Denmark's Competitiveness and Export Performance – Summary

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INTRODUCTION AND SUMMARY

The Danish economy is characterised by close integration with the rest of the world in both financial and real economic terms. The sum of Denmark's imports and exports almost matches the total gross domestic product, GDP, and about one in every four jobs depends directly or indirectly on exports. While Danish exports of goods and services in volume terms have doubled since 1995, exports have fallen as a share of the overall import market. Part of this fall reflects the increased emerging market share of world trade, but Denmark's competitiveness also plays a role. Part 2 of this Monetary Review contains a longer article on Denmark's competitiveness and export performance. This article summarises the most important points and conclusions.

Exports make up the difference between the influx of resources (production and imports) on the one hand, and domestic absorption (consumption and investment) on the other. During periods of strong domestic demand, a smaller share of output will be left for exports compared with periods of normal economic conditions. This was the case during the boom years in the mid-2000s.

Periods of strong domestic demand are usually characterised by a tight labour market. This normally leads to wage increases exceeding what is warranted by productivity growth. The result is an adverse impact on competitiveness and squeezed exports. In recent years, Danish firms' international competitiveness has deteriorated when calculated on the basis of relative unit labour costs, reflecting both higher wage growth and weaker productivity growth in Denmark than abroad.

Under a fixed-exchange-rate regime such as the Danish one, where the principal objective of monetary policy is to keep the krone stable, fiscal policy is the primary instrument for managing domestic demand. Denmark's competitiveness calculated as production costs relative to international production costs thus depends on the fiscal policy pursued.

A country's export performance is not just dependent on the corporate sector's ability to compete with foreign firms through low produc-

tion costs. The composition of exports across product groups and destination countries also plays a role. By being present in expanding markets, Denmark may see its share of global exports grow, even if its market shares in individual submarkets remain unchanged. We find that the composition of Denmark's exports of goods across product groups since 1995 has made a moderately positive contribution to the market shares in its eight largest export markets. The composition across countries has made a largely neutral contribution to the market share over the period as a whole.

Low-tech products account for a large share of Denmark's exports compared with the other OECD countries. This reflects Denmark's specialisation in food, beverages and tobacco, among other products. On the other hand, Danish firms are underspecialised when it comes to high-tech products. What is important is that Denmark is present in industries offering opportunities to benefit from a high level of knowledge in order to cover the high Danish wages. This is also possible in industries other than the high-tech ones. For example, the technological level of the manufacturing process may be high as regards low-tech products. The ability to be present in the fastest growing markets through flexibility and adaptability is also an expression of competitiveness. This ability is best promoted through structural-policy measures that ensure free competition and a flexible labour market.

Traditionally, Denmark's competitiveness has been associated with price competitiveness, which is calculated on the basis of the prices of goods manufactured in Denmark relative to goods manufactured in competitor countries. But in recent years, there has been growing focus on the countries' non-price competitiveness. It is difficult to measure a country's non-price competitiveness, so it is usually assessed on the basis of indicators. Examples include expenditure for research and development, the number of patents awarded and the level of education of the labour force. Assessed on the basis of these indicators, Denmark's non-price competitiveness is good compared with other Western countries. This is reflected in improved terms of trade.

In order to analyse the drivers of export market growth for a group of OECD countries, we construct an econometric model. The model explains exports in terms of both price and non-price factors. While there is a clear relationship between the development in a country's price competitiveness and its export performance, the effect of non-price competitiveness is less evident. However, countries where research and development expenditure has risen markedly have tended to perform better. The analysis also confirms that in Denmark, price competitiveness has curbed exports, while non-price competitiveness has made a positive contribution.

Despite the loss of market shares, the Danish economy continues to be in a relatively favourable position. The balance of payments displays a surplus, and structural unemployment is moderate. For this to continue, it is crucial that fiscal policy and the other economic policies are designed so as to ensure that domestic demand develops in accordance with the output potential of the economy. This offers the best conditions for stable export growth combined with wage increases in step with the growth in productivity.

Furthermore, being present in the fastest growing markets may also have a favourable effect. This applies across both countries and product groups. The composition of exports across countries and markets is largely a result of Denmark's business structure, which evolves only slowly over time.

It is difficult to predict the markets where demand will see the strongest future growth. However, it is important to focus on the flexibility and adaptability of the Danish economy to ensure that production resources will be attracted to the industries that are internationally competitive. Finally, the ability to compete on other factors besides price may be improved, e.g. through stronger focus on research and development. While there is a clear favourable effect of adapting fiscal policy to cyclical developments, the other ways to improve competitiveness are associated with a higher degree of uncertainty.

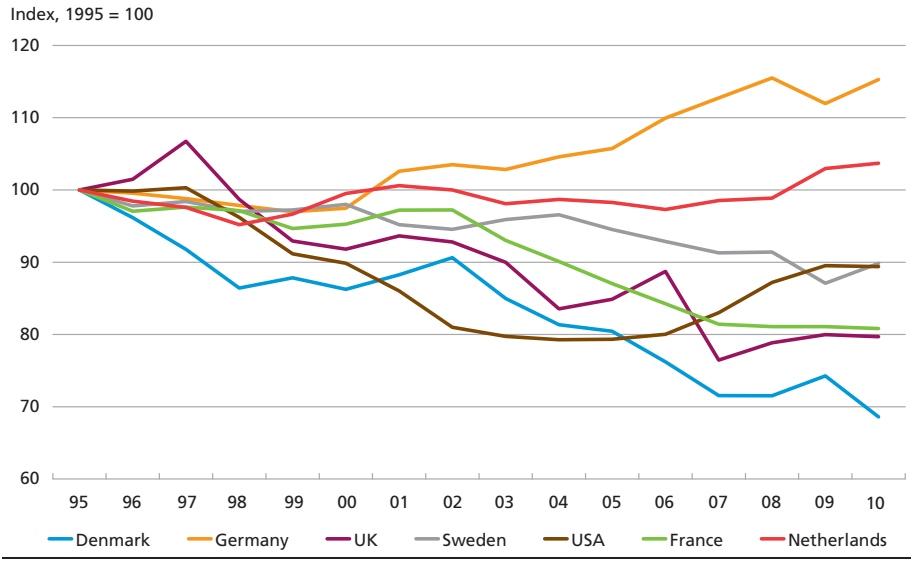
EXPORT MARKET SHARES AND PRICE COMPETITIVENESS

A country's market share is measured as its exports relative to its export markets. Like France, Sweden and the UK, Denmark has been unable to maintain its market share for exports of goods in volume terms, cf. Chart 1. However, the loss of market shares is less pronounced when including exports of services. This reflects how the market share for total exports is supported by growth in exports of sea transport.

Denmark's loss of market shares in volume terms reflects that import volumes abroad have grown at a faster rate than Danish exports. In a period of increased international division of work and integration of e.g. the BRIC countries in the world economy, generally declining market shares for Western European countries and the USA do not necessarily reflect a deterioration of competitiveness,[1] but Denmark's loss of market shares in volume terms is relatively large compared with other

[1] The BRIC countries, i.e. Brazil, Russia, India and China, are often highlighted as examples of countries whose relative weights in the world economy have increased substantially in recent years.

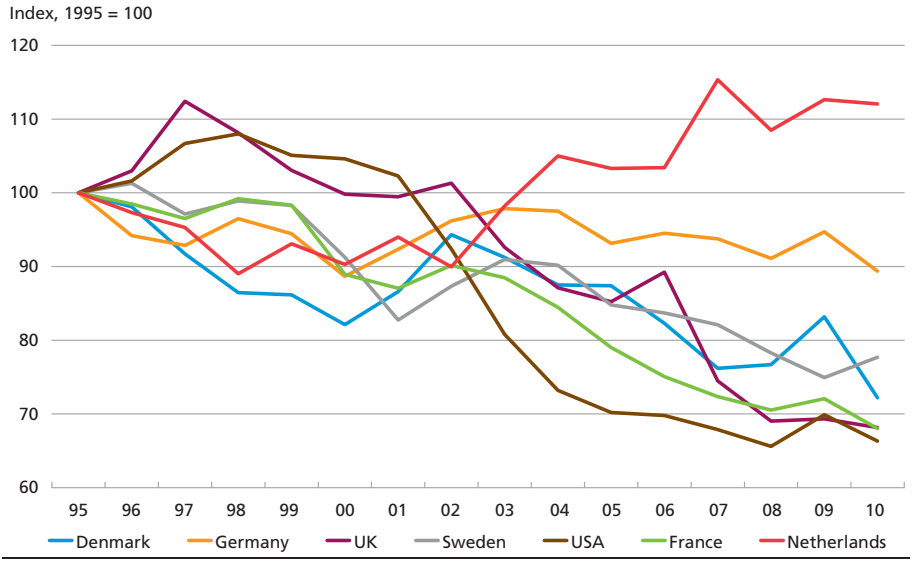
MARKET SHARES FOR EXPORTS OF GOODS IN VOLUME TERMS Chart 1



Note: Annual observations. The most recent observations are from 2010.
The market shares are calculated as the country's exports of goods relative to its export market for goods. The export market is a weighted average of the destination countries' total imports. The sender country's 2005 market share in the country under review is used as weights.
Source: OECD, *International Trade Statistics*, OECD, *National Accounts*, and own calculations.

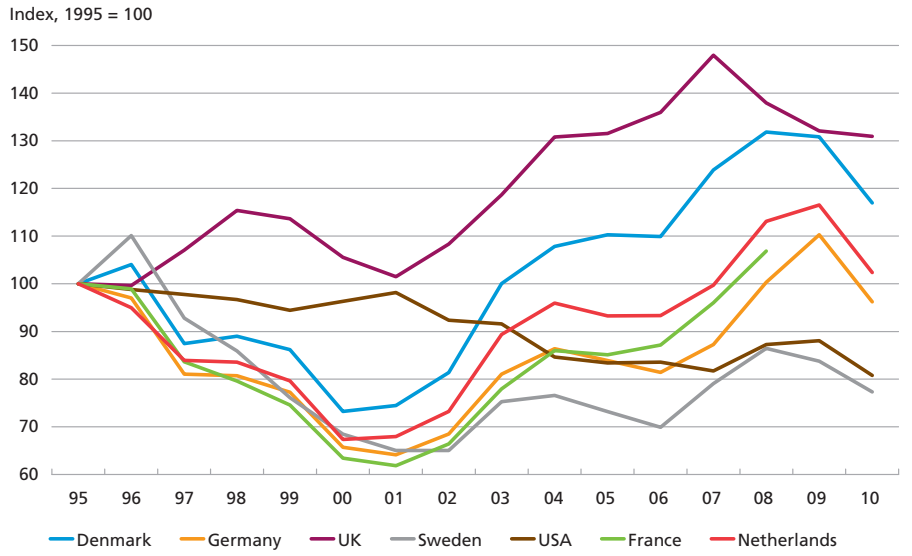
Western European countries. The loss of market shares in volume terms for Danish exports equalled just over 30 per cent over the period, cf. Chart 1, while the loss in value terms was slightly smaller, cf. Chart 2.

MARKET SHARES FOR EXPORTS OF GOODS IN VALUE TERMS Chart 2



Note: See the note to Chart 1.
Source: OECD, *International Trade Statistics* and own calculations.

UNIT LABOUR COSTS FOR MANUFACTURING IN DOLLARS Chart 3



Note: Annual observations. The most recent observations are from 2010 with the exception of France, for which the most recent observations are from 2008.
Source: OECD, *Main Economic Indicators*.

In 2011, labour costs amounted to about one third of the total production costs of Danish firms and two thirds of gross value added. So when assessing price competitiveness on a cost basis, it is important to consider the labour costs of manufacturing a unit of a given product, i.e. the unit labour costs, in a common currency to allow for the development in labour costs, exchange rates and productivity across countries. Over the period 1995-2010, the rise in unit labour costs was higher in Denmark than in most comparable countries, cf. Chart 3, reflecting that wages increased considerably more in Denmark than abroad, and that productivity growth was weak. The rise in unit labour costs is a major factor behind the decline in Denmark's market shares.

DISAGGREGATED ANALYSIS OF DANISH EXPORT PERFORMANCE

Denmark's export performance does not only depend on its ability to compete with foreign manufacturers within individual product groups. The composition of exports across products and destination countries also plays a role. Being present in expanding markets may cause Denmark's total market share to grow, even if its market shares in individual submarkets remain unchanged. Thus, the ability to be present in the fastest growing markets through flexibility and adaptability is also an expression of competitiveness.

The importance of the composition of exports is analysed on the basis of detailed data for trade with Germany, France, the UK, Italy, the Netherlands, Norway, Sweden and the USA. These eight countries have accounted for a total of approximately 60 per cent of Denmark's exports of goods since 1995. We use data broken down by goods according to the Standard International Trade Classification (SITC) at two-digit level.

To prevent the results from being dominated by the large energy price fluctuations in recent years, the main category, "Mineral fuels, lubricants, etc.", is left out. The category entitled "Various goods and transactions not included elsewhere" is also excluded. This leaves 59 different product groups. Data are only available in value terms. This means that an increase in Denmark's market share may reflect both a strong development in exports in volume terms and improved terms of trade.

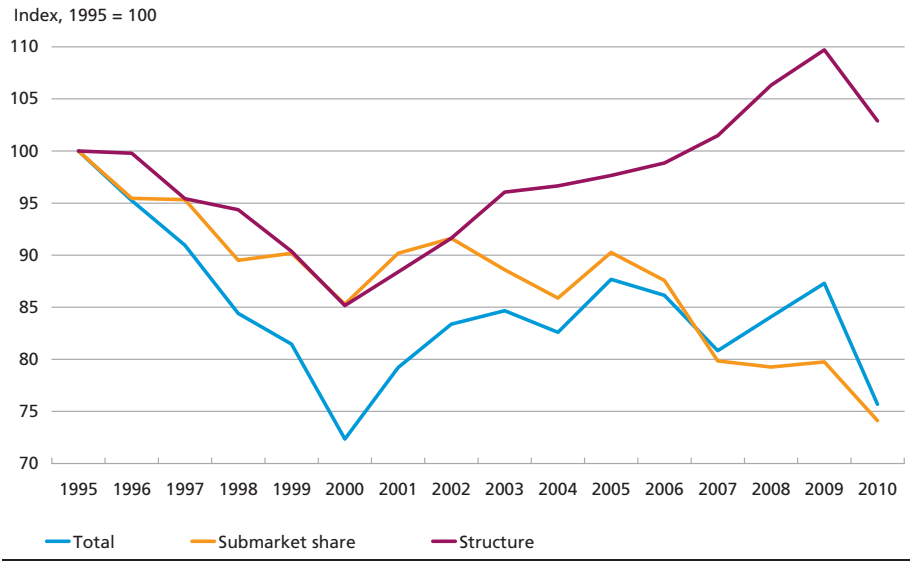
The development in Denmark's aggregate market share is decomposed into two overall effects, i.e. the *structure effect* and the *submarket-share effect*.[1] The *structure effect* indicates the hypothetical change in the aggregate export market share which would have occurred if Denmark's market share had remained unchanged across product groups and destination countries. The *submarket-share effect* is the difference between the overall change in the market share and the structure effect. This effect is thus an expression of exporters' performance in the individual submarkets. The submarket-share effect has had a clearly negative impact on market-share developments since 1995, cf. Chart 4. The contribution from the structure effect has varied over time and is now moderately positive in relation to 1995.

The structure effect can be further decomposed into three components: the *product effect*, measuring how export performance is affected by the composition of exports across products; the *market effect*, measuring how export performance is affected by the composition of exports across markets; and a third component, which captures the interaction between the product and market effects. This component is called the *mixed structure effect*.

The positive structure effect reflects that Danish exports are concentrated on product groups for which the destination market has grown since 2000 relative to the total export market, cf. Chart 5. The composition of exports across the eight countries had a negative impact on Danish exports in the period 1995-2000, primarily because import growth in the USA was much higher during that period than import growth in the European countries. Since Denmark's presence in the US

[1] A comparable analysis was conducted by the ECB (2005). The Ministry of Finance has conducted similar analyses on previous occasions, see e.g. Ministry of Finance (1986).

MARKET-SHARE, GOODS Chart 4

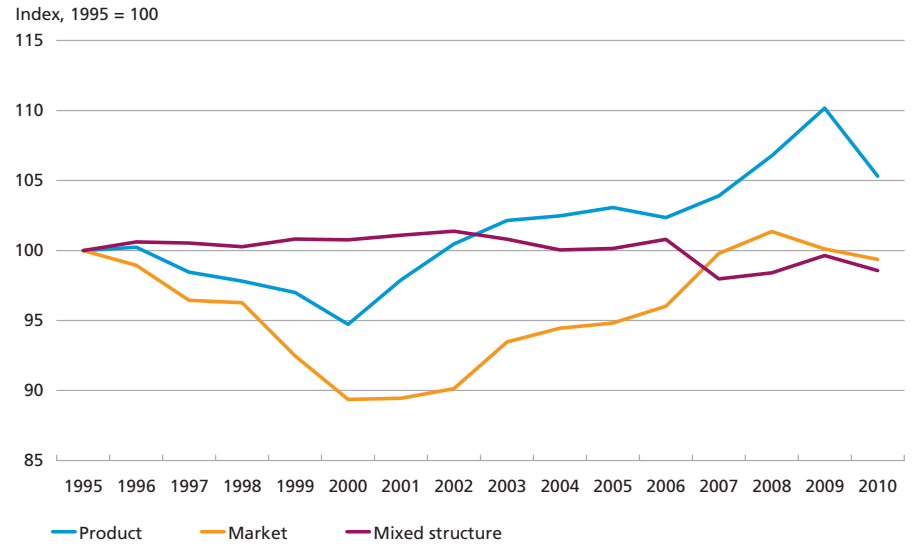


Source: OECD and own calculations.

market is relatively weak, this contributes to reducing Denmark's total market share.

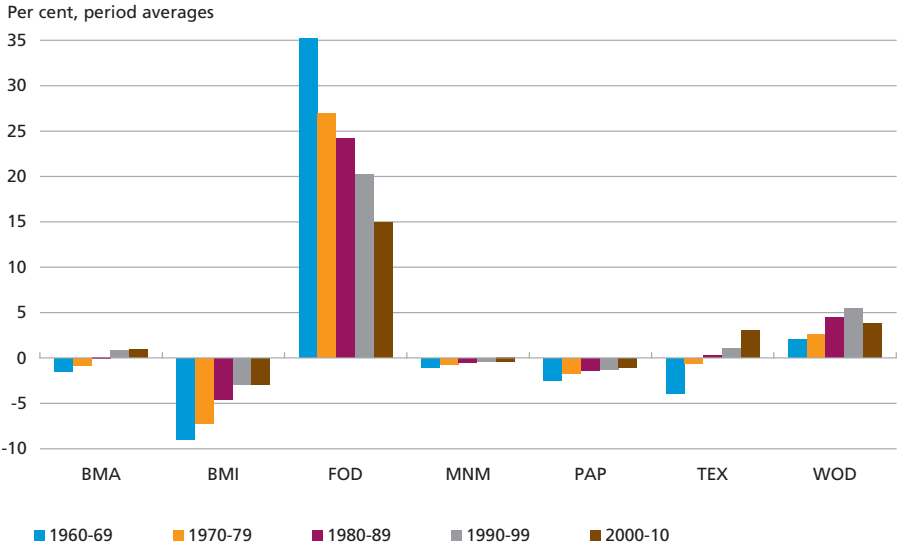
Compared with the rest of the OECD, agriculture has traditionally made up a large part of Danish exports, cf. Chart 6. This is still the case, although to a lesser degree than before. On the other hand, Denmark is

MARKET SHARE, GOODS, STRUCTURE EFFECT Chart 5



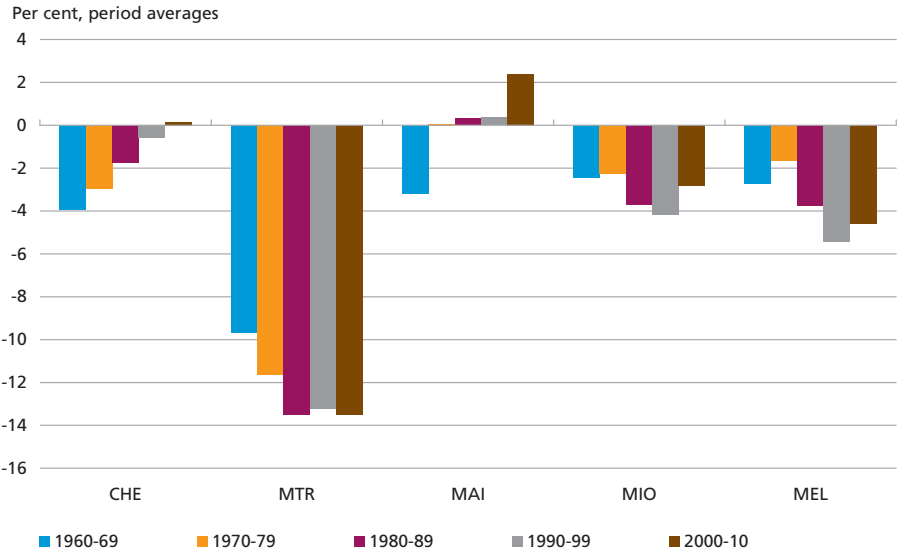
Source: OECD and own calculations.

DENMARK'S RELATIVE SPECIALISATION IN LOW-TECH PRODUCTS — Chart 6



Note: The bars indicate the difference between a sector's share of Danish exports and its share of OECD exports calculated as the period average. A high value indicates that Denmark has a relatively high level of specialisation in the sector under review. BMA: fabricated metal products; BMI: basic metal; FOD: food, beverages and tobacco; MNM: non-metallic mineral products: PAP: paper and paper products; TEX: textile and leather apparel; WOD: wood and wood products.
Source: OECD and own calculations.

DENMARK'S RELATIVE SPECIALISATION IN MEDIUM-TECH AND HIGH-TECH PRODUCTS — Chart 7



Note: The bars indicate the difference between a sector's share of Danish exports and its share of OECD exports calculated as the period average. A high value indicates that Denmark has a relatively high level of specialisation in the sector under review. CHE: chemical products; MTR: manufacture of transport equipment, MAI: manufacture of agricultural/industrial machinery, MIO: professional and scientific equipment, MEL: electrical machinery.
Kilde: OECD and own calculations.

underspecialised in medium-tech and high-tech products, cf. Chart 7. The negative specialisation in medium-tech products is mainly attributable to Denmark not having an auto manufacturing sector. However, compared with the OECD as a whole, Denmark is specialised in manufacturing agricultural/industrial machinery. The negative specialisation in high-tech production is broadly based across the "Scientific equipment" and "Electrical machinery" industries.

Due to Denmark's high costs of production, it is essential that Danish firms manufacture goods with high value added. Against this backdrop, the relative specialisation in low-tech products may seem to be a cause for concern, but there is no unequivocal connection between a sector's value added and the technological level of manufacture. Thus, because of production technology improvements, labour productivity growth, e.g. in the agriculture sector, has exceeded the average productivity growth in the economy for several years. This has resulted in high value added within the sector, even though it is categorised as low-tech. Hence, Denmark's relative export specialisation is generally neither unequivocally good nor bad.

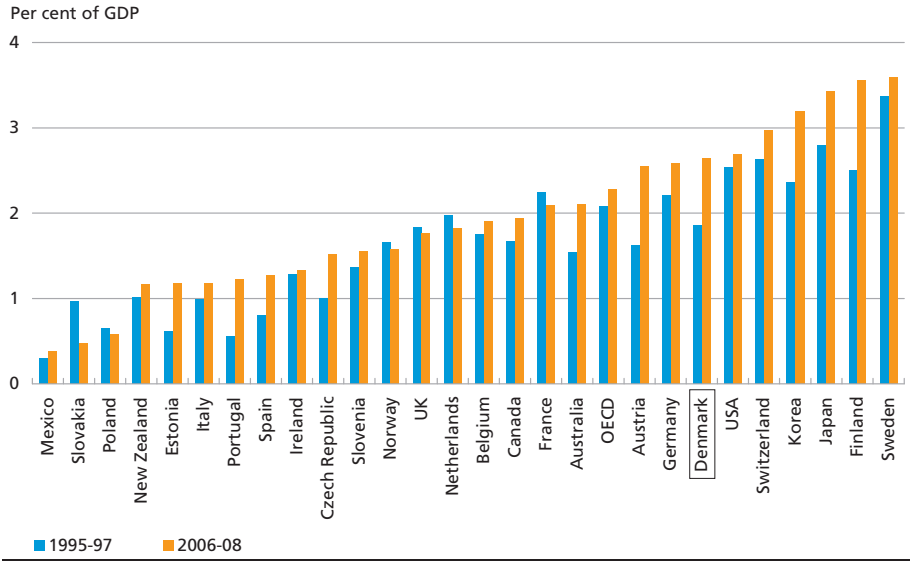
NON-PRICE COMPETITIVENESS

Competitiveness often implies price competitiveness, for example calculated on the basis of relative unit labour costs. But competitiveness depends on other factors besides prices, wages and productivity. For example, a firm can strengthen its competitiveness by improving product quality or by expanding its product range.

Because it is difficult to measure differentiation by other parameters besides price, the use of indicators is necessary. Some of the indicators of non-price competitiveness are firm-specific, while others are of a more structural nature. The firm-specific indicators include technology, research and development and the number of patents, among others, while the structural indicators include the level of education, infrastructure, export barriers, etc. Where the structural indicators measure the extent to which the corporate sector of a country is generally in a position to manufacture products of higher quality and export them, the firm-specific indicators reflect the competitive position of individual exporters in the export market.

In Denmark, as is the case in e.g. Sweden and Finland, research and development account for a relatively large share of GDP, cf. Chart 8. Compared with 1995, Danish expenditure has risen by more than 1 percentage point, moving Denmark from a below-average to an above-average position in an OECD context. This is a possible indication of

EXPENDITURE FOR RESEARCH AND DEVELOPMENT (R&D) Chart 8

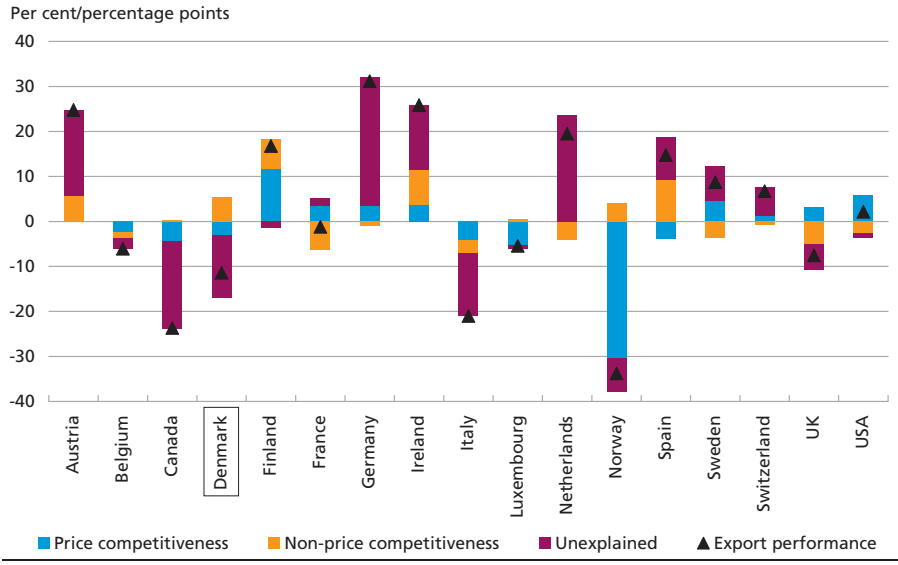


Note: The Chart shows a country's expenditure for research and development as an average ratio of GDP for the periods 1995-97 and 2006-08. For Mexico and New Zealand, an average for the period 2005-07 instead of 2006-08 is used for data availability reasons.
Source: OECD.

improved non-price competitiveness. Denmark's non-price competitiveness also shows a positive trend when assessed on the basis of the number of patent applications to the international patent offices. In addition, the share of the Danish population with tertiary education has increased slightly more over the last decade than in a number of comparable countries. Thus, Denmark has generally done relatively well in terms of some common indicators of non-price competitiveness.

In order to get a clearer indication of what has been driving exports from 1995 to 2010, we construct an econometric model estimated on the basis of data for 17 OECD countries. The model explains the growth in exports using price and non-price factors. While there is a clear relationship between the development in a country's price competitiveness and its export performance, the effect of non-price competition is less evident. However, countries where research and development expenditure has risen relatively markedly have tended to perform better. The results support the fact that non-price competitiveness has contributed positively to Danish exports, while price competitiveness has had the opposite effect, cf. Chart 9. That part of export growth which cannot be explained by the model varies across countries, being relatively large for Denmark. This indicates that some factors impacting a country's exports are not captured by the model.

DECOMPOSITION OF TREND-ADJUSTED IN EXPORT PERFORMANCE Chart 9



Note: The decomposition has been performed around the negative common trend, showing whether the two measures of competitiveness have improved or reduced the countries' export performance relative to trend. The development is based on the average value for the period 1995-97 to 2008-10. For Luxembourg, the data are from 2000-02 to 2008-10, for Switzerland, the data are from 1996-98 to 2006-08, and for the USA, the data are from 1995-97 to 2007-09.

Source: OECD and own calculations.

As illustrated above, Denmark is placed at the low end in terms of price competitiveness. Denmark is better placed if the comparison is based on indicators of non-price competitiveness, its position having improved over the last 15 years. This may contribute to explaining the improvement in Denmark's terms of trade, but the effect of non-price competitiveness is generally subject to considerable uncertainty.

LITERATURE

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Ministry of Finance (1986), Industrieksporten: konkurrenceevne og markedsudvikling (Industrial exports, competitiveness and market development – in Danish only), *Finansredegørelse* (Financial Bulletin), Chapter XII.