Productivity in Europe
Trends and drivers in a service-based economy

FACTSHEET - AUSTRIA (AT)

P. BAUER
I. FEDOTENKO
A. GENTY
I. HALLAK
P. HARASZTOSI
D. MARTINEZ TUREGANO
D. NGUYEN
N. PREZIOSI
A. RINCON-AZNAR
M. SANCHEZ-MARTINEZ

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Key messages

- Structural change alone has been responsible for a loss equal to 0.3 percentage points of average labour productivity growth in the period 1970-2016 in Austria. This is due to both the decrease in the weight of the manufacturing and agricultural sectors and the rise of relatively sluggish service sectors, such as regulated professions and non-market services.

- The level of firms’ entry rates in the business services sector in Austria is below the EU average for all firms regardless of their size. There thus seems to be some room to improve productivity growth by stimulating business entry and business dynamism in general in Austria.

- The contribution of the size distribution of firms to productivity growth in the Austrian ICT sector is significantly negative. Given the higher employment share in smaller firms relative to the EU, there is also a negative productivity gap relative to the latter’s average in levels. This contrasts with relatively good economy-wide performance.

1 Impact of structural change and productivity in services

Table 1. AT – Average labour productivity growth in the period 1910-2017 computed using the 1-digit sector nominal value added weights prevailing in each base year, including and excluding services (%).

<table>
<thead>
<tr>
<th>Base year</th>
<th>All industries (including services)</th>
<th>All excluding services</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970</td>
<td>2.40</td>
<td>3.13</td>
</tr>
<tr>
<td>1980</td>
<td>2.21</td>
<td>3.00</td>
</tr>
<tr>
<td>1990</td>
<td>2.14</td>
<td>3.02</td>
</tr>
<tr>
<td>2000</td>
<td>2.02</td>
<td>2.91</td>
</tr>
<tr>
<td>2010</td>
<td>1.93</td>
<td>2.92</td>
</tr>
<tr>
<td>2017</td>
<td>1.92</td>
<td>2.94</td>
</tr>
<tr>
<td>Actual</td>
<td>2.08</td>
<td>2.91</td>
</tr>
</tbody>
</table>

Source: STAN and EU KLEMS, 2019.
Note: the real estate sector is excluded from these computations.

Austrian average real labour productivity growth in the period 1970-2017 would have been about 0.32 percentage points higher (about 15 % higher) compared to the actual one if the economic structure prevailing in 1970 had remained the same (see Table 1). In addition, when excluding services from the computation of the counterfactual average labour productivity growth rates, the latter increase from 2.4 % (services included) to 3.13 % (services excluded) when using 1970 value added weights, and from 1.92 % to 2.94 % with 2017 weights. This implies that the servitization process of the economy has been a major drag to overall productivity performance.

Table 2 shows the drivers at the 1-digit level of such negative impact of structural change on productivity growth. Two main observations emerge. First, both the agricultural and manufacturing sectors have seen their relative economic weights substantially shrink from 1970 to 2017, by around 81 % and 29 %, respectively. Since these sectors have experienced a relatively better performance in terms of productivity growth, the reduction in their shares has contributed to sluggish economy-wide productivity growth. Second, certain service sectors have increased their economic weight significantly while having performed relatively poorly in

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1 The difference between the 1970 base-year counterfactual and the actual growth rate in the first column of table 1 isolates the impact of structural change.
terms of productivity growth, chiefly regulated professions and non-market services. Austrian labour productivity growth in the service subsectors has however fared comparatively better than in other Member States, partially cushioning the deleterious effects from the *tertiarization* process.

2 Table 2. AT – Value added shares and average labour productivity growth, 1970-2017 (%).

<table>
<thead>
<tr>
<th>Service Subsector</th>
<th>Value added share 1970</th>
<th>Value added share 2017</th>
<th>Average labour productivity growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture, forestry and fishing</td>
<td>7.7</td>
<td>1.5</td>
<td>4.0</td>
</tr>
<tr>
<td>Mining and quarrying</td>
<td>1.8</td>
<td>0.4</td>
<td>2.2</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>29.0</td>
<td>20.7</td>
<td>3.7</td>
</tr>
<tr>
<td>Electricity and water supply, waste management and others</td>
<td>3.1</td>
<td>3.3</td>
<td>2.1</td>
</tr>
<tr>
<td>Construction</td>
<td>8.5</td>
<td>7.1</td>
<td>0.8</td>
</tr>
<tr>
<td>Wholesale and retail trade; repair of motor vehicles and motorcycles</td>
<td>16.2</td>
<td>13.4</td>
<td>2.3</td>
</tr>
<tr>
<td>Transportation and storage</td>
<td>6.1</td>
<td>6.2</td>
<td>2.5</td>
</tr>
<tr>
<td>Accommodation and food service activities</td>
<td>3.5</td>
<td>5.8</td>
<td>1.1</td>
</tr>
<tr>
<td>Information and communication</td>
<td>2.3</td>
<td>3.9</td>
<td>2.7</td>
</tr>
<tr>
<td>Financial and insurance activities</td>
<td>3.8</td>
<td>4.5</td>
<td>2.6</td>
</tr>
<tr>
<td>Professional, administrative and other activities</td>
<td>2.3</td>
<td>10.8</td>
<td>0.6</td>
</tr>
<tr>
<td>Other services (community, social, and personal services)</td>
<td>15.8</td>
<td>22.4</td>
<td>0.6</td>
</tr>
<tr>
<td>Services overall</td>
<td>50.0</td>
<td>67.1</td>
<td>1.5</td>
</tr>
</tbody>
</table>

Note: the real estate sector is excluded.

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2 Austrian average labour productivity growth in the services sector in the period 1970-2017 is the fourth highest in our sample of 12 countries (i.e., all EU-15 Member States except EL, IE and PT).
2 Role of intangibles in productivity in services

Figure 1. Investment-to-capital ratio (left) and contribution of intangible capital growth to productivity growth (right) in 2015.

Austria ranks in the middle in terms of intangible investment-to-capital ratio. As its investments are also average based on both National Accounts and non-National Accounts intangibles, its contribution from intangible investment to productivity growth ranks in the middle as well. Looking at investments of more detailed asset categories, Austria invests relatively more into R&D and into brands.

3 Firm size distribution and sectoral labour productivity

Figure 2. AT – Percentage difference in labour productivity at the aggregate and sectoral levels relative to the EU28, contributing effects (2016)

Figure 3. AT – Percentage change in labour productivity at the aggregate and sectoral levels, contributing effects (2012-2017)


Apparent labour productivity in a representative aggregate of the market economy in Austria was 20.8% above the EU28 figure in 2016. This difference is the result of higher intrinsic productivity levels than peers (20.0 percentage points, pp), whereas a much more limited role is played by the negative sectoral composition effect (-1.3 pp) and the positive firm size distribution effect (2.1 pp).

National Accounts intangible assets: Software and database, Research and development, Mineral exploration and artistic originals.
Non-National Accounts intangible assets: Design, Brand, Organisational capital, Training.

C: Manufacturing; F: Construction; G: Wholesale and retail trade; repair of motor vehicles and motorcycles; H: Transportation and storage; I: Accommodation and food service activities; J: Information and communication; M: Professional, scientific and technical activities; N: Administrative and support service activities.
On a sectoral basis, the impact of size distribution on productivity is rather heterogeneous. While having a positive contribution in manufacturing (NACE section C), construction (F) and wholesale and retail trade (G), the opposite happens for some service sectors, such as accommodation and food services (I) and professional activities (M). The most noticeable case is information and communication (J), for which the firm size distribution effect – with a higher employment share than the EU benchmark in smaller firms – explains the negative productivity gap relative to the EU average.

On a dynamic perspective, recent developments (2012-2017) suggest an aggregate negligible contribution of firm size distribution (0.1 pp) to productivity growth (2.9%). On a sectoral basis, the most noticeable exception is information and communication (J), for which negative size distribution effects more than compensated slight pure productivity gains.

4 Role of firm demography in productivity growth

Figure 4. AT – Entry rates in business services (left-hand side) and in 1-digit industries\(^5\) (right-hand side), percentages

![Graph showing entry rates in business services and 1-digit industries](image)

Figure 5. Entry rate for firms with at least 10 employees in business services, percentages.

![Graph showing entry rates for firms with at least 10 employees](image)


Entry rates (without sole proprietorships) in services steadily declined between 2008 and 2016 (8.3 % in 2008 versus 6.3 % in 2016). Accordingly, we observe a widespread decline in entry between 2008 and 2016 across industries. A decline in entry rate is also present for larger-than-micro firms in the business services

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\(^5\) One-digit industries include: Mining and quarrying (B); Manufacturing (C); Electricity, gas, steam and air conditioning supply (D); Water supply; sewerage, waste management and remediation activities (E); Construction (F); Wholesale and retail trade; repair of motor vehicles and motorcycles (G); Transportation and storage (H); Accommodation and food service activities (I); Information and communication (J); Financial and insurance activities (K); Real estate activities (L); Professional, scientific and technical activities (M); Administrative and support service activities (N); Education (P); Human health and social work activities (Q); Arts, entertainment and recreation (R); Other service activities (S).
sector (2.0% in 2008 versus 1.5% in 2016), a segment of the corporate sector where entry rates are shown to be relevant for aggregate productivity growth. The level of entry rate is at the average of EU countries for larger-than-micro firms (average in 2017: 1.5%), while it is below the average for all firms (average in 2017: 9.1%, without sole proprietors). Thus there seems to be some room to improve productivity growth by stimulating business entry and business dynamism in general in Austria.

5 Policies for addressing low productivity growth

In Austria there are at least five different sets of policies addressing – directly or indirectly - the problem of productivity growth. They can be summarised as following:

- Stimulating investment in new machinery and production processes to foster modernisation in firms. Austria’s approach has been to develop a mix of various instruments ranging from financing investment directly (through grants and loans) and indirectly (via guarantees) to injecting public financing into (new and/or growing) firms (e.g. via public-induced equity investing) as well as to stimulate the (private) market for risk capital.

- Stimulating innovation processes within firms to enhance directly R&D and innovation activities. Austria’s business enterprise R&D expenditures (BERD) are financed to a significant degree through public funds. These are predominantly in the form of (i) grants (and loans) and (ii) the so called “research premiums” which amounts to 14% of the R&D expenditures of a firm.

- Stimulating specific R&D activities which are specifically geared towards increasing productivity. Thematic oriented programmes (i.e. “ICT of the future” and “production of the future”) which fund applied research specifically for digitalisation amount to €25m and €18m respectively (in the year 2018).

- Improving the skill set of workers and aligning this with new challenges (e.g. ‘Industrie 4.0’). Besides a general aim to increase the number of tertiary students especially in STEM degrees, there are activities geared towards modernising the traditional dual education system (i.e. “dual apprenticeship training”) and to make it more compatible with new challenges defined by the overall digitalisation process.

- Improving the general regulatory framework in which firms have to operate, i.e. setting up a ‘modern’ competition policy.
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