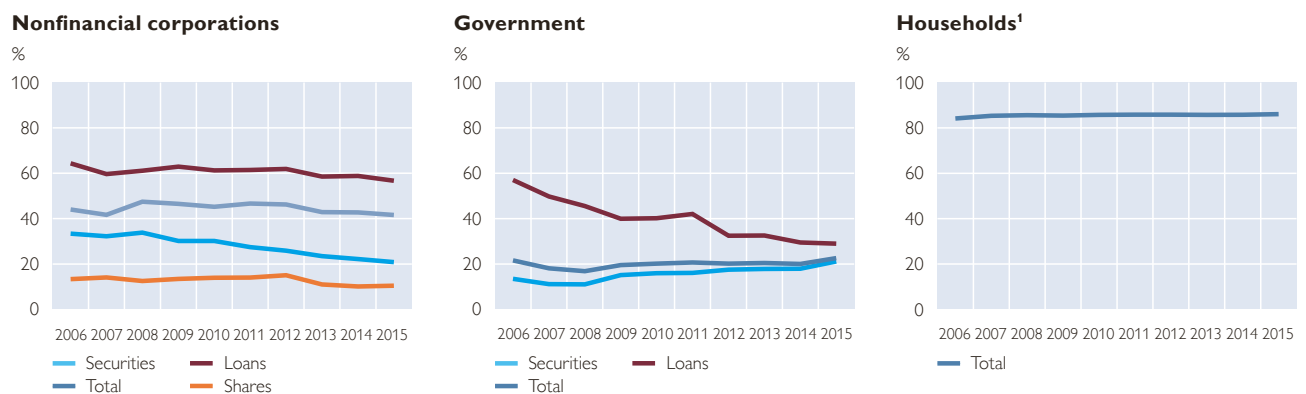
financial corporations also lost in importance until the onset of the crisis, whereas the share of households remained quite stable.

For the Austrian real sector, the domestic financial sector is still the main funding source, even if its share has diminished over the past decade (chart 6). The data for those financial liabilities for which a breakdown by creditor sector is available in the financial accounts show that Austrian financial institutions held 43% of the shares, securities and loans issued/incurred by the real sector in Austria. As data are available only from 2006, the pre-crisis

development cannot be analyzed. Since then, however, the share of corporate bond holdings has fallen from one-third to one-fifth of the outstanding volume. The financial sector's holdings of non-quoted shares almost halved. The share of loans by financial institutions (mostly banks) in all loans to nonfinancial corporations shrank from 64% to 57%, reflecting an increase in intercompany loans. In government finance, financial institutions reduced their loans to government starkly, while they acquired additional government bonds so that their share in financing the Austrian government sector did not change

Chart 6

**Share of the domestic financial sector in selected liabilities of the Austrian real sector**



Source: OeNB.

<sup>1</sup> Including nonprofit institutions serving households.

much overall, amounting to 23% in 2015. The share of the financial sector in the financing of households increased slightly, by 2 percentage points, to 86%.

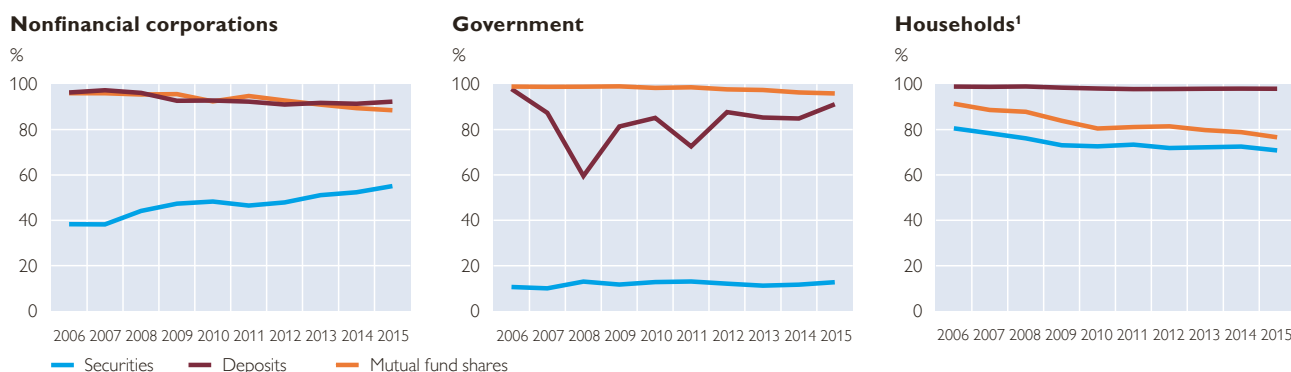
On the asset side, the reduction in the importance of the Austrian financial sector for the real sector was somewhat more pronounced than on the liability side. The share of financial assets held by the real sector that is intermediated by the financial sector shrank steadily, from 50% to 42% between 2006 and 2015. The reduction in relevance was most marked for households. In particular, households withdrew capital from mutual funds issued by Austrian investment companies, but the Austrian financial sector's share in the direct holdings of securities and even in households' deposits also fell, the latter however only slightly

(chart 7). Yet it has to be taken into account that domestic mutual funds invest to a considerable degree into foreign securities and shares.<sup>22</sup> Regarding nonfinancial corporations, the picture was similar for mutual funds and deposits while the share of securities issued by Austrian financial institutions even increased.<sup>23</sup> As to the government sector, the share of the domestic financial sector in deposits varied widely, reflecting strong fluctuations in deposits held with nonresident banks, especially immediately after the onset of the crisis in 2008.

Overall, the real sector now uses the intermediation services of the financial sector slightly less than in the past.<sup>24</sup> One might argue that increasing financial market integration and technological advances have rendered the

Chart 7

### Share of the domestic financial sector in selected assets of the Austrian real sector



Source: OeNB.

<sup>1</sup> Including nonprofit institutions serving households.

<sup>22</sup> By the end of 2016, more than two-thirds (69%) of the net asset value of all Austrian mutual funds were foreign investments.

<sup>23</sup> Stocks and bonds offer households the possibilities to invest their savings directly into companies, i.e. without intermediation by the financial sector (although the financial sector might supply other services regarding this investment). Data from the Household Finance and Consumption Survey (Fessler et al., 2016) show that about 10% of Austrian households invest in mutual funds, 4% in bonds and 5% in shares. Participation rates are the higher the higher the income or net wealth of households. For example, in the first net income quartile less than 1% of all households own shares compared to 13% in the fourth quartile. Furthermore, about 1% of all households in the first income quartile own bonds compared to about 8% in the fourth quartile. Analyzing participation rates according to net wealth gives a similar picture. Hence, this form of investment is more important for affluent households.

<sup>24</sup> This view only captures direct funding but neglects the provision of disintermediated financing, such as providing underwriting, consulting and advisory services, by financial institutions.

geographical location of the providers of financial services increasingly irrelevant. Especially within the EU, the free flow of capital is one of the four freedoms of the single market, and this idea has fed into many EU initiatives and projects, ranging from the 1988 deregulation of capital movements in the EU to the Capital Markets Union project (Elsinger et al., 2016).

The (slight) reduction of the share of the Austrian financial sector in the financial assets and liabilities of the real sector would also corroborate this view. More than two-thirds of the liabilities of the Austrian government sector and almost one-third of the total external financing of the corporate sector came from abroad in 2015. However, there were marked differences across financial instruments. The cross-border share was lowest for bank loans, while more than two-thirds of Austrian corporate bonds were placed abroad, which may be ascribable to the relatively small domestic bond market. The same holds for the stock market. Moreover, the sizable foreign share in equity instruments and in other loans reflects the relatively high share of inward direct investment in the Austrian corporate sector (Elsinger et al., 2016).<sup>25</sup> Austrian households, in contrast, depend almost completely on domestic sources for their external financing.

#### 4 Benefits of having a domestic financial sector

There are a number of reasons why geographic proximity between financial institutions and potential borrowers matters in the provision of financial

services.<sup>26</sup> In essence, these reasons stem from information asymmetries that increase with distance. The role of proximity in the provision of financial services is most often attributed to transactions costs, which include transportation costs and information costs (Brevoort and Wolken, 2008). Transportation costs arise because screening loan applicants and monitoring existing borrowers may require regular site visits by a loan officer. Information costs are particularly relevant for evaluating credit applications from small, informationally “opaque” enterprises when lenders have to substitute “soft” information for “hard” information. Collecting this information strongly benefits from proximity to borrowers because it depends on personal contacts as well as the knowledge of the local community and economic conditions. These considerations are especially relevant for SMEs, which are more likely to be opaque and therefore require information to be updated more frequently. Since there are economies of scale associated with obtaining this kind of information, distance matters in financial relationships especially for SMEs. Both technological and financial innovations may have facilitated forms of transactions-based lending that focus on the quality of specific assets rather than on the overall quality of a firm. These assets can be valued using hard information and can therefore be used as collateral. As information on these assets may be obtained also for opaque small borrowers, there is less need for personal interactions between creditor and debtors (Udell, 2009). Nevertheless, in those cases in which hard infor-

<sup>25</sup> Although the foreign share in equities may well include portfolio investments.

<sup>26</sup> Geographic proximity is not necessarily equal to being resident in the same country. Especially in a small open economy this may well mean being just across the border. However, if legal, linguistic and perhaps cultural differences are taken into account, then geographic proximity might in many cases at least be aligned with “domestic.”



mation cannot be replaced with soft information, relationship lending still requires the proximity of the borrower to the lender.

Furthermore, linguistic and cultural differences, different underlying economic structures, as well as differences in national supervision practices and corporate governance still pose barriers in the European credit markets (Affinito and Piazza, 2008). Again, these are likely to be felt more by smaller firms that tend to borrow smaller sums than larger companies do.

Informational and regulatory differences may also be behind the so-called “home bias” that (individual and institutional) investors exhibit in their investment decisions. Despite the full liberalization of capital movements and technological change, in virtually all portfolios the share of domestic assets is significantly greater than expected according to portfolio theory. At least partially, this tilt can be rationalized by various factors such as lower transaction costs, diverging tax rules, fewer

information asymmetries or the absence of exchange-rate risk (Levy and Levy, 2014). As a result, the costs of diversification could be higher than the resulting return. Given the small size and the ensuing low liquidity of Austrian stocks, they would not be included in large international portfolios in the absence of sufficient liquidity. So Austrian corporations depend on domestic investors, including financial institutions, for their financing.

Furthermore, even within the euro area, financial integration is not a one-way street, as shown by the substantial financial fragmentation associated with the financial and sovereign debt crises between 2007 and 2011 (ECB, 2016). The crisis brought the era of rapid growth of cross-border capital flows to a halt and gave rise to an increasing re-nationalization of loan financing. Across types of flows, banking flows were hit the hardest, and the ensuing retrenchment of banking activity abroad was matched by an increase in domestic activity of banks. The share of

Chart 8

### Loans to the Austrian non-MFI sector



Source: ECB.

<sup>1</sup> Those euro area countries for which data are available since 1998.

banks from other euro area countries in lending to Austrian nonbanks<sup>27</sup> showed a clear upward trend since the beginning of the European Monetary Union, even if it has been considerably more volatile than lending from Austrian banks, as chart 8 shows. One factor may have been that banks that were bailed out with public funds were expected to increase home-market lending (Milesi-Ferretti and Tille, 2011 and Lund et al., 2013). Thus, in times of financial stress, when information asymmetries become particularly relevant, financing from the domestic financial sector may be especially important.

## 5 Summary

In spite of the setbacks during the crisis years, the financial sector still accounts for about 4% of value added and about 3% of the labor force. However, estimating the contribution of the financial sector is hindered by uncertainties such as the treatment of risk in the financial sector's value added. For many years, the financial sector had also contributed to the Austrian current account surplus, although in recent years, its net exports diminished. The financial sector is closely intertwined with other economic sectors. A change in financial sector activities has a relatively strong impact on the Austrian economy. This holds particularly for legal, accounting, head office and consulting services. The true macroeconomic relevance of the financial sector goes beyond its direct contribution to output and demand. Its economic function lies in the financing of the real economy. However, also with respect to financial intermediation, the importance of the Austrian financial sector has been gradually decreasing. The reduction was

most pronounced for capital market investments (mutual funds but also direct holdings of stocks and securities) of the household sector. For the financial sector, financing the domestic economy was becoming less relevant before the crisis hit, but has become somewhat more relevant again since then.

Even though the Austrian financial sector has shrunk over recent decades, the share of private credit in GDP is consistently higher than the threshold above which the literature suggests negative impacts on GDP growth. Furthermore, the relative increase of housing loans to households compared to loans to nonfinancial corporations that had been registered in many other countries took place in Austria, too, although on a far lesser scale. Thus, if the value-added share of the financial sector were to continue its decrease, this need not necessarily be a detriment to the Austrian economy. However, any specific conclusion would require a thorough analysis of the specific situation in Austria.

Recent technical advances as well as the increasing integration of financial and capital markets notwithstanding, there are still good reasons why the presence of a domestic financial sector matters in the provision of financial services. The considerations rest among others on the cost of screening loan applicants and monitoring borrowers. Furthermore, the financial and economic crisis triggered a re-nationalization of loan financing, which suggests that borrowing possibilities abroad are more fragile than domestic ones. These factors imply that despite the decrease of its relative importance there will still be a role for the domestic financial sector in the future.

<sup>27</sup> Lending from all euro area banks (including those from Austria).

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## Annex

Table A1

## Transfer table

NACE	Original	Combined	
A01	Products of agriculture, hunting and related services	Agriculture and forestry	
A02	Products of forestry, logging and related services		
A03	Fish and other fishing products; aquaculture products; support services to fishing		
B	Mining and quarrying	Manufacturing	
C10—12	Food products, beverages and tobacco products		
C13—15	Textiles, wearing apparel and leather products		
C16	Wood and of products of wood and cork, except furniture; articles of straw and plaiting materials		
C17	Paper and paper products		
C18	Printing and recording services		
C19	Coke and refined petroleum products		
C20	Chemicals and chemical products		
C21	Basic pharmaceutical products and pharmaceutical preparations		
C22	Rubber and plastics products		
C23	Other non-metallic mineral products		
C24	Basic metals		
C25	Fabricated metal products, except machinery and equipment		
C26	Computer, electronic and optical products		
C27	Electrical equipment		
C28	Machinery and equipment (not elsewhere classified)		
C29	Motor vehicles, trailers and semi-trailers		
C30	Other transport equipment		
C31—32	Furniture; other manufactured goods		
C33	Repair and installation services of machinery and equipment		
D35	Electricity, gas, steam and air-conditioning		Utilities
E36	Natural water; water treatment and supply services		
E37—39	Sewerage; waste collection, treatment and disposal activities; materials recovery; remediation activities and other waste management services		
F	Constructions and construction works	Construction	
G45	Wholesale and retail trade and repair services of motor vehicles and motorcycles	Wholesale and retail trade	
G46	Wholesale trade services, except of motor vehicles and motorcycles		
G47	Retail trade services, except of motor vehicles and motorcycles		
H49	Land transport services and transport services via pipelines	Transport	
H50	Water transport services		
H51	Air transport services		
H52	Warehousing and support services for transportation		
H53	Postal and courier services		
I	Accommodation and food services	Accommodation and food	
J58	Publishing services	Publishing, broadcasting, telecommunication	
J59—60	Motion picture, video and television programme production services, sound recording and music publishing; programming and broadcasting services		
J61	Telecommunications services		
J62—63	Computer programming, consultancy and related services; information services	Computer programming	
L68B	Real estate services excluding imputed rents	Real estate	
L68A	Imputed rents of owner-occupied dwellings		
M69—70	Legal and accounting services; services of head offices; management consulting services	Legal, accounting, headoffice, consulting	
M71	Architectural and engineering services; technical testing and analysis services	Scientific, engineering and other services	
M72	Scientific research and development services		
M74—75	Other professional, scientific and technical services; veterinary services		
M73	Advertising and market research services	Advertising and market research	
N77	Rental and leasing services	Other	
N78	Employment services		
N79	Travel agency, tour operator and other reservation services and related services		
N80—82	Security and investigation services; services to buildings and landscape; office administrative, office support and other business support services	Security, building services, business support	
O84	Public administration and defence services; compulsory social security services	Education, health, social work, arts, sports	
P85	Education services		
Q86	Human health services		
Q87—88	Social work services		
R90—92	Creative, arts and entertainment services; library, archive, museum and other cultural services; gambling and betting services		
R93	Sporting services and amusement and recreation services		
S94	Services furnished by membership organisations	Personal services	
S95	Repair services of computers and personal and household goods		
S96	Other personal services		

Source: Authors' compilation.