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# Re-exports: international comparison and implications for performance indicators

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## Abstract in English

Since the mid eighties, re-exports in the Netherlands is booming, with the exception of a short interruption in 2001 and 2002. This research shows that a relatively strong growth of re-exports is not just a Dutch phenomenon, but that there is an international trend going on. Re-exported products are at least doubly counted in world trade figures. This international re-exports trend contributes to the fact that world trade volume is growing faster than the volume of world export production. Besides, there are some serious implications for the indicators of countries' exports performances. If one doesn't take account of the implications of the international re-exports trend, the relevant export market growth for Dutch manufactures as well as the loss of market share of Dutch industrialists are overestimated.



*Key words: re-exports, export performance, market performance and loss of market share.*



## Abstract in Dutch

Sinds het midden van de jaren tachtig groeit de wederuitvoer van Nederland explosief, met uitzondering van een hapering in 2001 en 2002. Dit onderzoek laat zien dat een onstuimige groei van de wederuitvoer niet alleen een Nederlands fenomeen is, maar dat sprake is van een internationale trend. Wederuitvoerproducten worden minimaal één keer dubbel geteld in de wereldhandel. De internationale wederuitvoertrend draagt er daardoor aan bij dat het volume van de wereldhandel sneller stijgt dan het volume van de wereldproductie van exportgoederen. Bovendien zijn er gevolgen voor de indicatoren van de uitvoerprestatie van een land. Indien geen rekening wordt gehouden met de gevolgen van de internationale wederuitvoertrend, wordt de voor Nederlandse fabrikaten relevante wereldmarkt en daarmee het marktverlies van Nederlandse fabrikanten overschat.



*Steekwoorden: wederuitvoer, uitvoerprestatie, marktprestatie en marktaandeelverlies*

# Contents

# Preface

The concept of ‘re-exports’ was put on the map when CPB devoted a chapter to it in the ‘Macro-Economic Outlook 2002’. Since then, the size and development of re-exports has been considered in many descriptions of the Dutch economy, and total exports are being increasingly divided into ‘domestically-produced exports’ and ‘re-exports’. And rightly so, since it matters greatly for the future development of the Netherlands, both quantitatively and qualitatively, how both export components will develop now and in the future. The spectacular growth of re-exports in the Netherlands is due above all to the combination of globalisation, the global division of labour and European integration on the one hand and the specific geographical location of the Netherlands on the other hand. By now more than half of Dutch manufacturing exports consist of re-exports. Globalisation and the global division of labour are continuing, and these developments affect not only the Netherlands. In Germany, for instance, re-exports meanwhile account for more than 15% of total exports, in Singapore for more than 50%, and in Hong Kong for around 95%.
This document examines in greater detail the international re-export trend and considers its implications for the analysis of the export and market performances of countries in general and for the Netherlands in particular. An important conclusion is that when the international re-export trend is not taken into account, the export market growth for Dutch manufactures, and hence the Netherlands’s loss of market share, is overestimated. Globalisation is ongoing, then, and our understanding of its implications is improving.

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C.N. Teulings
Director

# Summary

Dutch re-exports have been expanding explosively since the mid-1980s, with the exception of a hitch in 2001 and 2002. In addition to the ongoing globalisation and European integration, the popularity of ICT products – which constitute a substantial share of Dutch re-exports – is a major growth impulse for re-exports. Over the past decade, the growth of re-exports contributed nearly 0.3 percentage points per annum on average to overall economic growth. This study shows that an exuberant growth of re-exports is not just a Dutch phenomenon, but an international trend. In all ten countries studied here, re-exports have grown faster than domestically-produced exports. It is true, however, that of the European countries under consideration, the share of re-exports in total goods exports is the highest in the Netherlands, where they now account for more than 50% of exports. A comparable share can be found in Singapore, and in Hong Kong the figure is now close to 95%.

Re-export goods are recorded in the import and export statistics of several countries, and are thus counted double in world trade at least once. The international re-export trend explains in part why the volume of world trade is rising faster than the volume of world output. This observation has implications for the indicators which shed light on a country's export performance. A conceptual distinction has to be made between the concepts of 'export performance' and 'market performance'.

*Export performance* compares the volume trend of a country's total exports to growth of the country's export markets as a whole, or 'export market growth'. *Market performance* correlates the volume trend of domestically-produced exports to that of domestically-produced exports in other countries or to export market growth for Dutch manufactures.

Both concepts have their own advantages and disadvantages. Export performance is in effect the (weighted) average of the market performance of exporters and the trade and distribution sector. The advantage of this measure is that it can be calculated relatively easily. But the disadvantage is that the development of the export performance says relatively little about the performance of domestic exporters. Market performance sheds more light on this issue, but its major disadvantage is that as yet there is very little data available on the domestically-produced exports and re-exports of other countries and hence on the export market growth for Dutch manufactures.

In this study, we have tried to correct 'traditional' export market growth for the implications of the international re-export trend, in order to obtain an approximation of export market growth for Dutch manufactures. This required two specific corrections, namely for the inflation of world trade ('inflation effect') and for the different composition of the product mix of domestically-produced exports ('mix effect').

Tentative calculations on the basis of a large number of assumptions reveal that between 1996 and 2000 the international re-export trend had an 'inflation effect' on export market growth in volume terms of 0.6 to 1.4 percentage points per annum on average. At the moment it is not possible to make a more accurate estimate, because of the lack of data on re-exports for many countries.

Correcting for the 'mix effect' takes account of the fact that the product mix of domestically-produced exports differs from the product mix of re-exports. This study reveals that between 1996 and 2000, export market growth for the Netherlands weighted with the product mix of total exports increased by 0.8 percentage points per annum more on average than export market growth weighted with the product mix of domestically-produced exports. It seems, then, that the product markets where re-exports are relatively strongly represented, such as the market for ICT products, expanded faster during the past period than those where 'Made in Holland' products are relatively strongly represented.

All in all, as a result of the inflation and mix effects, export market growth for Dutch manufactures increased by 1.4 to 2.2 percentage points per year less on average than 'traditional' export market growth between 1996 and 2000. The reverse situation occurred 2001 and 2002, when global sales of ICT products fell sharply. Since 2003 re-exports have increased by double digits each year, so that the phenomenon outlined here has probably occurred in more recent years as well.

Many organisations, such as the OECD and the European Commission, compare a country's volume trend of total exports with that of its export market to establish a performance indicator for that country. Between 1996 and 2000, the volume of total Dutch exports expanded by 2.4 percentage points per annum more on average than the volume of the Dutch export market. However, this favourable export performance paints too rosy a picture of the market performance of domestically-produced exports, since the positive developments of recent years mainly have to be attributed to the spectacular growth of re-exports.

As an indication of market performance, CPB has since 2001 correlated the volume trend of *domestically-produced exports* to that of the Dutch export market. This approach results in a deterioration in the market performance by an average of 2.6% per year between 1996 and 2000. But this in turn is an overly sombre presentation of the situation. Because in this approach Dutch exports are corrected for re-export trends while export market growth is not, the loss of market share is overestimated.

It follows from the exploratory analysis in this study that when domestically-produced exports are correlated with export market growth for Dutch manufactures, the average loss of market share ranged from 0.4 to 1.2 percentage points per annum between 1996 and 2000. Hence there is still a loss of market share, as is the case for other highly-developed economies, but it is significantly smaller than the loss of 2.6% per annum calculated in the previous approach.

Between 2000 and 2004, the loss of market share increased steadily, even when the trend in domestically-produced exports is correlated with the lowest estimate of export market growth for Dutch manufactures. The main reason for this is the trend in price competitiveness of domestically-produced exports, which deteriorated by a total of 7.5% over these years.

# 1 Introduction

Good export performances are vitally important for the open Dutch economy. That is why it is important that export performance indicators emit the right signals. An internationally widely-used method to determine a country's export performance is to compare the volume trends in the country's exports with the growth of the country's export markets. An increase in export market growth is regarded as an approximation of the increase in the market for the country's exports. The main question in this study is whether this approach is still relevant in the light of the exuberant growth of re-exports.

This question is particularly relevant for the Netherlands because of the relatively large share of re-exports in total exports of goods. Re-exports are goods which are imported, undergo little or no processing, and are then exported again. In chapter 2 we will examine the concept of 're-exports' in greater detail, seeking also to distinguish between 're-exports' and 'import penetration'. Insofar as the re-exporting of the goods involves Dutch transport and distribution companies, these re-exports add to the Dutch exports of services. This aspect will not be considered further here. In chapter 3 we will show that the economic significance of 'domestically-produced exports' and 're-exports' differs, which is why it makes sense to distinguish between the two. But this has considerable consequences for the assessment of the export performance. For some time now, volume trends in the Netherlands's *total goods exports* have been moving broadly in line with export market growth. But if the growth of *domestically-produced exports* is compared with export market growth, the picture is considerably less rosy.

Until recently, the steep growth of re-exports was widely regarded as a typically Dutch phenomenon, which barely affected the trends in world trade and export market growth for the Netherlands. Comparing a country's export growth with export market growth therefore seemed a reliable approximation of market performance. This study considers this line of thought. How typically Dutch are re-exports, and their relatively strong growth? We answer these questions in chapter 4. In chapter 5 we investigate the implications of the re-export trend for the calculation, interpretation and analysis of export performance indicators for the Netherlands. And in chapter 6 we set out some conclusions.

# 2 What are re-exports?

## 2.1 Definition[1]

At first glance, ‘exports’ seems to be an easily-defined statistical concept. But on closer inspection the situation is more complicated. Goods and services cross the Dutch borders in many ways, and hence there are many types of exports. This is examined in greater detail in a box. In this section we concentrate on the concept of ‘re-exports’.

Statistics Netherlands (CBS) defines ‘re-exports’ as goods which have been imported into the Netherlands and leave the country again after no (or virtually no) further processing.[2] The goods in question also have to be owned by a Dutch resident at some point. If there is no transfer of ownership at any stage, the goods are deemed to be in transit.[3]

The crux of the above definition is the phrase ‘after no (or virtually no) further processing’. If computers are imported and exported again with only user manuals in the language of the destination country added to the boxes, this is intuitively clearly a case of re-exports. But if new hard disks are installed on the computers in the Netherlands before they leave the country again (as computers), does this constitute sufficient industrial processing for the computers to be included among domestically-produced exports? And should computers which are assembled in the Netherlands from imported components be classified as domestically-produced exports or re-exports? There is a large grey area between these two types of goods exports. Moreover, this grey area is probably expanding, because due to the ongoing globalisation, the production chain of many goods is increasingly spread across different countries. In the past years, Statistics Netherlands (CBS) has conducted extensive research in order to arrive at clear and practicable demarcations in this sphere.[4]

Statistics Netherlands (CBS) eventually decided to include goods among domestically-produced exports if these goods undergo some processing and consequently are given a new six-digit product code.[5] Customs allocates a six-digit product code to all imported and exported goods. If the goods imported under a certain product code are exported under the same code, then these goods are included among re-exports. This demarcation – which to our knowledge is not used

[1] The following passage is based on Roos (2005, 2006a).

[2] The CBS definition differs slightly from the UNComtrade definition used by the IMF: ‘Exports of foreign goods in the same state as previously imported’.

[3] Re-exports are included in the export statistics and the National Accounts, while transit trade is not.

[4] See Roos (2006b) and Roos and Exel (2006).

[5] The Customs Department uses the harmonised system of the World Customs Organisation (WCO), which classifies imported and exported goods on the basis of eight-digit codes. The definition of re-exports uses a higher aggregation level than could be used. With a more refined demarcation, a very small amount of processing (e.g. packaging the goods) could be sufficient to have them included among domestically-produced exports.

**Trade flows via the Netherlands**[a]

In addition to domestically-produced exports and re-exports, there are other trade activities which in statistical terms are regarded as part or not part of goods exports. The key factors are ownership, treatment at customs, and the nature of the activities which take place in the Netherlands. The table shows the various flows which can be distinguished and whether these are included among exports in the National Accounts.

'Transit trade' is defined as goods entering the Netherlands and leaving it again without becoming the property of a Dutch resident. For some transit trade, the customs department carries out some administrative actions such as preparing import or export documents. This is called 'quasi transit trade'. Quasi transit trade goods are included as exports in the International Trade Statistics, but not in the National Accounts.

A variant on quasi transit trade is what is called 'commission finishing'. In this case, foreign goods are imported into the Netherlands, and after some processing are exported again to the *same* owner. An example is printed t-shirts. The National Accounts include a line for commission finishing, including paid employment and trade-related services.

Another part of transit trade is transported via the Netherlands, but without any administrative actions at customs. 'True transit trade' goods are not counted as Dutch imports and exports. Of course, the transit trade may involve Dutch transporters. In that case, there are exports of transport services. Figures on true transit trade are not collected systemically, but there is no doubt that the goods flows are substantial.

**Trade flows through the Netherlands with their corresponding characteristics, 2005**

| | Value (billion euros) | Customs formalities | Property of Dutch resident | Incorporated in National Accounts (NA) or International Trade Statistics (ITS) |
|---|---|---|---|---|
| Domestically-produced exports | 155.0 | yes | yes | NA and ITS |
| Re-exports | 125.4 | yes | yes | NA and ITS |
| Quasi transit trade | 30.0[a] | yes | no | ITS |
| Commission finishing | 10.9 | yes | yes | NA and ITS |
| 'True' transit trade | ± 190[b] | no | no | not |
| Entrepot trade | | yes | no | NA and ITS |
| Transito trade | 3.5[c] | no | yes | not |

[a] Value in 2004.

[b] Based on a CPB estimation for 1999 (see CPB 2000, pp. 93) and the growth rate of nominal re-exports between 1999 and 2005. Extrapolation of data published in TNO-Inro (2003) point at figures of the same magnitude.

[c] Based on trend extrapolation. The value mentioned refers to a trade margin and not to the value of the traded goods.

In transit trade, the goods are not owned by a Dutch company, but they do cross the Dutch border. The opposite is also possible. That is to say, a Dutch company can buy goods abroad and sell them in another country without the goods coming physically to the Netherlands. An example is flowers from Israel, which through auction become the property of a Dutch company and are transported directly from Israel to the United States. This is called 'transito' trade. Another type is what is called 'entrepot trade', in which goods from non-EU countries are stored in a customs warehouse in the Netherlands in expectation of a final buyer. If this buyer is based outside the Netherlands, then in administrative terms the goods are not deemed to have been in the Netherlands.

[a] This box is almost entirely based on Roos (2005, 2006a).

by any other statistical office – is not only clear, it is also practical. What is more, it does not require any additional surveys. However, according to Roos and Exel (2006), some exceptions have to be made to the rule. In the case of refined oil products, for instance, the goods are always included among domestically-produced exports, even if the product code remains the same. But when the activity involves altering the temperature, diluting liquids or repackaging, then the goods are always classified as re-exports, even if the allocated product code has been changed.

## 2.2 Composition

An important determining factor for a country's export performance is the composition of the export mix or product mix. Normally, the Netherlands's share in world trade will decline under stable price competitive conditions if the market for goods which the Netherlands exports grows less fast than the market for goods which the Netherlands does not export. Table 2.1 shows the nominal shares of the various product groups in domestically-produced exports and re-exports of manufactures (i.e. goods excluding energy and oil products) respectively between 2002 and 2005. Energy and oil products are ignored in the economic analysis for a number of reasons.[6] These are goods with a very divergent production structure, in which government influence is relatively strong.

There are significant differences between the product mix of domestically-produced exports and that of re-exports. Domestically-produced exports are dominated by agricultural products, foodstuffs, chemical products, machinery and transport equipment. These product groups accounted for around 68% of domestically-produced manufacturing exports between 2002 and 2005. By contrast, machinery, computers and electronic equipment account for nearly half the re-exports. Chemical products also play a major role.

The difference in the product mixes of domestically-produced exports and re-exports increases as the product groups are broken down further. In fact, domestically-produced exports of machinery, computers and electronic equipment mainly consist of machinery and include hardly any computers and electronic equipment. By contrast, computers and electronic equipment account for the bulk of re-exports.

[6] In analytical terms, it matters little that energy and oil products are not considered here. The tables for exports, including energy and oil products, are available from the authors on request.

**Table 2.1 Composition of domestically-produced exports and re-exports of manufactures in the Netherlands, 2002-2005**

| | Domestically-produced exports | Re-exports |
|---|---|---|
| | average nominal share in % | |
| Agricultural products, hunting, forestry and fishing | 8.1 | 3.3 |
| Food products | 16.2 | 4.0 |
| Beverages and tobacco | 4.4 | 0.6 |
| Mining and quarrying (excluding oil and natural gas) | 0.3 | 0.6 |
| Chemicals and chemical products (excluding rubber and plastics products) | 24.6 | 15.0 |
| Intermediate products of: | | |
| Textiles, wood, paper, non-metallic and metallic minerals | 13.0 | 8.1 |
| Machinery, computers en electronic equipment | | |
| (excluding medical and precision instruments) | 15.0 | 44.6 |
| of which: | | |
| office machinery and computers | 1.3 | 21.1 |
| radio, television and communication equipment | 2.7 | 15.7 |
| other electrical and non-electrical machinery | 11.0 | 7.8 |
| Transport equipment | 7.8 | 3.6 |
| Clothing and footwear | 0.5 | 3.3 |
| Other goods | 10.0 | 16.9 |
| Total | 100 | 100 |

Source: Statistics Netherlands (CBS).

The difference in the product mixes of domestically-produced exports and re-exports has significant consequences for the interpretation of the Netherlands's market performance. Global demand for agricultural products and foodstuffs tends to grow less fast than the world markets for machinery, electronic equipment and telecommunications equipment. That is one of the reasons why the percentage share of Dutch domestically-produced exports in world trade is falling.

## 2.3 Origin and destination

In the case of the Netherlands, the mix of domestically-produced exports differs markedly from the mix of re-exports. It may be that the markets of domestically-produced exports and re-exports also differ. There are no statistics available on the destinations of domestically-produced exports and re-exports. But these can be derived indirectly from the figures in the National Accounts and the International Trade Statistics. Table 2.2 shows the destinations of domestically-produced and re-exported manufactures.

Europe is by far the most important market for both domestically-produced exports and re-exports. The markets for domestically-produced exports and re-exports are broadly the same. There are some differences between the exports of manufactured goods, as shown in table 2.2, and the exports of all goods (i.e. including energy and oil products). In particular, the

importance of Belgium and Germany as destinations for domestically-produced exports increases somewhat in the latter case, because of the large volumes of natural gas exported to those countries.[7]

**Table 2.2 Destination of Dutch domestically-produced exports and re-exports of manufactures, 2002-2005**

| | Domestically-produced exports | Re-exports | Total exports |
|---|---|---|---|
| | average nominal share in % | | |
| Belgium | 11.5 | 9.6 | 10.7 |
| Germany | 22.9 | 21.6 | 22.4 |
| France | 9.8 | 9.7 | 9.8 |
| Italy | 6.1 | 6.1 | 6.1 |
| Spain | 3.9 | 4.3 | 4.1 |
| United Kingdom | 10.1 | 11.3 | 10.6 |
| Rest of Western Europe | 13.3 | 14.5 | 13.8 |
| Eastern Europe | 5.4 | 6.5 | 5.9 |
| Total of Europe | 83.2 | 83.7 | 83.4 |
| United States | 4.8 | 4.9 | 4.8 |
| Rest of America | 2.0 | 1.6 | 1.8 |
| Asia | 7.4 | 7.6 | 7.5 |
| Rest of the world | 4.7 | 3.8 | 4.3 |
| Total | 100 | 100 | 100 |

Source: Own calculations based on International Trade Statistics of Statistics Netherlands (CBS).

Somewhat surprising are the large shares in re-exports taken by the United States and the Asian countries. In the past, there were barely any re-exports 'in the other direction', that is, to Asia. The ongoing globalisation may play a role here, as well as the fact that Asian countries are becoming more important as export markets for goods produced in Europe. Mergers between US and European firms may account for the United States' growing share. In principle, it would not be surprising if these mergers boost intermediary flows from Europe to the United States and hence the US's share in re-exports. It should also be borne in mind in this context that measuring market shares invariably only provides snapshots. In the mid-1990s, the period covered by the first CPB analysis of re-exports (see CPB (2001)), parts of Asia were hit by a serious economic crisis, which may have had a temporary adverse effect on exports to that part of the world.[8]

[7] It is possible that natural gas is being exported via these countries to other countries. This will depend in part on the supply of and demand for natural gas. But this is unlikely to apply to a large proportion of natural gas exports.

[8] The shares in table 2.2 are not based on real measurements. But they can be derived indirectly from CBS statistics. Such an approach may lead to differences with the actual figures. The validity of the calculations has been checked by comparing countries' shares of re-exports with their shares in the exports of computers (which are almost exclusively re-exports). The differences were not that great, so that the shares shown in table 2.2 seem reasonable.

**Table 2.3 Origin of Dutch domestically-produced exports and re-exports of manufactures, 2002-2005**

| | Imports for Dutch market | Imports for re-exports | Total imports |
|---|---|---|---|
| | average nominal share in % | | |
| Belgium | 11.9 | 9.9 | 10.9 |
| Germany | 21.9 | 20.1 | 20.1 |
| France | 6.1 | 5.4 | 5.8 |
| Italy | 3.2 | 2.9 | 3.1 |
| Spain | 6.0 | 6.1 | 6.0 |
| United Kingdom | 13.5 | 12.2 | 12.9 |
| Rest of Western Europe | 3.6 | 3.5 | 3.6 |
| Total of Europe | 66.2 | 60.4 | 63.2 |
| United States | 8.4 | 9.8 | 9.1 |
| Rest of America | 4.4 | 3.3 | 3.9 |
| Asia | 18.7 | 25.1 | 22.0 |
| of which China | 5.7 | 7.7 | 6.8 |
| Rest of the world | 2.2 | 1.4 | 1.8 |
| Total | 100 | 100 | 100 |

Source: Own calculations based on International Trade Statistics of Statistics Netherlands (CBS).

Most re-exports, then, are destined for Europe. But where do these goods come from? Table 2.3 shows the origin of imports of manufactured goods destined for re-export and the origin of imports destined for the Dutch market. Asian countries are the main countries of origin for re-exports. This is hardly surprising, given the product mix of re-exports. After all, Asian countries are major producers of computers, electronic equipment and transport equipment, which make up a major slice of re-exports. For Europe the converse applies. Many of the imports from European countries are destined for the Dutch market.

All in all, then, the geographical differences between domestically-produced exports and re-exports are far less pronounced than their respective product mixes. Europe is by far the most important market for both domestically-produced exports and re-exports. This means that the difference in growth rates between domestically-produced exports and re-exports cannot be explained by the fact that re-exports are destined mainly for booming economies.

# 3 Re-exports in the Netherlands

Dutch re-exports have increased spectacularly over the past two decades. In 1985, the value of re-exports of manufactured goods (i.e. excluding energy and oil products) came to around EUR 21 billion; by last year this figure had soared to more than EUR 135 billion, which amounts to an average increase of no less than 9.2% per year. Domestically-produced exports of manufactures increased by an average of 4.2% per year over the same period. Hence there is a considerable growth differential between the two export components. In volume terms, the difference in growth rates is substantially even larger, since the prices of goods produced in the Netherlands rose slightly on average over this period, while the prices of re-exports actually fell (see table 3.1).

**Table 3.1 Domestically-produced exports and re-exports of manufactures in the Netherlands, 1970-2006** [a]

| | 1970-1985 | 1986-2006 | 1986-1992 | 1993-2000 | 2001-2002 | 2003-2006 |
|---|---|---|---|---|---|---|
| | average yearly growth rates in % | | | | | |
| **Nominal** (in values) | | | | | | |
| Re-exports | 10.9 | 9.2 | 5.0 | 15.5 | – 0.9 | 9.7 |
| Domestically produced exports | 10.6 | 4.2 | 3.6 | 5.8 | 1.1 | 3.7 |
| Total exports of manufactures | 10.7 | 6.1 | 4.0 | 9.2 | 0.2 | 6.5 |
| **Real** (in volumes) | | | | | | |
| Re-exports | 5.8 | 12.0 | 9.1 | 17.2 | 2.9 | 11.7 |
| Domestically produced exports | 6.4 | 3.7 | 4.0 | 4.9 | 0.2 | 2.6 |
| Total exports of manufactures | 6.2 | 6.7 | 5.4 | 9.3 | 1.4 | 6.8 |
| **Price** | | | | | | |
| Re-exports | 4.9 | – 2.5 | – 3.7 | – 1.5 | – 3.6 | – 1.9 |
| Domestically produced exports | 4.0 | 0.5 | – 0.4 | 0.9 | 0.9 | 1.1 |
| Total exports of manufactures | 4.2 | – 0.6 | – 1.4 | 0.0 | – 1.2 | – 0.3 |
| | average level | | | | | |
| Re-exports' nominal share [b] | 26.8 | | 27.7 | 37.1 | 44.9 | 47.4 |

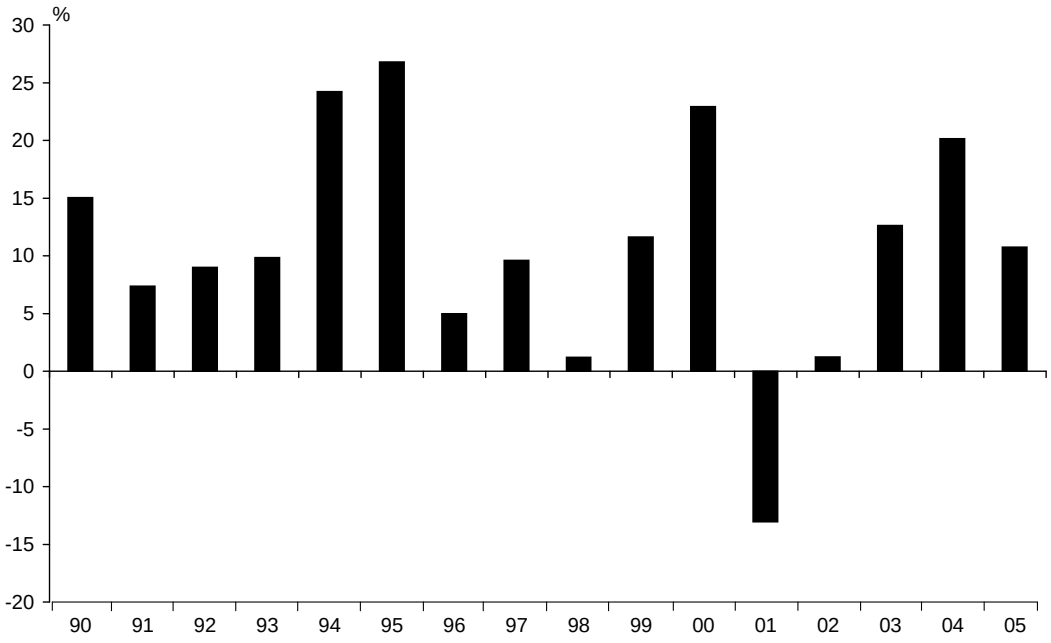
[a] From 1995 onwards, revised National Accounts data have been used. For the years before 1995 the original National Accounts data have been corrected for the revision of the National Accounts using fixed revision quotes.
[b] Nominal share of re-exports in total exports of manufactures.

Re-export growth accelerated in particular from the end of the 1980s onwards. In the years following the publication of the European Commission's white paper entitled 'Europe 1992' in 1988, many foreign distribution centres were established in the Netherlands, which sparked off an increase in re-exports. And the establishment of the single market within the EU in 1993 also provided a strong growth impulse for re-exports.[9]

[9] See Kusters, Ligthart and Verbruggen (2001).

Furthermore, it is striking that re-export growth moderated significantly in 2001 and 2002, both by historical standards and in comparison with domestically-produced exports. The background to this was the sharp fall in global sales of computers and consumer electronics during these years (see figure 3.1). This downturn was a response to the overinvestments in ICT firms and new software owing to the high expectations of the internet and the millennium bug problem. Because computers and consumer electronics account for a substantial share of re-exports, re-export trends were relatively unfavourable during this period.

**Figure 3.1 World-wide nominal sales of ICT-products, 1990-2005**



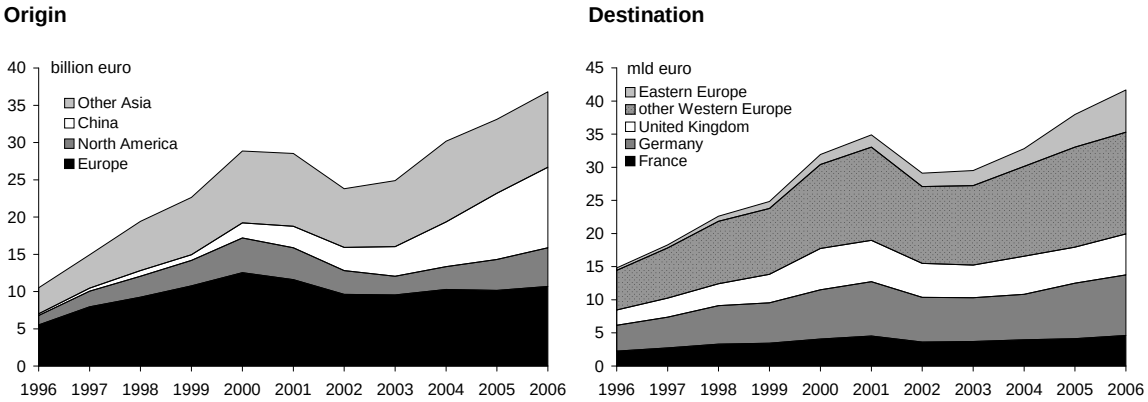

Source: WTO, International Trade Statistics 2005, www.wto.org.

Since then, re-export growth has surged again, averaging volume growth of nearly 13% per year over the past three years. This is due in part to the sustained popularity of ICT products, the accession of China to the World Trade Organisation (WTO), and the enlargement of the European Union with 10 new member states in 2004 (see figure 3.2).

Re-exports are likely to increase by double digits in 2007 and 2008 as well.[10] European consumers are spending more on all kinds of electronics, and European businesses are investing more in computers and peripheral equipment. Because re-exports will probably continue to post very strong growth, the value of re-exports of manufactures will exceed that of domestically-produced exports for the first time in 2007. As stated, in volume terms the change is even more impressive, because the prices of many typical re-export goods – such as computers and electronic equipment – have fallen sharply in recent years.

[10] See CPB (2007).

**Figure 3.2 Origin and destination of Dutch re-exports of computers and electronics, 1996-2006**



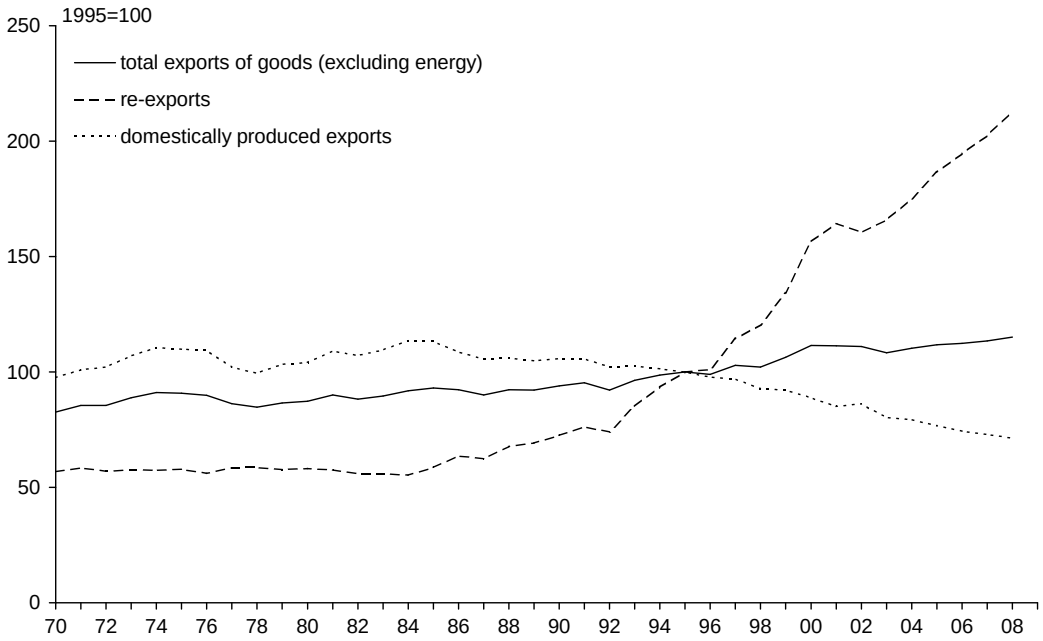

When analysing the relative performance and competitiveness of the Dutch economy on the world market, it is important to take account of the structural growth differential between domestically-produced exports and re-exports. This is for the following reason. Setting the trend in Dutch total exports of manufactures against the growth of Dutch export markets yields a rather reassuring picture. Since 1970, both variables have been moving more or less in tandem, which implies that the share of Dutch exports in world trade is broadly stable (see figure 3.3). However, this constant market share is the balance of two opposed movements: the market share of domestically-produced exports has been declining steadily since 1985, while that of re-exports has been growing steadily. Hence the Dutch market performance looks completely different in terms of the relative trend in domestically-produced exports rather than re-exports or total exports.[11]

In its economic analyses, CPB distinguishes between domestically-produced exports and re-exports. The reason for this is not so much that the trends of these two components are diverging, but rather that the main explanatory variables and the economic significance of these two components are very different. Consequently, these two components are distinguished in CPB's large-scale econometric models, such as Athena and SAFFIER.[12]

[11] In figure 3.3 the trends in domestically-produced exports, re-exports and total exports (of manufactures) are set against export market growth. This 'export market growth' is constructed by reweighting the import flows of 34 countries and eight product groups, whereby the weightings are based on the composition of total exports. Ideally, the weightings used to calculate market growth for re-exports should be different from those for domestically-produced exports. This is discussed in greater detail in chapter 5.

[12] See CPB (2006b), pp. 30-32, and Kranendonk and Verbruggen (2006), pp. 32-36.

**Figure 3.3 Volumes of domestically-produced exports, re-exports and total exports of manufactures against relevant world trade, 1970-2008**




Source: CPB (2007).

The development of re-exports over the short term depends in particular on the demand for typical re-export goods, such as computers and consumer electronics. Because of the size and the sophistication of the Port of Rotterdam, Schiphol airport, the connections with the hinterland and the Dutch businesses distributing these goods across Europe, much of the European demand for these goods runs via the Netherlands. In order to retain this strong position over the longer term, good infrastructure will be more important than, say, unit labour costs in comparison with other countries, because these costs account for only a very small proportion of total costs. The prices of re-export goods certainly determine the attractiveness of these goods, but because nearly 90% of these prices are determined by the import prices, the relative prices say nothing about the relative competitiveness of the Dutch 're-export sector'.[13] For instance, if computers or other typical re-export goods become relatively cheap, then the demand for these goods and hence re-exports will increase, and this development will not be significantly affected by unit labour costs in the trade and distribution sector. The situation is completely different for domestically-produced exports. Over the short term, domestic cost factors on average determine more than 60% of the overall price of domestically-produced goods.[14] In that case, then, the price balance compared to foreign competitors certainly has an impact on the competitiveness of Dutch businesses.

[13] See CPB (2002), pp. 31.

[14] See Kranendonk and Verbruggen (2006), pp. 96.

The above serves to emphasise that fewer Dutch production factors are deployed in the re-export trade. Generally speaking, the prices of these goods are determined not by the Dutch distributor but by world trade prices. Hence the gross added value per euro for re-exports is lower than for domestically-produced exports. With the help of input-output analysis, it can be calculated that, for re-exports, just over 9 eurocents of gross added value was created for each euro in 2004, compared to an average of more than 61 eurocents for domestically-produced exports, a considerably higher figure in other words (see table 3.2).[15] This means that an increase in re-exports will have completely different implications for GDP growth and employment, say, than a similar increase in 'Made in Holland' exports.[16]

**Table 3.2 Cumulated Production Structure matrix for the Dutch economy, in billion euros, 2004** [a]

| | Domestically-produced exports of manufactures [a] | Re-exports of manufactures | Exports of services | Exports of energy | Domestic expenditures | Total |
|---|---|---|---|---|---|---|
| Gross value added | 76.8 | 10.3 | 54.9 | 8.8 | 337.8 | 488.6 |
| Final imports | | 96.5 | | | 52.6 | 149.1 |
| Intermediary imports | 48.4 | 2.4 | 16.9 | 14.0 | 61.8 | 143.5 |
| Total output | 125.2 | 109.2 | 71.8 | 22.8 | 452.3 | 781.3 |

[a] Including stock building.

The relatively low added value per euro does not mean that re-exports are economically unimportant. On the contrary, in 2004 re-exports generated EUR 10.3 billion in added value, about the same as the chemical industry and appreciably more than electrical engineering or catering, for instance. What is more, over the past decade the growth in re-exports contributed nearly 0.3 percentage points per annum on average to economic growth. This is not only substantially more than the average GDP contribution of investments, say, over these years; it also amounts to more than 10% of the total GDP growth of 2.6% per year on average during this period.

Domestically-produced exports contributed just under 0.5% percentage points per year on average to GDP growth over the past decade, nearly double the corresponding GDP contribution made by re-exports. Per euro, the share of domestically-produced exports in GDP is nearly seven times greater than that of re-exports. Hence the contribution of re-exports to

[15] See Kranendonk and Verbruggen (2005). The reported gross added value amounts per euro are averages. The actual amounts can be substantially higher or lower for specific goods. In the input-output analysis, stock building, which can make either a positive or a negative contribution, is netted with the largest expenditure category, namely domestically-produced exports, for technical reasons. This has no significant impact on the outcome of 61 eurocents of gross added value per euro for domestically-produced exports.

[16] CPB takes explicit account of this when making short-term forecasts for the Dutch economy. That this is not, or not yet, done by other organisations (such as the OECD or the European Commission) is often one of the main reasons for the forecasting differences between CPB and these organisations.

GDP growth is large in relative terms during the period in question, which is due to the relatively strong volume growth in this export category.

# 4 Re-exports in other countries

The above shows that Dutch re-exports expanded relatively strongly over the past decades, are now of virtually the same magnitude in euro terms as domestically-produced exports, and have a different product mix. In this chapter we will examine whether re-exports in other countries have developed in similar ways. An awkward aspect in this context is that only a few countries gather data on re-exports systematically and on an annual basis. We therefore have to rely in part on calculations from studies which have been made on an incidental basis. Moreover, there is no international agreement on the definition of 're-exports'. So even when figures on re-exports are available, the differences in definitions and statistical methods mean that it remains an open question whether these figures can be compared properly with those covered by the Dutch definition of re-exports. The results therefore have to be interpreted with great caution.

First we will look at several specific countries, namely Germany, Hong Kong and Singapore. Then we will place re-exports in a broader European context. This will be done by analysing input-output tables in a number of sample years.

## 4.1 Germany

Chapter 2 showed that Germany is the largest market for Dutch re-exports. But are the Germans also engaged in re-exports? Although the available material is less detailed than that for the Netherlands, this question can be answered with a firm yes. In 2002, the value of German re-exports – described as 'Exporte von importierten Gütern' ('exports of imported goods') – amounted to EUR 111 billion, or more than 15% of total goods exports.[17] The share of re-exports in total exports is thus considerably smaller than in the Netherlands, but the trend is upwards, because in 1991 re-exports accounted for only 7% of total exports in value terms. Between 1992 and 2002, nominal re-exports increased by 13.9% per annum on average, while domestically-produced exports ('Exporte aus inländischer Produktion') increased by 5.4% per annum on average during this period. If we assume that, as in the Netherlands, the prices of German re-exports rose less fast than those of domestically-produced exports during this period, then the growth differential will be even wider in volume terms. No figures are available on this, however.

[17] Source: Destatis (2004).

**Table 4.1 Structure and import intensity of exports in Germany, in value terms, 1991-2002**

| | 1991 | 1995 | 2000 | 2002 | 1992-2002 |
|---|---|---|---|---|---|
| | billion euros | | | | annual average change in % |
| Re-exports (1) | 26.6 | 42.6 | 91.7 | 111.4 | 13.9 |
| Domestically-produced exports | 347.5 | 379.3 | 570.4 | 621.1 | 5.4 |
| Total exports (2) | 374.1 | 421.9 | 662.2 | 732.5 | 6.3 |
| Imports (final and intermediary) used for exports (3) | 99.8 | 125.2 | 252.3 | 283.9 | 10.0 |
| | in percentages | | | | |
| Re-exports' share; (1) : (2) | 7.1 | 9.9 | 13.8 | 15.2 | |
| Import intensity of exports; (3) : (2) | 26.7 | 29.7 | 38.1 | 38.8 | |

Source: Destatis (2004).

The increase in re-exports and import penetration has not gone unnoticed in Germany either. Comments and publications by Hans-Werner Sinn, president of the renowned IFO institute, sparked off a lively debate on the notion of Germany as a 'bazaar economy' ('Basar-Ökonomie Deutschland').[18] Although there is no consensus in Germany as to whether the phenomenon of the 'bazaar economy' is a cause for concern or not, there is general agreement on the backgrounds to the phenomenon: 'The growing bazaar activity and the processes on which it is based (outsourcing, offshoring, import of intermediate inputs) are the result of the intensification of the international division of labour and the specialisation and cooperation of companies under the conditions of open markets, free choices of location and competition'.[19] These backgrounds are in part the same as those responsible for the systematic increase in re-exports in the Netherlands. It is also possible that German re-exports have benefited from political factors such as the accession of Eastern European countries to the EU, which has put Germany even more at the centre of the European market than before.

## 4.2 Hong Kong

Because of its special location in relation to China, Hong Kong holds a special place with regard to re-exports. Last year, no less than 94% of Hong Kong's total nominal goods exports consisted of re-exports. Some 62% of these re-exports were 'Made in China'. As much as 22% of all trade flows (excluding transit trade) to and from China was conducted via Hong Kong in 2005. Including transit trade, this percentage was considerably higher. From the mid-1990s on,

[18] See e.g. Sinn (2003, 2005), KfW (2004) and Diekmann, Meurers and Felgentreu (2004). For an overview of the many publications and interviews on this issue, see http://www.cesifo-group.de. See also the box on this issue in CPB (2006c), p. 42.

[19] See KfW (2004), p. 7.

the value of domestically-produced exports declined steadily, and Hong Kong has concentrated more and more on re-exports to and from China instead of producing goods itself. ‘Made in Hong Kong’ has been replaced by ‘Shipped in Hong Kong’.

**Table 4.2 Re-exports and domestically-produced exports in Hong Kong, in value terms, 1982-2005**

| | 1982 | 1990 | 2000 | 2005 | 1983-2005 |
|---|---|---|---|---|---|
| | billion Hong Kong dollars | | | | annual average change in % |
| Re-exports(1) | 44.4 | 414.0 | 1 391.7 | 2 114.1 | 18.3 |
| Domestically-produced exports | 83.0 | 225.9 | 181.0 | 136.0 | 2.2 |
| Total exports of goods (2) | 127.4 | 639.9 | 1 572.7 | 2 250.2 | 13.3 |
| | in percentages | | | | |
| Re-exports’ share; (1) : (2) | 34.9 | 64.7 | 88.5 | 94.0 | |

Source Business-Stat Online (BSO), http://stat.tdctrade.com.

## 4.3 Singapore

Another country in Asia where re-exports play a major role is Singapore. The main destination for Singapore’s re-exports is Malaysia, followed at some distance by China and Hong Kong. In 2005 less than 10% of re-exports went to Europe, with the United Kingdom, Germany and the Netherlands the main destinations. As in the case of the Netherlands, the share of re-exports in Singapore’s total exports hovers around 50%. Over the past decade, Singapore’s re-exports have expanded faster than domestically-produced exports, both in value and volume terms. But the differences in growth rates are smaller than in the Netherlands. The reason for this is that, in the case of Singapore, the product mixes of both export components are more similar than in the Netherlands. Thus in Singapore, ICT-related products are the main product category, not only in re-exports but also in domestically-produced exports.

**Table 4.3 Re-exports and domestically-produced exports in Singapore, 1995-2005** [a]

| | 1995 | 2000 | 2005 | 1996-2005 in value terms | 1996-2005 in volume terms |
|---|---|---|---|---|---|
| | billion dollars (nominal prices) | | | annual average change in % | |
| Re-exports (1) | 69.0 | 101.9 | 175.1 | 9.8 | 11.1 |
| Domestically-produced exports | 98.5 | 135.9 | 207.4 | 7.7 | 8.9 |
| Total exports (2) | 167.5 | 237.8 | 382.5 | 8.6 | 9.9 |
| | in percentages | | | | |
| Re-exports' share in total exports of goods; (1) : (2) | 41.2 | 42.8 | 45.8 | | |
| Re-exports' share in exports of manufactures (total excluding oil) | 44.8 | 47.4 | 52.4 | | |

[a] Figures before 2003 are excluding the trade with Indonesia.

Source: Yearbook of Statistics Singapore, chapter External Trade, Europe.

## 4.4 Europe

To gain an understanding of the development of re-exports in a number of other European countries, we have studied the input-output tables for these countries. It is possible to derive from these tables the proportion of exports originating from final imports.[20] Unfortunately comparable input-output tables are not available for all countries, and the figures are not very recent.[21] Nevertheless, these figures do give an impression of the importance of re-exports. Table 4.4 shows the values derived from the input-output tables for domestically-produced exports and re-exports of manufactures in 1995 and 2000. The value of re-exports can be retrieved directly in these tables as imports for the purpose of exports. We first looked at the importance of re-exports, and then we examined the product mixes for the various countries.

Apart from a different mix effect, the geographical composition of domestically-produced exports and re-exports may, of course, also differ. In chapter 2 it emerged that these differences were not large for the Netherlands. We have not examined this for other countries. We suspect that the difference for other European countries will also be limited, because European countries after all trade primarily with each other.

[20] As in table 3.2, a distinction can be made for these countries between intermediate and final imports for the purpose of exports. Only final imports for the purpose of exports count towards re-exports.

[21] Most European countries draw up input-out tables (in current prices) only once every five years. Under the Eurostat commitments, these tables must be available within three years of the end of the reporting year. Hence it will be some time yet before the tables for 2005 will be available.

**Table 4.4 Exports of manufactures in some European countries, 1995-2000**

| | 1995 | | | 2000 | | | Nominal change | | |
|---|---|---|---|---|---|---|---|---|---|
| | Total exports | Domestically-produced | Re-exports | Total exports | Domestically-produced | Re-exports | Total exports | Domestically-produced | Re-exports |
| | billion euros | | | | | | annual average change in % | | |
| Belgium | 106 | 76 | 30 | 153 | 103 | 50 | 8 | 6 | 11 |
| Denmark | 34 | 29 | 5 | 45 | 36 | 9 | 6 | 5 | 12 |
| Germany | 357 | 315 | 42 | 558 | 467 | 91 | 9 | 8 | 17 |
| Finland | 29 | 29 | 0 | 49 | 47 | 2 | 11 | 10 | 39 |
| France | | | | 297 | 206 | 91 | | | |
| Netherlands[a] | 124 | 83 | 41 | 196 | 112 | 84 | 10 | 6 | 15 |
| UK | 154 | 146 | 8 | | | | | | |
| Sweden | 57 | 56 | 1 | 87 | 85 | 2 | 9 | 9 | 9 |

[a] Dutch figures are revised National Accounts' data.

Source: Eurostat.

### Importance of re-exports in Europe

The importance of re-exports varies widely from country to country in Europe. In the case of Sweden, Finland, Denmark, Italy and probably also the United Kingdom, re-exports play a relatively small role in both absolute and relative terms. It is no coincidence that these are countries which find themselves in unfavourable geographical locations from a transport perspective. In Germany[22], and above all in France, the share of re-exports is more substantial. Because these countries have large economies, exports are less important in relative terms. The strong growth of re-exports therefore has less impact on economic growth in these countries. Belgium and the Netherlands have the largest re-export sectors in relative terms. The geographical location of these countries and the presence of large seaports doubtless play a major role in this respect.

In Belgium, the Netherlands, Germany, and probably France as well, the value of re-exports increased sharply between 1995 and 2000. Unfortunately this cannot be confirmed for France, because no data is available for 1995. In these countries, the growth of re-exports exceeds those of total exports and GDP. Most probably the difference is even greater in volume terms. In the Netherlands, ICT products account for a large share of re-exports, and the prices of these goods have fallen sharply in past years. Since the prices of re-exports are formed on the world market, it is likely that the prices of re-exports have fallen in other countries as well. All this depends on the product mix of re-exports, however. We will examine this in greater detail in the next section.

[22] The figures for Germany shown in table 4.4 do not tally with those in table 4.1. This is because table 4.4 refers to the re-exports of manufactures (i.e. goods excluding energy and oil products), while table 4.1 refers to the total exports of goods and services.

### Product mixes in Europe

In the investigation into the structure of Dutch exports, it emerged that there were differences in the product mixes of domestically-produced exports and re-exports. This section will analyse whether this is the case for other European countries as well. Tables 4.5 and 4.6 show the shares of the various product groups in the domestically-produced exports and re-exports of manufactures (i.e. goods excluding energy and oil products) in eight European countries.[23]

Table 4.5 shows that agricultural products and foodstuffs constitute a major share in the domestically-produced exports of the Netherlands, Denmark, and to a lesser extent France and Belgium. Chemical products are actually important in the domestically-produced exports of all European countries under consideration. This applies the most in the Netherlands and the least in Finland. The exports of pulp and paper are relatively important for Finnish and Swedish exports, while transport equipment has a large share in German exports. This is hardly surprising in the light of the prominence of the German automotive industry.

**Table 4.5 Composition of domestically-produced exports of manufactures, 1995-2000**

| | Belgium | Denmark | Germany | Finland | France | Netherlands | United Kingdom | Sweden |
|---|---|---|---|---|---|---|---|---|
| | average value share in % | | | | | | | |
| Agricultural and food products; beverages and tobacco | 12.7 | 31.7 | 5.5 | 3.6 | 13.9 | 31.5 | 8.7 | 3.0 |
| Mining and quarrying | 0.6 | 0.2 | 0.2 | 0.3 | 0.2 | 0.3 | 1.4 | 0.9 |
| Textile and leather products | 6.6 | 4.0 | 2.8 | 1.8 | 4.5 | 2.2 | 4.9 | 1.4 |
| Pulp and paper products; printing and publishing | 3.3 | 2.6 | 4.1 | 23.5 | 2.9 | 4.3 | 3.4 | 11.9 |
| Chemicals and chemical products | 21.3 | 12.6 | 14.5 | 6.0 | 15.7 | 21.9 | 16.2 | 9.0 |
| Basic metals | 11.6 | 2.4 | 6.5 | 6.6 | 4.9 | 3.4 | 4.9 | 7.5 |
| Machinery | 6.4 | 14.5 | 16.9 | 12.6 | 8.0 | 6.0 | 12.5 | 13.6 |
| Computers | 0.6 | 0.3 | 1.2 | 0.4 | 1.6 | 1.2 | 7.2 | 0.6 |
| Radio, television and communication equipment | 3.3 | 3.3 | 3.9 | 19.9 | 6.8 | 6.4 | 7.6 | 14.7 |
| Transport equipment | 16.8 | 3.3 | 24.0 | 4.4 | 24.9 | 7.7 | 15.7 | 17.1 |
| Other products | 16.9 | 25.1 | 20.3 | 20.9 | 16.7 | 15.2 | 17.5 | 20.4 |
| Total | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |

Source: Own calculations based on Eurostat data.

[23] It should be noted here that a number of countries only distinguish industries in the input-output tables. Strictly speaking, then, we have taken the exports and re-exports of particular industries as approximations of exports and re-exports of the associated product groups.

In general, the eight European countries under consideration export few computers, radios, televisions and telecom equipment. Finland (and to a lesser extent the United Kingdom) is the exception. Finland's exports are heavily influenced by the presence in that country of a major player in the mobile phones' market. In the case of the United Kingdom, the close commercial links with Ireland could be a factor. A number of ICT multinationals have set up subsidiaries in Ireland, and some of the consequent trade flows may run administratively via the United Kingdom.

Among re-exports, the shares of chemical products are relatively high for most countries. Two exceptions are Finland and the United Kingdom. Textiles and footwear are important in the re-exports of Denmark, Germany and Sweden. It is striking that computers only account for large shares in re-exports in the Netherlands, the United Kingdom and Sweden.

**Table 4.6 Composition of re-exports of manufactures, 1995-2000**

| | Belgium | Denmark | Germany | Finland | France | Netherlands | United Kingdom | Sweden |
|---|---|---|---|---|---|---|---|---|
| | average value share in % | | | | | | | |
| Agricultural and food products; beverages and tobacco | 8.0 | 13.5 | 4.2 | 10.6 | 4.8 | 8.1 | 0.0 | 10.6 |
| Mining and quarrying | 13.0 | 0.1 | 0.2 | 0.1 | 0.2 | 0.6 | 18.2 | 0.0 |
| Textile and leather products | 4.4 | 15.3 | 10.9 | 0.8 | 6.6 | 7.0 | 0.0 | 17.7 |
| Chemicals and chemical products | 17.6 | 8.8 | 8.2 | 0.4 | 16.5 | 13.5 | 0.0 | 19.1 |
| Basic metals | 3.1 | 3.3 | 3.2 | 1.4 | 6.2 | 4.3 | 14.2 | 3.6 |
| Machinery | 8.3 | 10.0 | 9.3 | 5.5 | 10.9 | 7.2 | 0.0 | 7.4 |
| Computers | 4.7 | 8.8 | 10.9 | 8.0 | 7.1 | 24.0 | 29.7 | 19.3 |
| Radio, television and communication equipment | 4.6 | 9.9 | 12.7 | 3.4 | 9.8 | 13.6 | 21.9 | 3.7 |
| Transport equipment | 13.7 | 11.6 | 18.3 | 65.5 | 19.5 | 4.7 | 12.7 | 10.7 |
| Other products | 22.5 | 18.6 | 22.2 | 4.3 | 18.6 | 16.9 | 3.3 | 7.8 |
| Total | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |

Source: Own calculations based on Eurostat data.

In France and Germany, it is mainly transport equipment which is exported again after first being imported. And in Finland, transport equipment actually accounts for more than half the re-exports. These are probably Russian cars destined for the European market, or European cars destined for Russia. It should be borne in mind here, though, that Finland's total re-exports are negligible, which makes the breakdown more susceptible to exceptional and incidental factors. It seems that each country has its own niche with regard to re-exports. This may be due to the presence of specific companies or knowledge in a country or to logistical aspects. For instance,

minerals account for a relatively large share of Belgium's re-exports.[24] It is more than likely that these are diamonds. Antwerp is a major centre in the international diamond trade. Diamonds are usually treated as minerals in the statistics. In addition to the influence of economic specialisation, it is also possible that statistical aspects play a role. Among other things, differences in the demarcation of the various export flows, as mentioned in the box in chapter 2, may influence the results.

In the Netherlands, there is a difference in the product mixes of domestically-produced exports and re-exports. This is also the case in other European countries where re-exports are relatively important, specifically Belgium, Germany and France. Computers do not play as important a role in re-exports as in the Netherlands. In France, for instance, transport equipment is important. In theory, the calculation of export market growth for these countries should take these differences into account. In the next chapter we will consider this issue in greater detail.

[24] Minerals also have a large share in the United Kingdom's re-exports. This is probably due to the presence of the London Metal Exchange, the main international exchange for minerals, in the British capital.

# 5 Implications for performance indicators: some tentative calculations

The international re-export trend calls for a reconsideration of a country's performance indicators. In section 5.1 we will examine the implications for the concepts of 'export performance' and 'market performance'. In order to obtain an accurate picture of market performance, which shows how the exports of domestically-produced manufactures are developing compared to the exports of foreign competitors, export market growth has to be corrected for the implications of the spectacular growth of re-exports at home and abroad. Specifically, two corrections have to be made, which will be explained in section 5.2. And finally, in section 5.3 we will discuss the implications of the international re-export trend for the calculation and interpretation of the performance indicators for the Dutch economy.

## 5.1 Divergence of export performance and market performance

A widely-used method to analyse the trends in a country's export performance and market performance is to correlate the volume growth of total exports with export market growth.[25] In this context, 'export market growth' is regarded as an approximation of the growth of the global market for a country's export products. However, the spectacular growth of re-exports in various countries (see chapter 4) calls for a modification of the above method. Because of the international re-export trend, the concepts of 'export performance' and 'market performance' no longer coincide, and these concepts therefore have to be distinguished.
A country's export performance says something about the volume growth of exports compared to the volume growth of the country's export markets. A country's market performance tracks the trend in domestically-produced exports compared to other countries' domestically-produced exports or the exports of foreign competitors. Are major domestic producers of export goods able to hold on to their share of the world market or not? These type of questions can be answered using the concept of market performance.

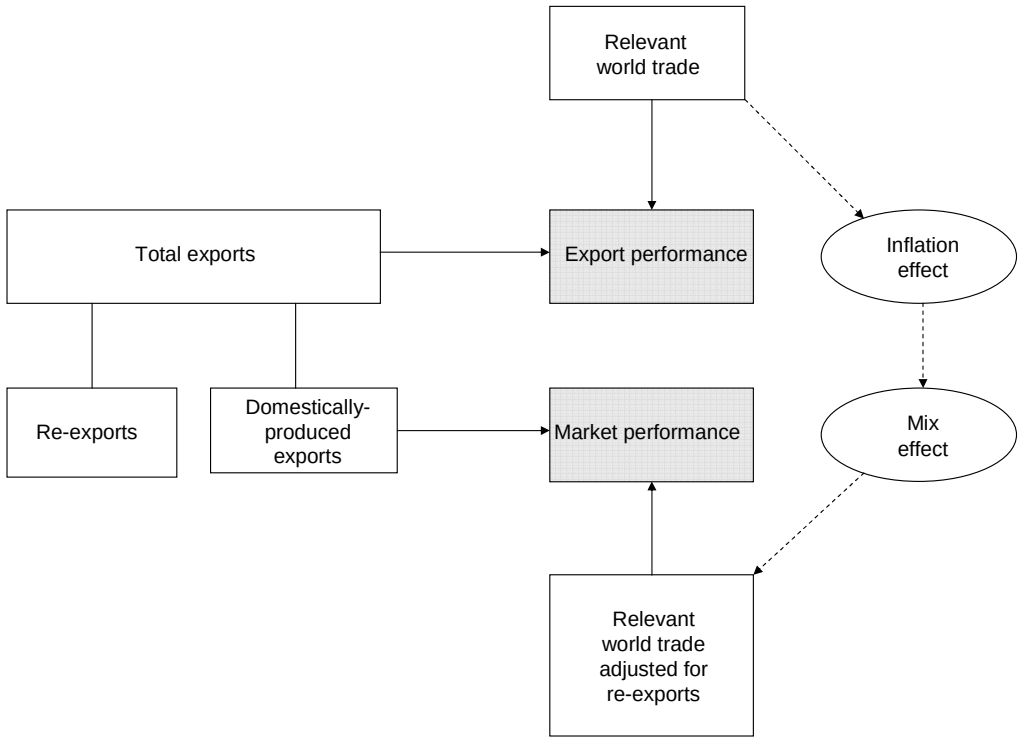
Because of the international re-export trend, the trends in export market growth and world production of export goods are increasingly diverging. A specific example may clarify this. In the past, when Chinese-produced clothes were shipped from Shanghai in China to Hamburg in Germany, these items were counted once in world trade statistics. When the same clothes are now first exported to Hong Kong, where English-language labels are stitched in, after which the clothes are shipped to Rotterdam, where the care instructions are added for the German market, and the clothes are then transported to Germany, the same items are included three times in world trade. This is one of the reasons why world trade is growing faster than world production of export goods. This is called the 'inflation effect' of the international re-export trend.

[25] See e.g. OECD (2006), Statistical Annex Tables, table 44.

By way of illustration, in annex A we have worked out the implications for export market growth when a country decides to export goods via another country, where some minor (non-manufacturing) processing takes place. The upshot is that this affects export market growth for all countries, even for those countries which are not involved in re-exports at all, whereas it does not affect world production of export goods.

Figure 5.1 shows how a country's export performance and market performance relate to each other. Both the export component of the country in question ('the numerator') and the variable to which these exports are correlated ('the denominator') differ for both indicators. Export performance is concerned with total exports in relation to export market growth, while market performance is concerned with domestically-produced exports in relation to export market growth corrected for re-exports.

**Figure 5.1 Two alternative exports performance indicators**




Both concepts have their own specific advantages and disadvantages. Export performance is the (weighted) average of the market performance of exporting producers and the trade and distribution sector. The advantage of this measure is that it can be calculated relatively easily. But the disadvantage is that the development of the export performance says relatively little about the performance of domestic exporters. Market performance is more revealing, but its

major disadvantage is that as yet there are no reliable data on export market growth corrected for re-exports.[26]

The difference in the development of both indicators is strongly evident in the Netherlands. Because over past decades re-exports have grown substantially faster than domestically-produced exports (see figure 3.3), the export performance paints too rosy a picture of the relative performance of domestically-produced exports. That is why CPB decided in 2001 to correlate not only volume growth of total exports, but also that of domestically-produced exports to export market growth. Since then these figures have been considered in the Spring Forecasts and the Macro-Economic Outlooks as approximations of market share, or market performance. However, correcting Dutch exports for re-exports while not doing so for export market growth yields an overly sombre picture of market performance. Not correcting export market growth for re-exports overestimates the growth of the global market for 'Made in Holland' products, and hence the loss of market share by Dutch exporters.

## 5.2 Export market growth corrected for re-exports

In order to construct a better indicator of market performance, it is necessary to compare the export component with the appropriate export market growth. Export market growth is calculated by weighting the growth of import volumes (of the destination countries for Dutch exports) with the export shares of countries *and* product groups.[27] Export market growth calculated in this way is also called 'doubly-reweighted' world trade. The shares of countries and product groups in exports are based on total exports.

To calculate market performance, the volume growth of domestically-produced exports is compared to export market growth corrected for re-exports. To calculate export market growth corrected for re-exports, two corrections have to be made to the world trade figures. First the proportion of import volumes intended for re-export has to be subtracted from the total: the so-called 'inflation effect'. This corrects for re-export trends in other countries. Then these import volumes have to be reweighted to reflect the export shares of countries and product groups. This should be based on the weights in the Netherlands' domestically-produced exports, which differ from the weights in total exports. This deals with the 'mix effect'. From this perspective, export market growth corrected for re-exports can be regarded as 'triple-reweighted' world trade.

[26] Another disadvantage is that comparisons are made only with other export countries. This excludes the trade partners via domestic provision (domestic sales). Competition of, say, Dutch brewers with German brewers on the German market is thus not reflected in this indicator.

[27] For a more detailed explanation of CPB's calculation of world trade figures compared to those of the OECD, IMF and WTO, see Van Welzenis and Suyker (2005).

**Correction for the international re-export trend**

Because there is no re-export data for many countries, the magnitude of the re-export effect on export market growth cannot be determined accurately. However, it is possible to calculate the average magnitude of the inflation effect between 1996 and 2000, because nominal re-export figures are available for a number of countries for 1995 and 2000. By making some assumptions on price movements in re-exports and on the volume and growth of re-exports for countries for which no data is available, it is possible to calculate the trend in export market growth excluding re-exports. Because of the wide uncertainty margin, we have made calculations under different assumptions, which combined can give an impression of the magnitude of the inflation effect. The method used for these calculations and the outcomes are explained in annex B.[28] Here we restrict ourselves to presenting a conservative as well as a high estimate of the inflation effect of international re-export growth on export market growth.

The conservative estimate assumes that there are no re-exports in countries where no re-exports are recorded, and that the price movements of re-exports and other imported goods are the same. In that case, the growth of the global export market is overestimated by 0.6 percentage points per annum on average in the period under consideration. The overestimate naturally increases as the volume of re-exports is higher and expands faster. In the high estimate, it is assumed that in the missing countries the re-exports are of a similar magnitude and are developing broadly along the same lines as in the countries observed.[29] In that case, the volume growth of the world market for 'Made in Holland' exports increased by 1.4 percentage points per annum less on average than export market growth in the period under consideration.

Between 1996 and 2000, the volume of export market growth expanded by 7.2% per annum on average. From that perspective, between 8 and 20% of export market growth during this period can be attributed to the international re-export trend.

To gain an impression of the magnitude of the inflation effect, we made a total of 60 calculations under different assumptions (see annex B). In these calculations, the inflation effect ranges from a minimum of 0.6 percentage points to a maximum of 2.3 percentage points per annum. The various assumptions were based on data for countries for which re-export data is available. This may lead to an overestimation of the inflation effect. After all, it seems plausible that countries for which re-exports are relatively important will be more inclined to gather data on this phenomenon than countries for which re-exports are not important.

In the years following 2000, with the exception of 2002, re-exports also grew relatively strongly, although the growth rate was less spectacular than between 1996 and 2000. For the years after 2000, data on re-exports is available for even fewer countries at the moment.

[28] For a more detailed explanation, see Mellens (2007).

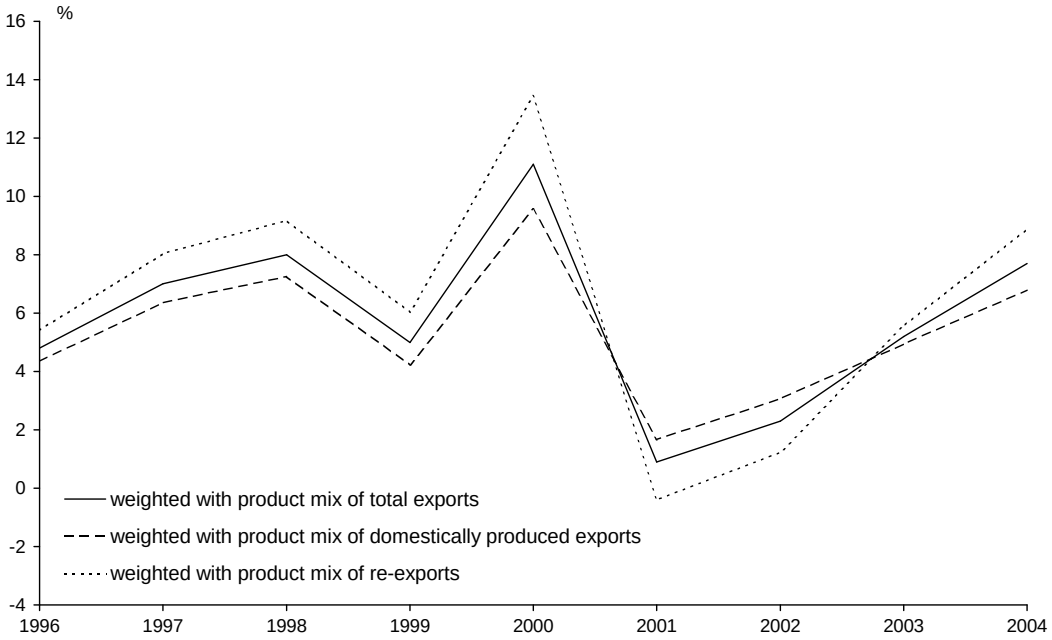
[29] This high variant assumes that the share of re-exports in imports is 15%, that the value of re-exports increases by 5% per annum more on average than the value of total imports, and that the prices of re-export goods fall by 1 percentage point per annum more on average than the prices of imports.

Tentative calculations (see annex B) suggest an average inflation effect of 0.3-0.7 percentage points per annum between 2001 and 2004, which is half that calculated for the period between 1996 and 2000.

**Correction for the mix effect**

For the Netherlands, figures are available for the product mixes of both domestically-produced exports and re-exports. Consequently, for the Netherlands, the reweighting of import volumes by product groups can take account of the fact that the product mix for domestically-produced exports differs from the product mix for re-exports (see chapter 2). As far as the destination countries are concerned, the differences between domestically-produced exports and re-exports are quite small (see table 2.2), so that we abstract from this.

**Figure 5.2 Relevant world trade growth, weighted with different product mixes, 1996-2004**




CPB has conducted some initial calculations on the basis of classifications at a high aggregation level.[30] This involved the reweighting of import volumes by the export share of the goods in domestically-produced exports and re-exports respectively.[31] This means, for instance, that the importation of machinery, electronic equipment and computers weighs more heavily in the calculation of export market growth for re-exports than in the calculation of export market

[30] See G. van Welzenis, 'Pakketherweging van de relevante wereldhandel van Nederland', CPB Memorandum, forthcoming.

[31] These weightings are based on the product classifications used in the National Accounts, while total export market growth is based on the SITC classification. The SITC classification is the most widely used for international figures, but these statistics do not distinguish between domestically-produced exports and re-exports. For our calculations, we tried to match the two classifications as closely as possible, but a perfect match is not possible because of the different allocations of some goods. For that reason, the weighted growth figures of export market growth for domestically-produced exports and re-exports do not add up exactly to the total export market growth.

growth for domestically-produced exports. The differences in export market growth when the different product mixes are taken into account are set out in figure 5.2.

It follows from figure 5.2 that in most years, export market growth weighted with the product mix for re-exports grows faster than export market growth weighted with the product mix for domestically-produced exports. It seems that those markets where re-exports are relatively strongly represented tend to grow somewhat faster in most years than those markets where 'Made in Holland' products are relatively strongly represented. Exceptions are the years 2001 and 2002, when sales of ICT products tumbled. Between 1996 and 2004, export market growth weighted with the product mix for re-exports increased by 0.4 percentage points per annum more on average than 'traditional' export market growth, which is weighted with the product mix for total exports. Between 1996 and 2000, the weighting effect averaged 0.8 percentage points per annum, and between 2001 and 2004 it averaged around 0%.

The weightings of import volumes were applied at a high aggregation level. As stated in chapter 2, the differences between domestically-produced exports and re-exports become greater at a more detailed level. Because of the absence of the necessary data, it is not possible at the moment to apply the weighting at a lower aggregation level. But it is likely that the correction arising from the differences in the product mixes will be somewhat greater in more disaggregated calculations. However, we are unable to say whether the difference is marginally or substantially greater.

## 5.3 Performance indicators for Dutch exports

What does the above mean for the calculation and interpretation of the performance indicators for Dutch exports? Table 5.1 shows different performance indicators for Dutch manufacturing exports. From this, it follows that the export performance of the Netherlands was positive between 1996 and 2000. During this period, the volume of total exports expanded by 2.4 percentage points per annum more on average than the volume of 'doubly-reweighted' export market growth. This was due mainly to the excellent performances in 1997 and 2000, when re-exports posted spectacular growth. In short, then, the favourable trend in the Dutch export performance relies above all on the good performances in by the trade and distribution sector.

The trend in market performance presents a less favourable picture. On the basis of the traditional method, Dutch manufacturing exporters lost market share every year between 1996 and 2000. According to the traditional method, the loss of market share averaged 2.6% per annum between 1996 and 2000.

**Table 5.1 Performance indicators of Dutch exports of manufactures, 1996-2004**

| | 1996 | 1997 | 1998 | 1999 | 2000 | 1996-2000 | 2001-2004[b] |
|---|---|---|---|---|---|---|---|
| | annual volume changes in % | | | | | | |
| **Exports** | | | | | | | |
| Total exports (1) | 3.6 | 11.4 | 7.3 | 9.2 | 16.4 | 9.6 | 3.8 |
| Domestically-produced exports (2) | 2.4 | 6.2 | 3.3 | 4.3 | 7.0 | 4.6 | 1.2 |
| Re-exports (3) | 6.0 | 21.1 | 13.7 | 16.9 | 29.6 | 17.5 | 7.1 |
| **Relevant world trade** | | | | | | | |
| Traditional [a] (4) | 4.8 | 7.0 | 8.0 | 5.0 | 11.1 | 7.2 | 4.0 |
| Idem, weighted with product mix of domestically-produced exports (5) | 4.4 | 6.4 | 7.3 | 4.2 | 9.6 | 6.4 | 4.1 |
| Inflation effect, *conservative* estimation (6) | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.3 |
| Inflation effect, *high* estimation (7) | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 0.7 |
| **Performance indicators** | | | | | | | |
| Export performance (1 -/- 4) | – 1.2 | 4.4 | – 0.7 | 4.2 | 5.3 | 2.4 | – 0.2 |
| Market performance: | | | | | | | |
| Traditional calculation (2 -/- 4) | – 2.4 | – 0.8 | – 4.7 | – 0.7 | – 4.1 | – 2.6 | – 2.8 |
| New calculation with *conservative* estimation of inflation effect (2 -/- 5 + 6) | – 1.4 | 0.4 | – 3.4 | 0.7 | – 2.0 | – 1.2 | – 2.6 |
| New calculation with *high* estimation of inflation effect (2 -/- 5 + 7) | – 0.8 | 1.2 | – 2.6 | 1.5 | – 1.2 | – 0.4 | – 2.2 |

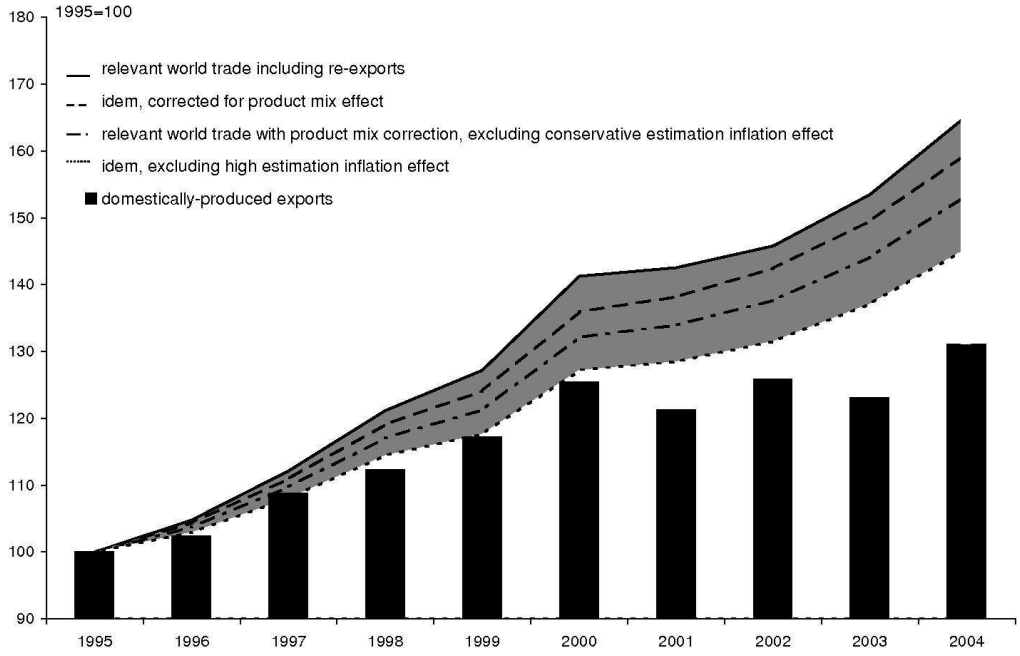
[a] Including re-exports and weighted with product mix of total exports.

[b] Figures for the period 2001-2004 are surrounded with relatively large uncertainty margins.

Because Dutch exports are corrected for the effects of re-exports but export market growth is not, this results in an overly sombre presentation of the situation. When domestically-produced exports are correlated with 'triple-reweighted' export market growth – taking account of the international re-export trend – then our tentative calculations on the basis of a large number of assumptions reveal an average loss of market share ranging from 0.4-1.2 percentage points per annum between 1996 and 2000. Hence there is still a loss of market share, as is the case for other highly developed economies, but it is significantly smaller than when calculated according to the traditional method (see figure 5.3).

By historical standards, the years 1996 to 2000 can be characterised as a period with a relatively strong growth of re-exports (17.5% per annum on average). In the following years (2001-2004), re-exports grew relatively modestly (7.1% per annum on average), due in part to the sharp fall in global sales of ICT products in 2001 and 2002. Between 2001 and 2004, there was barely any difference between export market growth weighted with the product mix of total exports and export market growth weighted with the product mix of domestically-produced exports.

**Figure 5.3 Domestically produced exports and relevant world trade, including and excluding corrections for re-exports trend, 1995-2004**




In recent years, the inflation effect has also halved compared to the period between 1996 and 2000. Hence it does not come as a surprise that between 2001 and 2004, the overestimation of the loss of market share by the traditional methods works out at considerably less. This is reflected in figure 5.3, with the shaded part (between the continuous line and the dotted line) increasing only modestly after 2000. However, in qualitative terms the same conclusion applies: the export performance paints too rosy a picture of the relative performance of Dutch exporters, and the traditional approach to market performance gives too sombre a picture.

Between 2000 and 2004, the loss of market share increased steadily, even when the trend in domestically-produced exports is correlated with the lowest estimate of export market growth for Dutch manufactures. The main reason for this is the change in price competitiveness of domestically-produced exports, which deteriorated by a total of 7.5% over this period.

According to the 'Spring Forecast 2007', re-exports will increase by an average of 12% per annum between 2004 and 2008, while global sales of ICT products are expected to be relatively buoyant. On this basis, it is likely that during this period the extent of overestimation of the loss of market share according to the traditional method will work out somewhere between the values found for 1996-2000 and 2001-2004.

# 6 Conclusions

Dutch re-exports have been expanding explosively since the mid-1980s, with the exception of a hitch in 2001 and 2002. This study shows that an exuberant growth of re-exports is not just a Dutch phenomenon, but an international trend. In all ten countries studied here, re-exports have grown faster than domestically-produced exports. It is true, however, that of the European countries under consideration, the share of re-exports in total goods exports is highest in the Netherlands, where they now account for more than 50% of exports. A comparable share can be found in Singapore, and in Hong Kong the figure is now close to 95%.

Re-export goods are recorded in the import and export statistics of several countries, and are thus counted double in world trade at least once. The international re-export trend explains in part why the volume of world trade is rising faster than the volume of world output. This observation has implications for the indicators which shed light on a country's export performance. A conceptual distinction has to be made between the concepts of 'export performance' and 'market performance'.

*Export performance* compares the volume trend of a country's total exports to growth of the country's export markets as a whole, or 'export market growth'. *Market performance* correlates the volume trend of domestically-produced exports to that of domestically-produced exports in other countries or to export market growth for Dutch manufactures.

Both concepts have their own advantages and disadvantages. Export performance is the (weighted) average of the market performance of exporters and the trade and distribution sector. The advantage of this measure is that it can be calculated relatively easily. But the disadvantage is that the development of the export performance says relatively little about the performance of domestic exporters. Market performance is more revealing, but its major disadvantage is that as yet there are very little data available on the domestically-produced exports and re-exports of other countries.

Calculations of market performance which correct for the implications of the re-export trend are still of an exploratory nature at the moment. Because data on re-exports is lacking for many countries, many assumptions have to be made. The tentative finding of this study is that between 1996 and 2000, the international re-export trend had an average upward effect on the volume of export market growth of between 0.6-1.4 percentage points per annum. Between 1996 and 2000, the volume of export market growth expanded by 7.2% per annum on average. From this perspective, between 8% and 20% of export market growth during this period can be attributed to the international re-export trend.

It should also be borne in mind that the product mix of domestically-produced exports differs from the product mix of re-exports. This study shows that in most years export market growth weighted with the product mix for re-exports grows faster than export market growth

weighted with the product mix for domestic produced exports. Between 1996 and 2000, the weighting effect averaged 0.8 percentage points per annum.

All in all, export market growth for Dutch manufactures has increased by less than 'traditional' export market growth in recent years.

Many organisations, such as the OECD and the European Commission, compare a country's volume trend of total exports to that of its export market to establish a performance indicator for that country. Between 1996 and 2000, the volume of total Dutch exports expanded by 2.4 percentage points per annum more on average than the volume of the Dutch export market. However, this favourable export performance paints too rosy a picture of the market performance of domestically-produced exports, since the positive developments of recent years are mainly attributable to the spectacular growth of re-exports.

As an indication of market performance, CPB has since 2001 compared the volume trend of *domestically-produced exports* to that of the Dutch export market. This approach results in a deterioration in the market performance by an average of 2.6% per annum between 1996 and 2000. But this in turn is an overly sombre presentation of the situation. Because in this approach Dutch exports are corrected for re-export trends while export market growth is not, the loss of market share is overestimated.

This study yields the tentative conclusion that when domestically-produced exports are correlated with export market growth for Dutch manufactures, the average loss of market share ranged from 0.4 to 1.2 percentage points per annum between 1996 and 2000. This bandwidth is determined by the choice of either a conservative or a high estimation of the inflation effect. Even if the implications of the international export trend are taken into account, there is still a loss of market share, as is the case for other highly-developed economies, but it is significantly smaller than when calculated according to the traditional method.

Between 2001 and 2004, re-exports grew relatively modestly (7.1% per annum on average), due in part to the sharp fall in global sales of ICT products in 2001 and 2002. Between 2001 and 2004, therefore, there was barely any difference between export market growth weighted with the product mix of total exports and export market growth weighted with the product mix of domestically-produced exports. During this period, the inflation effect has also halved compared to 1996-2000.

At the same time, the loss of market share increased steadily between 2000 and 2004, even when the trend in domestically-produced exports is compared with the lowest estimate of export market growth for Dutch manufactures. The main reason for this is the change in price competitiveness of domestically-produced exports, which deteriorated by a total of 7.5% over this period.

On the basis of current perceptions, re-exports will increase by an average of 12% per annum between 2004 and 2008. On this basis, it is likely that during this period the extent of

overestimation of the loss of market share according to the traditional method will work out somewhere between the values found for 1996-2000 and 2001-2004.

Because of the limited availability of data on domestically-produced exports and re-exports in other countries, the above estimates have to be interpreted with great caution. This is all the more so since in the light of differences in definitions and statistical methods, it remains an open question whether these figures can be compared properly with those covered by the Dutch definition of re-exports.

In order to improve our understanding of the market performances of Dutch and international manufactures, it is very important that data on re-exports is gathered in a responsible (and preferably uniform) way for other countries as well, as Statistics Netherlands (CBS) does for the Netherlands. This is all the more so since the international re-export trend is likely to continue over the coming years. Consequently, the export performances of many countries will say less and less about their market performances.

# Annex A Effects of re-exports: a stylised example [32]

Re-exports change the calculated export performance indicators. A stylised and extreme example can clarify this. The starting points are the imports and exports of countries A, B, C and D at two moments and in two scenarios. The assumption in the stylised example is that each country trades only one product. Between the periods *t* and *t+1*, trade flows increase, so that world trade increases. In scenario 1, there are no re-exports and each product is shipped directly from the exporting country to the importing country. The notional trade flows are represented in the trade matrices of table A.1.

**Table A.1 Trade flows between countries, scenario 1**

| | Period *t* | | | | | | Period *t+1* | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Country ↓→ | A | B | C | D | Exports (total) | Country ↓→ | A | B | C | D | Exports (total) |
| A | x | 20 | 30 | 10 | 60 | A | x | 22 | 33 | 11 | 66 |
| B | **10** | x | 10 | **20** | 40 | B | **12** | x | 11 | **26** | 49 |
| C | 20 | 30 | x | 10 | 60 | C | 24 | 36 | x | 12 | 72 |
| D | 10 | 10 | 10 | x | 30 | D | 11 | 12 | 13 | x | 36 |
| Imports (total) | 40 | 60 | 50 | 40 | 190 | Imports (total) | 47 | 70 | 57 | 49 | 223 |
| | | | | | | Growth (in %) | 17.5 | 16.7 | 14 | 22.5 | 17.4 |

Scenario 2 assumes that the trade flows are the same as in scenario 1. The difference is that country B decides to ship its exports via country C. In this case there are re-exports, with country C becoming the 're-export country'. This yields the trade flows represented in table A.2.

The example is extreme in the sense that a situation has been chosen in which a country decides to ship all its exports via one other country. In principle, this assumption can be abandoned without its having much impact on the outcomes.[33] A comparison of table A.2 and table A.1 reveals that world trade is 'inflated' in both periods, by 30 and 38 respectively. The exports from country B to countries A and D (30 in period *t* and 38 in period *t+1*) are now counted

[32] A memorandum (in Dutch) in which the example is elaborated analytically and hence in more general terms is available from the authors on request.

[33] Another situation arises when no re-exports take place in period *t*, but they do in period *t+1*. Scenarios 1 and 2 are then combined. In that case, the import volume of country C increases sharply, because the 'inflation effect' is added in period *t+1*. With the exception of country C, all countries are confronted with deteriorating export performances. The weightings in the formulas are not yet affected by the re-exports. One might wonder to what extent these weightings are representative for the new situation. In such a case, the development of exports should ideally be divided into a part which is caused by the shift to re-exports and a part which is caused by 'real' autonomous export growth.

double. In the first instance, the transactions are recorded as exports from country B to country C, and then as exports from country C to countries A and D.

**Table A.2 Trade flows between countries, scenario 2**

| | Period *t* | | | | | | Period *t+1* | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Country ↓→ | A | B | C | D | Exports (total) | Country ↓→ | A | B | C | D | Exports (total) |
| A | x | 20 | 30 | 10 | 60 | A | x | 22 | 33 | 11 | 66 |
| B | 0 | x | 40 (10+**10**+**20**) | 0 | 40 | B | 0 | x | 49 (11+**12**+**26**) | 0 | 49 |
| C | 30 (20+ **10**) | 30 | x | 30 (10+**20**) | 90 | C | 36 (24+ **12**) | 36 | x | 38 (12+**26**) | 110 |
| D | 10 | 10 | 10 | x | 30 | D | 11 | 12 | 13 | x | 36 |
| Imports (total) | 40 | 60 | 80 | 40 | 220 | Imports (total) | 47 | 70 | 95 | 49 | 261 |
| | | | | | | Growth (in %) | 17.5 | 16.7 | 18.8 | 22.5 | 18.6 |

How does this introduction of re-exports impact on export market growth and the export performance of the countries in question? Table A.3 shows the export growth, export market growth and export performance of countries A, B, C and D. Export market growth is calculated here as import growth weighted by a country's export share. For instance, export market growth for country A in scenario 1 is 20/60*16.7 + 30/60*14.0 + 10/60*22.5 = 16.3%.

**Table A.3 Relevant world trade and performance indicators in different scenario's**

| | Scenario 1 | | | | Scenario 2 | | |
|---|---|---|---|---|---|---|---|
| | Exports | Relevant world trade | Market performance | | Exports | Relevant world trade | Market performance |
| Country | % | | | Country | % | | |
| A | 10.0 | 16.3 | – 6.3 | A | 10.0 | 18.7 | – 8.7 |
| B | 22.5 | 19.1 | 3.4 | B | 22.5 | 18.8 | 3.8 |
| C | 20.0 | 18.0 | 2.1 | C | 22.2 | 18.9 | 3.3 |
| D | 20.0 | 16.1 | 3.9 | D | 20.0 | 17.6 | 2.4 |

Table A.3 shows that country B's decision to ship its exports via country C in period *t+1* has consequences for the export performances of all other countries. The export performances of countries A and D deteriorate in scenario 2 compared to scenario 1, because export market growth has increased for these countries. This is because of an increase in country C's imports as a result of the re-exports. Country B's export performance improves in scenario 2 because export market growth decreases. And country C's export performance improves in scenario 2 compared to scenario 1. These calculations are for total exports. Domestically-produced exports are still equal to 60 in period *t* and 72 in period *t+1* (the values from scenario 1). If this export

growth (20%) is compared with the new export market growth for country C in scenario 2, then its export performance still improves, but now by only one-third of that in table 5.3. Country C's export performance also deteriorates in scenario 2 in comparison with scenario 1, from 2.1% to 1.1%.

In principle, this worse performance of country C's domestically-produced exports is a remarkable outcome, since these exports do not change. So intuitively the outcome in scenario 1 should be the same as in scenario 2. But this is not the case, because export market growth in scenario 2 is not a good yardstick to measure the performances of domestic manufacturers. For one thing, this export market growth is 'inflated' with re-exports. And for another, the country weightings used to determine C's export market growth are different in scenario 2.

This example can also be analysed in more general terms. The main conclusions are that re-exports also affect the export performances of countries which are not involved in re-exports, and that the impact of re-exports depends on the size of re-exports in relation to domestically-produced exports, and on the growth of re-exports in relation to domestically-produced exports. The above example is, of course, a highly-simplified representation of reality. It can be further elaborated, for instance by making countries both distributors and producers of export goods. But this has no implications for the above conclusions.

# Annex B Tentative calculations to quantify the inflation effect

In this annex, we examine in greater detail the methodology of calculating the effect of re-export trends on export market growth. In the first instance we will concentrate on the period between 1996 and 2000, because most data are available for this period. Then we will give an indication of the effect in 2001-2004.

## B.1 Method

'Doubly-reweighted' export market growth[34] is calculated as the growth of import volumes weighted by export share of the Netherlands's trade partners. Part of a country's imports consists of re-exports, which are not destined for the domestic market. Imports for the purpose of re-exports should not be included in the calculation of export market growth as an approximation of the market for Dutch export goods. The aim is to calculate the increase in imports excluding re-exports. The difference between export market growth corrected for re-exports and the original export market growth is an indication of what is called the 'inflation effect'. The calculation of export market growth is also affected by the fact that the export weightings are based on total exports rather than domestically-produced exports. This 'mix effect' is not considered in this annex (see section 5.2 for this).

Quantification would be straightforward if the volume of re-exports were measured in all countries. Unfortunately that is not the case. Value figures are available for a number of countries and years, but price information is missing for nearly all countries. To estimate the effect, assumptions have to be made concerning the missing data. The key factors are (a) the share of re-exports in a country's imports, (b) the value growth of re-exports in relation to that of imports, and (c) price trends in re-exports in relation to those in imports.

Of course, the effect increases as the share of re-exports in imports increases and the volume of re-exports expands faster than that of imports. It is important to note that the *difference* between the growth rates is the crucial factor. If re-exports were to grow as fast as imports destined for the domestic market, then only the level of imports and not the development of export market growth would be affected. As the share of re-exports in imports increases, a difference between re-export growth and import growth will have a greater effect. If $w$ is the share of re-exports in imports, and $d$ is the difference between re-export growth ($g^w$) and import growth ($g^t$), then the growth of imports for the domestic market is equal to $g^t - wd/(1-w)$.

[34] As will become apparent below, export market growth is calculated by multiplying import growth with an export share based on total exports. This is somewhat different from the method used in practice, which includes a reweighting on the basis of the product mix. But this simplification does not make much difference for the calculation of the magnitude of the effect.

A number of assumptions have been made for the missing data, which - coupled with the available re-export data - will lead to the same number of outcomes. The variations in the outcomes give an indication of the bandwidth for the effect of the international re-export trend on the development of export market growth.

## B.2 Data

Table B.1 shows the data which has been used as the basis for the calculation of the inflation effect. The import figures shown in the table are also used by CPB to calculate export market growth. Import prices are also derived from this data set. Most of these figures come from the OECD.[35]

**Table B.1 Data used for calculating the inflation effects**

| Country | Imports 1995 | Imports 2000 | Re-exports 1995 | Re-exports 2000 | Average annual imports price change 1996-2000 | Average exports' share 1996-2000 |
|---|---|---|---|---|---|---|
| | billion dollars | | | | % | |
| Belgium | 148.4 | 155.5 | 40.2 | 48.2 | – 4.0 | 12.7 |
| Germany | 484.8 | 496.3 | 55.8 | 84.4 | – 5.6 | 26.7 |
| France | 281.7 | 311.8 | | 85.0 | – 5.9 | 10.6 |
| Italy | 208.8 | 235.9 | 1.4 | 1.3 | – 2.9 | 5.8 |
| Netherlands | 175.8 | 190.4 | 55.3 | 79.5 | – 7.2 | 0.0 |
| Spain | 116.8 | 156.7 | | | – 4.3 | 3.2 |
| United Kingdom | 267.6 | 332.8 | 10.3 | | – 4.3 | 10.3 |
| Canada | 164.3 | 240.4 | 11.6 | 18.5 | – 2.4 | 0.4 |
| United States | 743.8 | 1218.0 | 36.4 | 68.2 | – 1.8 | 4.1 |
| Japan | 336.2 | 379.6 | | | – 1.6 | 1.0 |
| Hong Kong | 192.8 | 213.1 | 143.8 | 188.3 | – 2.7 | 0.5 |
| Singapore | 124.5 | 134.6 | 51.3 | 57.6 | – 2.1 | 0.5 |
| Other countries | 1927.6 | 2412.6 | | | – 2.8 | 24.2 |

The data on re-exports in the European countries are based on input-output tables prepared by Eurostat. The figures on US and Canadian re-exports are based on Bureau of the Census statistics.[36] The export share is calculated for the period between 1996 and2000 and based on figures from the International Trade Statistics published by Statistics Netherlands (CBS).[37]

[35] The value figures and most prices come from the OECD. Unknown import prices have been estimated by CPB on the basis of known prices. See Van Welzenis and Suyker (2005).

[36] See the Strategis website, www.strategis.ic.gc.ca.

[37] See CBS-Statline, theme 'international trade', www.cbs.nl.

## B.3 Calculations

As mentioned, for many countries there are no data on re-exports. Hence assumptions have to be made on (a) the share of re-exports in a country's imports, (b) the value growth of re-exports in relation to that of imports, and (c) price trends in re-exports in relation to those in imports. Realistic lower and upper limits are calculated for each factor on the basis of the available data on and knowledge of re-exports. The effect is then calculated for a low estimate, in which all factors are set at the selected lower limit, and also for a high estimate, in which all factors are set at the selected upper limit. When calculating these values, no account is taken of the interaction between factors at this stage. It is less likely that a country has both a high share of re-exports in imports and a high volume growth of re-exports. To take account of this, the values for the higher estimate have been set more cautiously than might be warranted on the basis of the empirical data.

Of course, the selected limits are also surrounded with uncertainties. The vulnerability of the outcomes to the assumptions has been investigated by making the calculations under a large number of different assumptions. These analyses have been described in a separate memorandum.[38]

#### Share of re-exports in imports

The first factor which is important for the inflation effect is the nominal share of re-exports in a country's imports. For the periods under consideration and among the observed countries, this share ranges from virtually 0% (Italy) to nearly 75% (Hong Kong). It is not very realistic to choose the highest percentages for those countries which do not record re-exports. After all, if re-exports had been such an important phenomenon in 1995, they would certainly have attracted more attention from the statisticians.

The most conservative estimate assumes that the missing countries have no re-exports. Hence the figures for these countries are not corrected for re-exports. A figure of 15% is chosen as the highest percentage for the share of re-exports in imports. It is true that this share is much higher in some countries in the data set, but most of these countries are relatively small and have a clear distribution function. A share of 15% is close to the share of re-exports in German imports, for instance. In 1995 this share was slightly lower, by 2000 it was slightly higher. Because of its location, Germany also has a major distribution function, but it is also one of the world's largest producers of export goods. In effect, the assumption here is that re-exports are important for a country, but that it has not specialised in trade and distribution.

[38] See Mellens (2007).

### Value growth of re-exports and imports

The growth of re-exports and imports is the second key factor affecting the magnitude of the inflation effect. Here, too, the values are determined on the basis of the available data. In the conservative estimate, re-exports in the missing countries are growing in line with the total imports. This means that there is no need to correct the figures for re-exports regardless of the selected share of re-exports in imports. The analysis never looks at the size of the export market, only at its growth. As long as re-exports grow in line with domestically-produced exports, there is no inflation effect on export market growth.

The data show a wide variation in the growth rates of re-exports. In some countries, the value of re-exports even increased by less than the value of imports between 1995 and 2000. In that case, the doubly reweighted world trade growth would underestimate export market growth. However, those countries with low re-export growth are ones with very few (Italy) or few re-exports. In countries with a substantial share of re-exports in imports, re-exports grew by 3 to 8 percentage points per annum more on average than imports during the period in question. The high growth rates for the Netherlands and Germany, 5.9 percentage points and 8.2 percentage points respectively, can be attributed to the large share of ICT products in Dutch re-exports and the pivotal role of Germany in the ongoing economic integration of Western and Eastern Europe respectively. Consequently, these high growth rates should be regarded as exceptions. The high estimate therefore settles on a difference between the re-export growth and import growth of 5 percentage points.

### Price trends for re-exports and imports

The third important factor for the inflation effect is the difference in price trends for re-exports and imports. Unfortunately, very little is known internationally about the price trends in re-exports. Because computers and other electronic equipment (telephones, televisions etc) often constitute a large share of re-exports, and because the prices of these goods have either risen less than those of other goods or have even become cheaper over the past decades, it is reasonable to assume that the prices of re-export goods have fallen faster than those of other goods.

The price trends for total goods imports can be determined on the basis of the international data. The price trends in re-export goods are known only for the Netherlands. This means that the impact of the choices for this factor have a greater impact on the outcomes of the calculations, because they apply to all countries. In the conservative estimate, the price trends in re-exports are the same as in total imports. In effect, no correction is made for price effects. A striking feature of the Dutch figures for 1987-2005 is that in most years re-export prices fell by more than import prices. In a quarter of these cases, the prices of re-exports fell by 1.9% or more than the prices of imports. The median price differential was 1.0%.

The choice has fallen on price differentials of 0% per annum and 1% per annum respectively. In the conservative estimate, price changes do not contribute to the difference between export market growth corrected for exports and that including re-exports. The high estimate of a 1% price difference per annum may seem overly cautious, given the sharp falls in the prices of computers and other ICT products. But in the light of the paucity of the data material and the relatively large impact which the assumption on the price differential will have on the outcomes, the price effect has been set on the moderate side.

#### Tentative outcomes

With the various assumptions in place, the effect of re-export growth on export market growth can be calculated for the period between 1996 and 2000. On the basis of the conservative estimate, the average difference between export market growth corrected for re-exports and original export market growth works out at −0.6 percentage points. This difference is due above all to the strong export growth and the high re-export share in Belgium and Germany. But even on the assumption that no re-exports take place in those countries where they are not recorded, the effect on Dutch export market growth is substantial.

This effect rises to −1.4 percentage points in the high estimate. Under these assumptions, re-export growth is corrected for all countries with no recorded figures for re-exports. Moreover, there is an effect for *all* countries, because the assumption is that the prices of re-exports fall faster than the prices of domestically-produced exports. It is primarily the difference in volume growth which determines the inflation effect, rather than the share of re-exports in imports.

The calculations are vulnerable to the assumptions made. On the basis of the empirical data, the effects could be greater, on the assumption that re-exports have a large share in other countries' imports and are growing fast. But it is not very realistic to assume that re-exports are that important, given the modest attention which this phenomenon receives in the statistics. The figures on re-exports probably overestimate their importance, because countries with high re-exports will be more inclined to gather data on them. For this reason, the assumptions on the growth and share of re-exports have been set somewhat lower in the high scenario than might be warranted on the basis of the empirical data.

## B.4 Estimates for 2001-2004

The effect of re-exports on export market growth has been calculated for the period between 1996 and 2000, because it is for this period that most data on the development of re-exports are available. An analysis for more recent periods is desirable, not least because demand for ICT products tumbled worldwide in 2001 and 2002. Unfortunately, the available data material for recent years is even more fragmented, so that the indication of the difference between export market growth (excluding and including re-exports) is surrounded by even higher uncertainties.

Even so, we will try on the basis of the available data material to give an indication of the effect during this period. Re-export growth declined in nearly all countries after 2000. In the United States, for instance, re-exports grew by 13.2% between 1996 and 2000, but only by 7.0% between 2001 and 2004. During the latter years, there was barely any difference between import growth and re-export growth. In Hong Kong, re-export growth fell from 27.4% between 1996 and 2000 to 8.7% in the following four years. And in Germany, re-export growth (in dollar terms) fell from 9.6% between 1995 and 2000 to 4.6% in 2001 and 2002. The only exception was Singapore, where re-export growth accelerated after 2000 compared to the previous five years. One reason for this is the smaller share of computers in that country's re-exports.

Re-export growth in the Netherlands also works out lower in the years after 2000. The annual average difference between the volume growth of imports and re-exports fell from 7.2% to 3.4% between 2001 and 2004. On the basis of this data, and above all the data from Germany, it is possible to conclude with a considerable degree of certainty that the annual growth differential between export market growth (excluding re-exports) and export market growth (including re-exports) was smaller between 2001 and 2004 than in the previous five years. In particular on the basis of the German data, a lower limit of 0.3% seems plausible. This is half the lower limit for the period between 1996 and 2000. The German data paints too sombre a picture, because it does not include the upswing in re-exports which followed the downswing after the bursting of the ICT bubble. But the Dutch figures, which are available for a longer period, also point to a halving of the effect.

To determine the upper limit of the effect, assumptions have been made about the missing data. It should be noted that the highest scenarios for the difference in the value growth of imports and re-exports are less realistic. A differential between 2.5 and 5% seems plausible. However, the lowest scenarios for these values have also become less plausible for the period between 2001 and 2004, because of the strong growth in re-exports during the 1990s. As far as price trends are concerned, on the basis of the Dutch data a 1% stronger price fall for re-export goods seems realistic. On the basis of these assumptions, it seems plausible that the average difference between export market growth (including and excluding re-exports) works out between 0.3 and 0.7 percentage points per annum between 2001 and 2004. This constitutes a halving of the bandwidth for the period between 1996 and 2000.

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