The development of the self-employment rate in the Netherlands 1899-1997

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ABSTRACT

Recently a unique time series of the self-employment rate in the period 1899-1997 distinguishing three major sectors of industry was constructed for the Netherlands. It shows a continuous decline until the early 1980s and a revival thereafter. The role of changes in sectoral composition versus within-sector trends in explaining this development of self-employment was investigated through a shift-share analysis of these data. Overall, the evidence rejects a prime role of sector shifts. On the contrary, a deeply rooted process of upscaling followed by historically anomalous downscaling in almost all sectors of industry is the major proximate cause. This conclusion calls for a continued search for ultimate causes within the domains of technology, economics, institutions and culture.

INTRODUCTION

A remarkable turnaround

In many of the most highly developed economies the last quarter of the 20th century has shown a discontinuation if not a turnaround of the long-standing trend towards increasing scale in the production and distribution of many goods and services. And related to this reversal many of these economies have also experienced an historically unprecedented revival of the share of self-employment in the labor force. The turn towards smaller scale in production has been well documented by Loveman and Sengenberger (1991) and by Acs and Audretsch (1993a). The revival of self-employment has first been analyzed by Blau (1987) and more recently by OECD (2000), while the latter has also pointed out that this renaissance has been most marked for self-employed without employees. This reversal, though quantitatively modest and possibly of a temporary nature, has now been manifest for more than 30 years in countries like the UK and the USA, and for about two decades in several other advanced economies. It is the more remarkable as it marks the end or at least the discontinuation of an historical development spanning at least two centuries. Be it fleeting or sustainable, this turnaround deserves close scholarly attention. Several explanations already have been forwarded, including variables in the economic, technological and cultural arena (Carree et al., 2002, and Wennekers et al., 2002.), but to date the empirical evidence is limited.

A well-known assumption is the role of changing sectoral composition. In many OECD-countries the 19th and the early 20th century showed a continuous decline of the (employment) share of agriculture, with both manufacturing and services gradually gaining ground. The second half of the 20th century brought a further shrinking of agricultural employment and some decline of manufacturing’s share, while services became the dominant sector in terms of employment. A recent article in The Economist (December 31st, 1999, p. 22) briefly documents these long-term developments in employment. Some scholars (Storey in EIM, 2000, pp. 4-5) hold it that the rapid growth of the services sector in recent decades has to a considerable extent been responsible for the renaissance of self-employment. To our knowledge
little empirical evidence has so far been brought forward regarding the degree to which this hypothesis might hold. With respect to the related increase in the employment share of small business, some influence of the changing sectoral composition has been substantiated by earlier studies (Loveman and Sengenberger, 1991, and Acs and Audretsch, 1993), but the evidence is mixed. The case is still pending. Recently, historical sources regarding both average firm size and self-employment share by sector in the Netherlands, spanning most of the 20th century, have come to our attention. After an effort of data collection from these sources and some further processing, these data permitted an empirical analysis of the developments outlined above.

Set-up of the paper and research questions

The goal of our research is to achieve more insight into the relative importance of changes in sector composition of the economy versus within-sector trends, for explaining the historical downward development of self-employment and the recent reversal of this trend. A review of the literature first presents what is already known in this area. Subsequently, our empirical research covers two questions. Our first research question is the core of our research and deals with the role of the changing sector composition of the Dutch economy and of within-sector trends in explaining the development of the self-employment share in the Netherlands between 1899 and 1997. Our second, corroborative, question considers the analysis of an interesting corollary, i.e. the development of average firm size in the Netherlands between 1930 and 1993.

DEFINITIONS

As stated in the previous subsection, the core variable of our investigation is the self-employment rate, i.e. the proportion of the self-employed in total employment or, alternatively, in the labor force. We will define the number of self-employed or entrepreneurs \(e\) as the sum of both the owners of incorporated and unincorporated businesses, but excluding unpaid family workers and wage-and-salary workers operating a side-business as a secondary work activity (also see Carree et al., 2002). The labor force \(l^* = e + w + u\) is the sum of self-employed \(e\), wage-employed \(w\) and unemployed \(u\). Total employment \(l = e + w\) is the sum of self-employment and wage-employment.

Equation (1) defines the self-employment rate \(ser\):

\[
ser = \frac{e}{l} \quad \text{(or alternatively } ser^* = \frac{e}{l^*})
\]

In empirical work one sometimes has to deviate somewhat from this definition, for example by having to include unpaid family workers in self-employment.

We will also consider two related concepts. The first of these is the concept of average firm size \(afs\), as defined in equation (2), where \(b\) stands for the number of businesses:

\[
afs = \frac{(e + w)}{b} = \frac{l}{b}
\]
In theory, assuming the number of businesses \((b)\) to be equal (or proportional) to the number of business owners or self-employed \((e)\), average firm size thus is equal (or related) to the reciprocal of the self-employment rate in total employment. In empirical practice there may be large and varying differences between \(b\) and \(e\). First, the number of business owners may in reality diverge from the number of businesses or establishments due to trends in the internal and external organisation of businesses. Secondly, employment data and establishment or firm data are usually drawn from different statistical sources.

A more distantly related variable is the share of small businesses in total employment. In this respect small businesses are often defined as all businesses with fewer than 100 employed; sometimes, in the EU, those with fewer than 200 or 250 employed, and in the USA, those with fewer than 500 employed. Equation (3) defines the small business share \((sbs)\):

\[
(3) \quad sbs = \frac{e + ws}{e + w},
\]

where \(ws\) stands for the number of wage-employed in small businesses. As can easily be seen, the small business share equals the sum of the self-employment rate and the proportion of small business wage-earners in total employment. In quantitative terms the small business share is usually substantially larger than the self-employment rate (in developed economies of the late 20th century the total small business rate is in the order of magnitude of (very roughly) around 0.5, whereas the self-employment rate is usually between 0.05 and 0.15).

All three concepts as defined in equations (1), (2) and (3) can be further elaborated by differentiating between self-employed with and without personnel.

**REVIEW OF THE LITERATURE**

Historically self-employment is the natural economic position of homo sapiens. However, already in early times and driven by a division of labor, paid jobs arrived on the scene. Although no reliable statistics are available concerning the prevalence of self-employment in the distant past, there are indirect indications (Braudel, 1982, pp. 52-54) that by the end of the 18th century in several of the most developed countries the prevalence of self-employed (business owners) had already declined to below 50% of the labor force. To our knowledge the oldest systematic statistical material on self-employment pertains to the very end of the 19th century. Historical data assembled by Phillips (1962, pp. 7-26) from several sources, indicate that between 1880 and 1930 the proportion of the self-employed among all “gainful workers” declined substantially (from 37% to 20%). This decrease of the self-employment share was due to both a decline in the proportion of the self-employed within agricultural and non-agricultural employment, and to a decline in the employment share of agriculture. For the period 1930-1960 a continued decline of the self-employment share in the American labor force to a level of around 13% in 1960 can be observed. Blau (1987) observes that the proportion of male and female self-employed in the (non-agricultural) U.S. labor force further declined until the early
1970s and then started to rise until at least 1982. EIM’s dataset COMPENDIA 2000.1 (Wennekers, Uhlaner and Thurik, 2002) shows how the self-employment rate in the U.S. further increased until the mid 1980s and how it has stabilized in recent years. Because neither the data presented by Blau, nor EIM’s Compendia data are disaggregated by sector, their analysis is hampered. Also with respect to the U.S., OECD (1986, p. 47) demonstrates how the revival of non-agricultural self-employment between 1969 and 1983 concurred with a further decline of agricultural self-employment, but these structural shifts have not been analysed. With respect to the United Kingdom, Storey (1994, p. 26) presents a comparable long-term decline of the self-employment rate from around 13% of the total labor force in 1910 to around 8% in 1965, and a subsequent revival thereafter. These interesting data for the U.K. were however not disaggregated by sector. Storey (1994, p. 41) also cites grouped national cross-section data spanning the global labor force, corroborating that in correspondence with a rising level of economic development, diminishing agricultural employment (sector shift) and declining self-employment within non-agricultural employment (within-sector trend) contribute to a declining overall self-employment rate.

As far as the development of average firm size in the early 19th century is concerned, some telling statistical information is available regarding the USA. The oldest sources are the 1820 and 1850 Censuses of Manufactures, as quoted by Sokoloff (1984, pp. 353-355). Between those two years and regarding the Northeast, a rise in the average number of workers employed can be observed in 9 out of 10 manufacturing industries for which a sufficient number of observations is available. In most of these industries the increase in the average firm size was quite substantial, “with the average industry registering growth in firm size of 66% over the 30 years.” Sokoloff attributes this increase to larger-scale manufacturing plants superseding artisanal shops during this period. This upscaling trend obviously signals within-sector developments and had little or nothing to do with sector shifts. Chandler (1977) presents many more examples of a further increase in average firm size in both manufacturing (across many lines of business such as food, steel, oil, automobiles, aircraft, chemicals and pharmaceuticals) and service industries (such as retailing, transport, telecommunication and financial services) during the period 1860-1960.

The SME (employment) share in many countries typically declined during the greater part of the 20th century, while following a U-shaped development in recent decades. Sector data concerning the development of the SME-share were analyzed by Loveman and Sengenberger (1991) as well as by several contributions to a volume edited by Acs and Audretsch (1993a). The well-known article by Loveman and Sengenberger (1991) documents the major developments in the firm size distribution of the six largest OECD countries, across various time spans until the mid 1980s. We will cite two of their main conclusions (op. cit., p. 35.) “First, after many decades of decline, the employment share of SMEs began to increase in the 1970s, though at different rates in different countries and sectors.” They continue “From the empirical evidence … it appears that the employment gains in the SME sector are neither merely
the results of sectoral change toward the service sector, nor the effects of the business cycle.” Instead, Loveman and Sengenberger attribute the re-emergence of small-scale production to a significant extent to the decentralisation and vertical disintegration of large companies and to various kinds of new small business dynamism. The volume edited by Acs and Audretsch (1993a, p. 227) concludes that across several Western countries, in the 1970s and 1980s “a distinct and consistent shift away from large firms and towards small enterprises has occurred within the manufacturing sector.” Here we will discuss two of the country cases presented in their book. Fritsch (1993, pp. 41-48) shows how the employment share of small firms in Germany continuously declined between 1907 and 1970, and how it increased thereafter. He subsequently shows how between 1970 and 1987 the small firm share increased in manufacturing and decreased in services. A shift approach shows that, overall, the increasing small firm share in the Federal Republic of Germany in those years can be explained by a change in sectoral composition (shrinking manufacturing and expanding services sector). Using the U.S. Small Business Data Base, Acs and Audretsch (1993b) show how between 1976 and 1986 small-firm employment shares increased in manufacturing and decreased in services. In fact, in the manufacturing sector a pronounced shift towards small enterprises has taken place in this period, both in terms of employment or sales shares and in terms of average firm size. For instance, between 1979 and 1984, “with a single exception, in the tobacco industry, the mean plant employment size declined in every 2 digit major manufacturing industry” (Acs and Audretsch, 1993b, p. 70.) They attribute this shift to smaller firms in manufacturing for a considerable extent to “the establishment of new firms which are apparently replacing old ones” (Acs and Audretsch, 1993b, p. 76.)

In conclusion, the literature on the long-term historical decline of the self-employment rate points at an influence of both the diminishing employment share of agriculture and a trend towards lower self-employment rates within non-agricultural employment. To our knowledge a shift-share analysis of the long-term decline of self-employment, distinguishing different non-agricultural sectors of industry, has never been carried out, nor has the recent revival of self-employment been analysed in those terms. The literature about the long-term development of average firm size does however provide some clues, in so far as it clearly underscores the importance of within-sector trends. The literature with respect to the enhanced small business presence in recent decades offers evidence of both within-sector trends, particularly in manufacturing, and the role of an expanding service sector.

DATA FOR THE NETHERLANDS

Recently, statistical data for the Netherlands across long time intervals and potentially suitable for analyzing our first research question, have come to our attention. Regarding the number of self-employed, excluding unpaid family workers, we have assembled data for eight data points. Regarding the years 1899, 1909, 1930, 1947 and 1960 these data were directly or indirectly taken from various Population and Occupation Censuses carried out in those years. With respect to 1981, 1987 and
1997 data were taken from various Labor Accounts. Data for total employment in those years were either from the CBS Statistical Time Series 1899-1994 or from recent Labor Accounts. For all these years we have collected data for three major sectors that together span the entire Dutch economy. These sectors are Agriculture, Industry (total of manufacturing, construction, mining and utilities) and Services (including trade, transport, financial, personal and collective services). The appendix presents a more elaborate account of the data. Self-employment rates for all three sectors, in each of the years mentioned above, were calculated by dividing the number of self-employed by total employment in these sectors. Figure 1 presents the self-employment rate with respect to total employment in all three sectors together, as well as the self-employment rate in industry and services with respect to non-agricultural employment. Both rates show a more or less continuous decline until the early 1980s and a modest revival thereafter.

Another relevant time series for the Netherlands concerns the average employment size of business establishments in the years 1930, 1950, 1963 and 1978. These data, which were taken from Ritzen and van der Ven (1990), are available for industry and for several service sectors. We have completed this dataset with more recent data on average firm size in 1983 and 1993, taken from the CBS Statistical Time Series 1899-1994.

A SHIFT-SHARE ANALYSIS OF THE SELF-EMPLOYMENT RATE

Tables 1 and 2 summarize the main developments of respectively total employment shares and self-employment rates of each of the three major sectors. From these tables a number of observations can be made. First, in 1899 total employment in the Netherlands was evenly distributed over agriculture, industry (including manufacturing and construction) and services (including trade and transportation). In 1960 the share of agriculture had shrivelled to 10%, while industry and services each took 45%. During the following decades services continued their growth, while the share of industry declined to 20% in 1997. Second, self-employment rates in agriculture, while historically high, have further increased in recent decades. In industry the self-employment rate declined from 25% in 1900 to below 5% in the mid-eighties, and rebounded thereafter. In the services self-employment decreased from 20 to 10%, while levelling off in recent years.

The availability of these data for agriculture, industry and services also allows for a decomposition (shift-share) analysis. This will allow us to answer our first research question, concerning the role of the changing sectoral composition of the Dutch economy versus within-sector trends in explaining the long-term development of the self-employment rate in the Netherlands. Given the following definition (with the capital subscripts A, I and S referring to agriculture, industry and services respectively):
Our shift-share analysis entails applying equation (5) to the available data for all subperiods. The first terms of each line in the equation add up to the influence of the changing sector composition. Taken together, the second terms represent the impact of within-sector shifts in the rate of self-employment. Each line closes with a so-called cross-term. The main results are presented in table 3. The analysis gives rise to the following conclusions. During the period 1900-1960 the overall self-employment rate in the Netherlands decreased from 25% to 15%. This decline was equally due to the strong decline of the share of the agricultural sector and to the decreasing self-employment rates within all major sectors, particularly within industry. The 1960s and 1970s show a further decline in self-employment that was mainly due to continued upscaling of most sectors and only partly to sectoral shifts. The re-emergence of self-employment in the late 1980s and the 1990s is fully due to a new trend of downscaling in industry and (to a lesser extent) services, while there is no net effect of sectoral shifts. We have also carried out an analysis excluding agriculture (not presented in this paper). The results of this exercise more clearly bring out the minor effect of the increasing share of services in recent decades, but apart from that confirm the findings including agriculture.

A COROLLARY: AVERAGE FIRM SIZE IN THE NETHERLANDS

We have also carried out a shift-share analysis of average firm size, using the Dutch data on average establishment size during the period 1930-1978 and on average firm size during 1983-1993, while distinguishing between industry and services. Table 4 and table 5 summarize the data. As can be seen from table 5, average establishment size increased between 1930 and 1963, while stabilizing in the period until 1978. Recent figures for the period 1983-1993 demonstrate a subsequent slight decline in average firm size. A shift-share analysis can be carried out through the following equation:

\[
e = \frac{l_A}{l} \cdot e_A + \frac{l_I}{l} \cdot e_I + \frac{l_S}{l} \cdot e_S
\]

it also holds:

\[
\Delta \left( \frac{e}{l} \right) = \Delta \left( \frac{l_A}{l} \right) \cdot \frac{e_A}{l_A} + \Delta \left( \frac{l_I}{l} \right) \cdot \frac{e_I}{l_I} + \Delta \left( \frac{l_S}{l} \right) \cdot \frac{e_S}{l_S} + \Delta \left( \frac{e_A}{l_A} \right) + \Delta \left( \frac{e_I}{l_I} \right) + \Delta \left( \frac{e_S}{l_S} \right)
\]
The results of our shift-share analysis are presented in table 6. Our main observations are that during the period 1930-1960 the upscaling of both industry and services were the overriding determinants, while between 1960 and 1978 a slower rate of upscaling within both sectors and a more rapidly declining establishment share of the (relatively large-scale) industrial sector balanced one-another. In recent years a new trend towards downscaling of industrial firms and to a lesser extent service firms, and an increase in (relatively small-scale) business start-ups in both sectors, was the major cause of the decline in overall average firm size. At the same time, a higher growth of the number of service firms than that of industrial firms added to this effect, due to the smaller average firm-size in the services sector.

CONCLUSIONS

The main lesson from the reviewed earlier research is that, to our knowledge, a so-called shift-share analysis of disaggregated time series data pertaining to non-agricultural self-employment has never been carried out and published for either the U.S. or any other OECD country. Such an analysis of sectoral self-employment data for the Netherlands has been the core purpose of our research. A shift-share analysis of a new and unique dataset spanning the period 1899-1997 strongly supports the view that both the longstanding decline in self-employment and its recent revival are, for the greater part, not a statistical artefact due to a changing sectoral composition of the economy. On the contrary, as was also revealed by the empirical research on our second, corroborative, research question, a long-term trend toward upscaling followed by historically anomalous downscaling in industry and, to a lesser extent, in services is the major proximate cause. Available time series data on average firm size in other countries, in particular the U.S., support this view, both for the long historical period between roughly 1820 and 1960 and for recent decades. This conclusion calls for a continued search for ultimate causes within the domains of technology, economics, institutions and culture (see Verheul, Wennekers, Audretsch and Thurik, 2002).

NOTES

1 It is pointed out that the relevant shares in a shift-share analysis of average firm size are the sector shares with respect to the number of firms or establishments, while in a shift-share analysis of the self-employment rate the shares with respect to employment are the relevant ones.
REFERENCES


FIGURES AND TABLES

Appendix on the data for the Netherlands

The purpose of this appendix is to provide background information (sources, definitions) on the data for the Netherlands that have been used in this paper. All data were collected from various official Central Bureau of Statistics (CBS) sources and publications. With respect to self-employment, data on the years 1899, 1909 and 1930 have been collected from the Population and Occupation Censuses. Data on 1947 and 1960 have been taken from Statistical Note-books, which were based on Population and Occupation Censuses. For the years mentioned above, self-employed people were described as “business owners/managers” (in Dutch: “bedrijfshoofden”). These data are disaggregated into a number of sectors. For the years 1971 and 1981, data were taken from the Labor Censuses. Unfortunately, for 1971 only data with respect to self-employed persons including unpaid family workers were available. Hence, 1971 is left out of the shift-share analysis. Data on the most recent years, 1987 and 1997, have been collected from the Labor Accounts. With respect to the labor force, the Statistical Time Series 1899-1994 provided data on a sectoral level for all years except 1987 and 1997. Distinguishing between employed and unemployed persons (in fact “sector unknown” inclusive of the unemployed), this source allowed for the distinction between labor force and total employment. For the latter years, data on total employment are available from the Labor Accounts. In the present paper we have not presented our results for the period 1987-1997, because there was no added value with respect to the analysis of the longer period 1981-1997. Furthermore, some definitional discrepancies between the data for 1960, 1981 and 1997 cannot fully be
ruled out. Because an analysis restricted to a smaller number of statistically consistent sub-periods gave rise to similar conclusions as the presented research spanning the full period 1899-1997, we do not expect these discrepancies to be of major importance.

With respect to average business (establishment) size, data on employment and the number of business establishments for the years 1930, 1950, 1963 and 1978 were taken from Ritzen and van der Ven (1990). These data are available for industry and four major service sectors. Data on the number of firms and employment in 1983 and 1993 were added from the Statistical Time Series 1899-1994. Note the difference between *average firm size* in 1983 and 1993, and *average establishment size* in the other years. In general average establishment size will be smaller, since a firm may operate from several establishments. The following scheme summarizes the data sources used.

### Sources of the data

<table>
<thead>
<tr>
<th>Data</th>
<th>Source</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business</td>
<td>Population and Occupation Census (&quot;Volks- en beroepstellingen&quot;)</td>
<td>1899, 1909, 1930</td>
</tr>
<tr>
<td>owners/managers</td>
<td>,, Statistical Note-book (&quot;Statistisch zakboek&quot;)</td>
<td>1947, 1960</td>
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<tr>
<td>Self-employed</td>
<td>Labor Census (&quot;Arbeidskrachtentelling&quot;)</td>
<td>1971*, 1981</td>
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<td>,,</td>
<td>Labor Account (&quot;Arbeidsrekeningen&quot;)</td>
<td>1987, 1997</td>
</tr>
<tr>
<td>Employment</td>
<td>Labor Account</td>
<td>1987, 1997</td>
</tr>
<tr>
<td>Firms</td>
<td>Statistical Time Series</td>
<td>1983, 1993</td>
</tr>
<tr>
<td>,,</td>
<td>Statistical Time Series</td>
<td>1983, 1993</td>
</tr>
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* Number of self-employed only available *including* unpaid family workers.
Figure 1  Self-employment rate in total employment, The Netherlands 1899-1997

Table 1  Shares of agriculture, industry and services in total employment, The Netherlands 1899-1997.

<table>
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</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>31.4%</td>
<td>28.3%</td>
<td>20.8%</td>
<td>19.6%</td>
<td>11.0%</td>
<td>5.3%</td>
<td>4.1%</td>
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<tr>
<td>Industry</td>
<td>32.2%</td>
<td>32.7%</td>
<td>36.8%</td>
<td>37.4%</td>
<td>43.4%</td>
<td>30.7%</td>
<td>21.8%</td>
</tr>
<tr>
<td>Services</td>
<td>36.4%</td>
<td>39.0%</td>
<td>42.3%</td>
<td>43.0%</td>
<td>45.6%</td>
<td>63.9%</td>
<td>74.1%</td>
</tr>
<tr>
<td>Total</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Source: EIM, based on CBS
Table 2  Self-employment rates with respect to employment in agriculture, industry and services, The Netherlands 1899-1997.

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</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>0.315</td>
<td>0.374</td>
<td>0.406</td>
<td>0.337</td>
<td>0.501</td>
<td>0.542</td>
<td>0.486</td>
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<tr>
<td>Industry</td>
<td>0.268</td>
<td>0.222</td>
<td>0.143</td>
<td>0.135</td>
<td>0.076</td>
<td>0.043</td>
<td>0.066</td>
</tr>
<tr>
<td>Services</td>
<td>0.216</td>
<td>0.186</td>
<td>0.169</td>
<td>0.177</td>
<td>0.154</td>
<td>0.095</td>
<td>0.101</td>
</tr>
<tr>
<td>Total</td>
<td>0.264</td>
<td>0.251</td>
<td>0.208</td>
<td>0.193</td>
<td>0.158</td>
<td>0.102</td>
<td>0.109</td>
</tr>
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Source: EIM, based on CBS

Table 3  Results from the shift-share analysis on the self-employment rate in agriculture, industry and services, The Netherlands 1899-1997.

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<tbody>
<tr>
<td>Changes <em>between</em> sectors</td>
<td>-0.003</td>
<td>-0.013</td>
<td>-0.003</td>
<td>-0.016</td>
<td>-0.010</td>
<td>-0.001</td>
</tr>
<tr>
<td>Changes <em>within</em> sectors</td>
<td>-0.007</td>
<td>-0.024</td>
<td>-0.013</td>
<td>0.000</td>
<td>-0.037</td>
<td>0.009</td>
</tr>
<tr>
<td>Cross-product changes</td>
<td>-0.003</td>
<td>-0.006</td>
<td>0.001</td>
<td>-0.018</td>
<td>-0.009</td>
<td>-0.001</td>
</tr>
<tr>
<td>Total change</td>
<td>-0.013</td>
<td>-0.043</td>
<td>-0.015</td>
<td>-0.035</td>
<td>-0.056</td>
<td>0.007</td>
</tr>
</tbody>
</table>

Source: EIM, based on CBS

Table 4  Shares of industry and services in the number of establishments, 1930-1978, respectively in the number of firms, 1983-1993, The Netherlands.

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</tr>
</thead>
<tbody>
<tr>
<td>Industry</td>
<td>36.0%</td>
<td>37.6%</td>
<td>34.4%</td>
<td>27.1%</td>
<td>19.1%</td>
<td>16.1%</td>
</tr>
<tr>
<td>Services</td>
<td>64.0%</td>
<td>62.4%</td>
<td>65.6%</td>
<td>72.9%</td>
<td>80.9%</td>
<td>83.9%</td>
</tr>
<tr>
<td>Total</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>
Table 5  Average size of establishments, 1930-1978, and average firm size, 1983-1993, in industry and services, The Netherlands.

<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Industry</td>
<td>6.9</td>
<td>10.5</td>
<td>15.5</td>
<td>17.7</td>
<td>16.5</td>
<td>15.3</td>
</tr>
<tr>
<td>Services</td>
<td>3.1</td>
<td>3.6</td>
<td>4.7</td>
<td>5.0</td>
<td>8.6</td>
<td>8.3</td>
</tr>
<tr>
<td>Total</td>
<td>4.4</td>
<td>6.1</td>
<td>8.4</td>
<td>8.4</td>
<td>10.1</td>
<td>9.4</td>
</tr>
</tbody>
</table>

Source: EIM, based on CBS

Table 6  Results from the shift-share analysis on average establishment size, 1930-1978, and average firm size, 1983-1993, in industry and services, The Netherlands.

<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Changes between sectors</td>
<td>0.1</td>
<td>-0.2</td>
<td>-0.8</td>
<td>-0.2</td>
</tr>
<tr>
<td>Changes within sectors</td>
<td>1.6</td>
<td>2.6</td>
<td>0.9</td>
<td>-0.4</td>
</tr>
<tr>
<td>Cross-product changes</td>
<td>0.0</td>
<td>-0.1</td>
<td>-0.1</td>
<td>0.0</td>
</tr>
<tr>
<td>Total change</td>
<td>1.7</td>
<td>2.3</td>
<td>0.0</td>
<td>-0.6</td>
</tr>
</tbody>
</table>

Source: EIM, based on CBS