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Crowding out the freight handling of the city centers during economic boost

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In a city there are a lot of economic activities located both in the metropolitan center and in the outskirts. In e.g a popular area of Oslo as the rents rise one can observe the attractive businesses for the habitants such as small restaurants, cafes and shops tend to be crowded out in favor of offices such as real estate agents. The attractiveness of the area is destroyed and people tend to visit other areas in the city.

When demand is increasing during an upswing in the economy, rents for locations tend to rise fast. The rents are higher the closer to the center of a city. When rents increase most profitable activities using little space stay on (typically service activities such as real estate offices, banking or other financial services). Shops and smaller manufacturing businesses with more spatial needs per employed person will start to look for areas in the outskirts of the city with lower rents.

Several have studied the need for agglomeration on one hand and the fight against congestion in an urban area; e.g. Gerald Carlino (1987) and Edwin S Mills (1967). While J V Henderson (1988) gives proof that when the population in a country increases over time the number of cities also increases as well as the size of each city. J Odland (1976) has made a theoretical location model where the location trends are explained.

Then new activities that are profitable (or new businesses optimistically think they will be profitable) will move in. An increase in the rent is more costly per employed person for a shop than an office. During a boom it is likely that a shop located in the centre of a city that goes bust due to higher costs. The space the shop rented is then typically let out to a real estate agency or another service producing company. Shops tend to pop up in the outskirts of the city where the rents are lower. In this way shops and other goods handling businesses are crowded out of the city centers. The freight activity in the city centers will then be reduced during a boom because shops and manufacturing (e.g. printing and publishers) is relocated by such process described above.

Is it possible to trace this dynamics of a location process from economic statistics?

The case of Norway

When the market trends make a shift it has been an experience earlier the cities are not hit as much as other areas in Norway. This was not the case in 2002 and 2003. This time it was the other way around. The unemployment rates in the cities were higher compared to the country as a whole. This was due to that the public sector also were cut and that the effect was that the household spending went down. Both the demand for services and goods in the cities were hit of the cuts. Many exporting companies (trading in salmon, aluminum and tourism) did sell as much as before. The activities of these companies are mostly located outside the main cities.

In the figures there was a slump in the Norwegian main land economy during 2002 and 2003. The yearly growth rates of the gdp for the main land (oil and gas activities are excluded) were around 1.5 % which is on the lower side in a historical trend. This slump was followed by an economic boom; from 2004 to 2007 the yearly growth rates for the main land economy were 4-5 %.

In this paper we will look at local effects in the three biggest cities of Norway with focus at the freight handling in cities. The cities investigated are Oslo (587 000 inhabitants), Bergen (257 000) and Trondheim (171 000).

According to economic thinking one should see that several types of services fought to get the best locations in the cities in order to attract the best employment and attract demand. Shops and commodity based activities should then be pushed effectively out of the citycenters in order to give room for the service activities.

But does it actually happen? Will economic statistics give any evidence for this?

Because we are looking at local effects, we will focus on the number persons employed. We do not have proper gdp growth rates of the cities calculated because this is too difficult to measure. But in terms of growth rates there is a close link between the gdp growth rates and the growth in the employment. So we use employment as a variable for the economic effects we intend to measure.

We will ask the question; is it possible from analyzing the statistics of different activities that are heavy users of freight transport are crowded out during the years of the boom of the economy compared to the earlier low activity years? Which industries are employing people in the city centre during a boom of the economy?

In an urban economy one should expect the rents increase when the demand for goods and services rise. The rents are higher closer to the center of the city. The industries that do not have a strong ability to handle such rents will start look for other locations for their activity when the rents are up. The demand for business services increases during the boom. The rents in the city centers are bid up and because the profit per employed person is much higher in services than in the goods production, they are crowded out to the outskirts of the cityarea.

Looking at the sales of rental businesses for the two periods we find that the yearly change in the recession period from 2002 to 2004, the sales dropped while

in the boost period from 2004 to 2007 the sales soared. This is shown in the figure below:

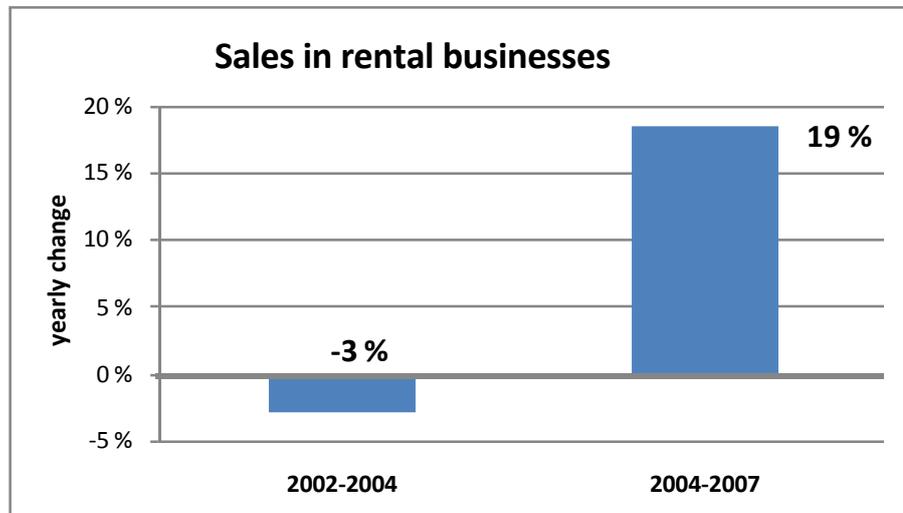


Figure 1. The average yearly change in the sales in rental businesses in Norway for the two periods 2002-2004 and 2004-2007. Source: Statistics Norway

The statistics of the sales of the rental businesses is just reported for Norway, but in the three cities are estimated to be around 50 % of the total rental businesses in Norway. One should therefore expect that the changes in the rents observed above, should be applicable for the three cities.

We have investigated data for three biggest cities (Oslo, Bergen and Trondheim) in Norway and see that is just what is happening. The result of the change in location of the goods industries is a decline in the freight transport in the city centers as these are industries that handle most of the freight transport. This makes more room for the more profitable service sector (such as business services).

The Method

We have used data from the Business register in Statistics Norway for the years 2002, 2004 and 2007 by industry sorted on the three cities. All activities are located by a postal code where the activity actually takes place. One problem is to sort out what we can call "the main office effect"; say a company is divided at three locations, the company only reports their main office address. When scrutinizing the company data thoroughly one will detect some errors due to the responses from the businesses as they just report their main office address. There are defined around 60 industries in the Business register. The data in the register are continuously updated, but we were only interested in yearly data. The data we have looked at is the most updated from second quarter each of the three years investigated.

The center in each city could then be defined quite easily by selecting the postal codes covering the city center. Oslo is divided in 666 postal zones of which 155

were defined as the center. Bergen 51 zones of which 30 in the center. Likewise 68 zones divided Trondheim of which 45 were defined as the center.

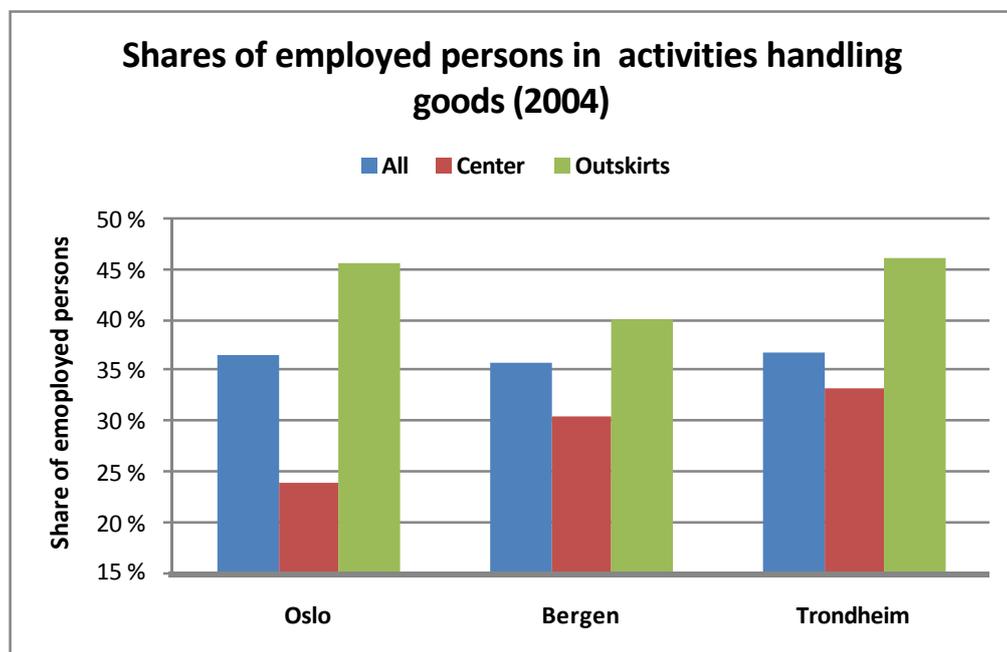


Figure 2. Shares of employed persons in activities handling goods in parts of the three cities. 2004. Source Business register of Statistics Norway

Handling goods are activities as ISIC sectors 1-6 (including hotel and restaurants) while services are defined as the rest of the activities located in the cities.

The employment share of goods handling is bigger in Oslo due to that Oslo is the main location for most importing companies in Norway. But Oslo has the lowest share of employment in such activities compared to the other two cities. All the shares are calculated in the mid year (2004) of the two periods investigated.

The result of the calculations

The trends of the shares of the employment of goods handling in the three cities centers are falling figure 3 while they are rising in the outskirts of the cities.

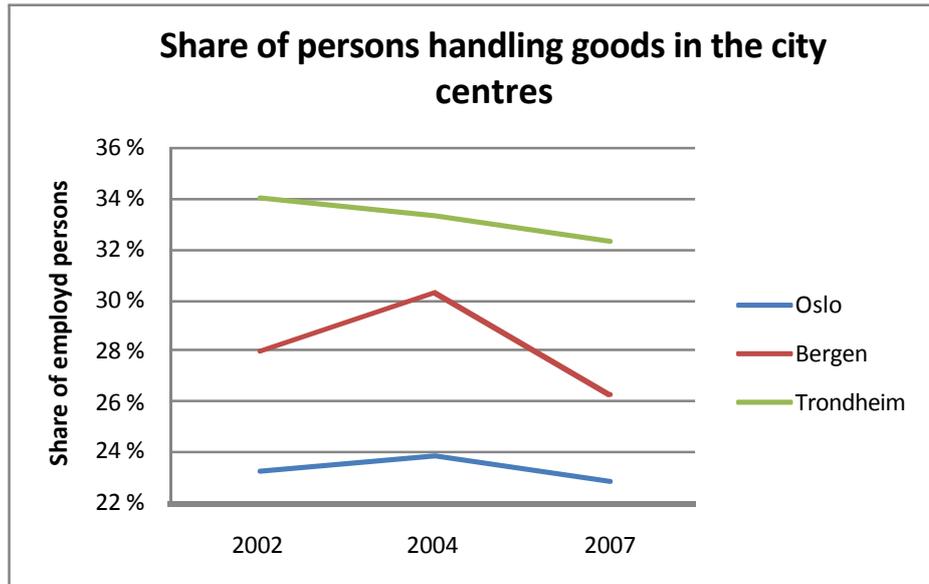


Figure 3 The share of employment of goods handling in the centers of the three cities from 2002 to 2007. Percent of the number of employed persons in the city centers. Source Business register of Statistics Norway

Even in the recession period (2002-2004) there is a falling tendency in both Oslo and Trondheim, but not in Bergen. But in the boom period 2004-2007 the share is falling at faster pace in Bergen and Trondheim, but not so in Oslo where the fall is more or less at the same pace as in the recession period.

A comparison of the goods handling and service producing activities in the city centers with the same activities in the for the whole city, there is evidence of the goods handling is crowded out.

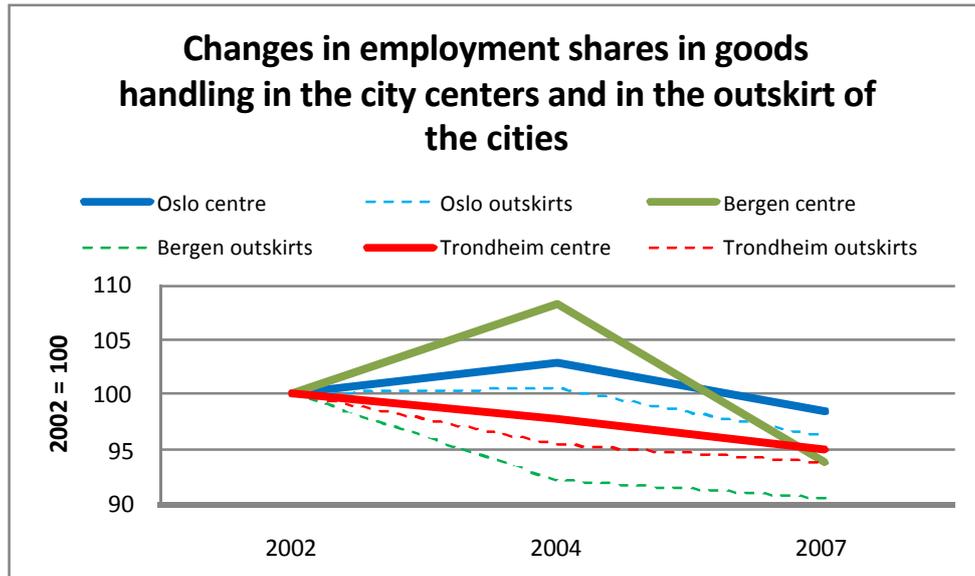


Figure 4 Changes in the employment shares in goods handling in the city centers and the outskirts of the cities. 2002 =100. Source Business register of Statistics Norway

The figure above gives clear evidence for Oslo on our hypothesis that the goods handling is crowded out during the boom (2004-2007). For Bergen it is also clear evidence, but the employment in goods handling is even increasing during the recession period.

For Trondheim the data gives not clear evidence for the phenomenon explained. The reason for that can have two causes:

1. Trondheim is smaller and the city centre is small. It is therefore more incidental whether the employment in goods handling shows a dip when the crowding out starts.
2. The city center of Trondheim is defined as a bigger part of the total city compared to the other two cities (Oslo and Bergen). Trondheim city centre covers 66 % of all the zones, while the same percentage for Oslo and Bergen is 23 and 59.

To give the total picture of the changes in the employment in the goods handling compared to the employment in the service sectors in the city centers and the total city, a figure is produced below. For the poles in the figure goods in the city centers for the boom period 2004-2007, we see that Trondheim does deviate from Oslo and Bergen as commented above.

To show the growth rates for the three cities and a comparison to the growth in the centers, the figure below is given.

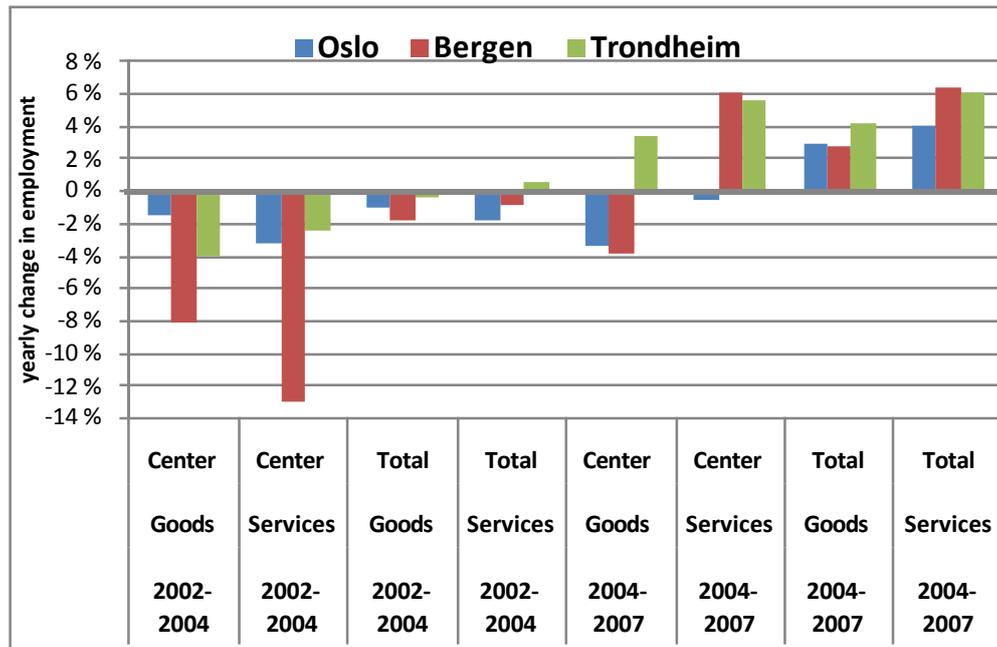


Figure 5. The growth in employment in the three cities during the two periods of goods handling and service producing activities. Source Business register of Statistics Norway

The fall in the activities handling goods is less than the fall in the service sector during the slump (2002-2004) in the city centers except for Trondheim. The rise in the activities handling goods is smaller during the peak period (2004-2007).

A Comment of the results

In a US panel study of small companies (microenterprises with less than 4 employed persons) by Steven Deller and James C Mc Cannon jr (2009) they state that goods producing firms tend to have a negative statistically significant relationship with growth in population and employment, but an insignificant relationship with growth in per capita income. The result we have from Oslo and Bergen is in accordance to the results found in this study. (Goods producing firms are defined as firms in agriculture, construction, mining and manufacturing. We have included trade and hotel and restaurants in our definition of employment in goods handling sectors.)

Further work

The selection of cities would have been more interesting if the problem was phrased for bigger capitals of larger sizes of population. Even Oslo is in an international setting a small city. Bergen and Trondheim do not have large city centers. The goods handling become therefore very small in terms of the population.

But one problem one counters of using bigger cities from e.g. Europe, is that Norway and Germany or Italy are not often in the same trade cycle. Norway differs as a producer of raw materials e.g. Germany as a producer of finished goods.

It should of course been nice to have a wider time span with even more up and downs to see if the hypothesis of crowding out goods handling could be verified.

References

E S Mills An Aggregated Model of Resources Allocation in a Metropolitan Area. The American Economic Review. Vol 57. No 2 Papers and Proceedings of the Seventyninth Annual Meeting of the American Economic Association. May 1967 pp 197-210.

G A Carlino Trends in Metropolitan Employment Growth. Federal Reserve Bank of Philadelphia. Business review (July/August 1988).

J V Henderson: Urban Development – Theory, fact and illusion. Oxford University press. 1988.

J Odland: The spatial arrangement of urban activities; a simultaneous location model. Environment and Planning A;8; pp 779-791 . (1976)

S Deller and J C McCannon: Microenterprises and economic growth: a panel study of the US states 1977-1997. Applied Economic Letters 16: 13, 1307-1312