

• All-Island Mapping Study Private Sector • Developing Air Services on the Island of Ireland • North/South Trade: A Statistical Ground-Clearing Exercise • All-Island Construction Sector Review • A Cross-Border Comparison and Manufacturing Growth and Productivity • All-Island Mapping Study Private Sector • Developing Air Services on the Island of Ireland • A Review of the All-Island Construction Sector • North/South Trade: A Statistical Ground-Clearing Exercise • A Cross-Border Comparison and Manufacturing Growth and Productivity • All-Island Mapping Study Private Sector • Developing Air Services on the Island of Ireland • North/South Trade: A Statistical Ground-Clearing Exercise • A Review of the All-Island Construction Sector • A Cross-Border Comparison and Manufacturing Growth and Productivity • All-Island Mapping Study Private Sector • Developing Air Services on the Island of Ireland • All-Island Construction Sector Review • North/South Trade: A Statistical Ground-Clearing Exercise • A Cross-Border Comparison and Manufacturing Growth and Productivity • All-Island Mapping Study Private Sector • Developing Air Services on the Island of Ireland • North/South Trade: A Statistical Ground-Clearing Exercise • All-Island Construction Sector Review • A Cross-Border Comparison and Manufacturing Growth and Productivity • All-Island Mapping Study Private Sector • Developing Air Services on the Island of Ireland • A Review of the All-Island Construction Sector • **North/South Trade: A Statistical Ground-Clearing Exercise** • A Cross-Border Comparison and Manufacturing Growth and Productivity • All-Island Mapping Study Private Sector • Developing Air Services on the Island of Ireland • North/South Trade: A Statistical Ground-Clearing Exercise • A Review of the All-Island Construction Sector • A Cross-Border Comparison and Manufacturing Growth and Productivity • All-Island Mapping Study Private Sector • Developing Air Services on the Island of Ireland • All-Island Construction Sector Review • North/South Trade: A Statistical Ground-Clearing Exercise • A Cross-Border Comparison and Manufacturing Growth and Productivity • All-Island Mapping Study Private Sector • Developing Air Services on the Island of Ireland • North/South Trade: A Statistical Ground-Clearing Exercise • All-Island Construction Sector Review • A Cross-Border Comparison and Manufacturing Growth and Productivity • All-Island Mapping Study Private Sector • Developing Air Services on the Island of Ireland • A Review of the All-Island Construction Sector • North/South Trade: A Statistical Ground-Clearing Exercise • A Cross-Border Comparison and Manufacturing Growth and Productivity • All-Island Mapping Study Private Sector • Developing Air Services on the Island of Ireland • North/South Trade: A Statistical Ground-Clearing Exercise • A Review of the All-Island Construction Sector • A Cross-Border Comparison and Manufacturing Growth and Productivity • All-Island Mapping Study Private Sector • Developing Air Services on the Island of Ireland • All-Island Construction Sector Review • North/South Trade: A Statistical Ground-Clearing Exercise • A Cross-Border Comparison and Manufacturing Growth and Productivity • All-Island Mapping Study Private Sector • Developing Air Services on the Island of Ireland • North/South Trade: A Statistical Ground-Clearing Exercise • A Review of the All-Island Construction Sector • A Cross-Border Comparison and Manufacturing Growth and Productivity • All-Island Mapping Study Private Sector • Developing Air Services on the Island of Ireland • A Review of the All-Island Construction Sector • North/South Trade: A Statistical Ground-Clearing Exercise

NORTH/SOUTH TRADE: A STATISTICAL GROUND-CLEARING EXERCISE

AN ANALYSIS OF NORTH/SOUTH TRADE STATISTICS

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FOREWORD

InterTradelreland's mission is to lead the development of an island economy through the expansion of cross-border trade and business. InterTradelreland aims to achieve this by delivering distinctive knowledge-based interventions that will produce significant returns in the areas of cross-border trade and business development. This has generated a need for a greater understanding of the nature of existing cross-border trade flows.

Developing a comprehensive understanding of global trade flows is an ongoing issue that exercises the minds of international statistical agencies. Developing this understanding within a North/South context is further complicated by the existence of three official sources of statistics on trade across the shared border. In an ideal world the three sources would be derived on the same basis, cover the same range of variables and conform to fixed international standards. However, this is not the case, with the result that some confusion exists over fundamental issues such as the quantum of North/South trade flows, the balance of trade between the North and the South and the sectoral composition of such trade.

This report clears the ground of the confusion that surrounds these basic issues, as far as is possible within current data collection procedures. It uncovers the definitional and methodological differences that account for the apparent inconsistencies between the three official data series and allows a reliable baseline indicator to be established against which future movements can be assessed.

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ABSTRACT

In order to yield useable results the analysis of trade flows between Ireland and Northern Ireland must be based on reliable data. The currently published data series for exports from Northern Ireland to Ireland differ substantially. There are differences in definitions, differences in data collection methodology and, of course, measurement and sampling errors deriving from the surveys used to compile the data. However, we found that addressing just one important definitional difference between the two main data sources very significantly reduced the difference between the alternative estimates of the value of exports from Northern Ireland to Ireland. Moreover, a comparison of trade composition for manufacturing sectors using data compiled on a consistent basis showed that the sectoral shares calculated from the two sources are also similar. A more detailed analysis of trends in trade flows over the last thirty years shows that whilst trade volumes are steadily increasing, Northern Ireland has become a much less important market for Ireland's exporters and that, equally, Ireland's share in Northern Ireland's exports has also declined, albeit not as significantly. Not only has the relative importance of North/South trade changed, its composition has changed too, away from more traditional products and towards more 'high-tech' commodities.

EXECUTIVE SUMMARY

The remit of *InterTradeIreland* is to promote cross-border trade and enhance the competitiveness of firms through North/South co-operation. In order to progress these aims it is necessary to gain a better understanding of the nature of trade flows, the nature of the economies and the types of interaction between firms. An important aspect of this is the degree to which North/South trade sustains businesses and how cross-border synergies through trading and other interaction can help improve the competitiveness of the island economy.

Any analysis that aims at understanding the cross-border trade flows must be based on reliable data. There are three sources of data on trade between Northern Ireland and Ireland. When these are compared inconsistencies emerge. In particular the data that is published by the Central Statistics Office (CSO) of Ireland does not match that published by Her Majesty's Customs & Excise (HMCE). Specifically the data series for exports from Northern Ireland to Ireland differ substantially. However, the corresponding flows for trade between Ireland and the UK match quite well. This implies that there are some issues relating to the assignment of trade to regions such as Northern Ireland and definitional differences that have a greater impact at regional levels are responsible for gaps between the HMCE and CSO data.

Indeed an important definitional difference between the HMCE and CSO series relates to the way in which the country of origin is defined. The HMCE data uses the country of despatch as the exporting country rather than the country of origin. As there are substantial exports of goods produced in Great Britain that are despatched from Northern Ireland to Ireland, addressing this definitional difference accounts for more than half of the difference (for exports from Northern Ireland to Ireland). Some of the remaining difference may well be due to the methodology adopted by the HMCE to allocate trade that is recorded by headquarters of large firms to their branches in the UK regions.

A comparison of trade composition for manufacturing sectors showed that the sectoral shares are very similar for both data sources. This implies that an analysis of changes in trade shares can be carried out with both the HMCE and CSO data without seriously biasing the results. Since it appears that definitional issues are the main cause of differences between the data series, an analysis of trends of the trade flows would be meaningful. This exercise shows that trade volumes are steadily increasing and that the composition of these volumes is changing away from more traditional towards more high-tech commodities. However, the trade shares are declining over time. In particular, the proportion of exports from Ireland to Northern Ireland has fallen dramatically.

1. INTRODUCTION

InterTradeIreland's remit to focus on cross-border trade has generated a need for greater understanding of the nature of these important flows of goods and services, the manner in which they sustain businesses - in particular Small to Medium-sized Enterprises (SMEs) as they attempt to develop and grow to compete in the wider global market place.

InterTradeIreland has identified a series of research needs in order to address these challenges over the longer term. Amongst the most urgent is an initiative directed at improving availability and usefulness of data needed to study the magnitude and nature of cross-border trade flows, and their relationship to the characteristics of the firms who are already trading across the border, or who could benefit from doing so in the future.

Although North/South trade only makes up a small share of trade of both Ireland and Northern Ireland, it represents a vital market that is more easily accessible to firm start-ups and existing SMEs. To build on this market, we need to understand better the nature of existing cross-border trade as well as factors that may prevent it reaching its full potential.

In order to address this need, a more detailed knowledge of the composition of cross-border trade and how it reflects the underlying production structures and the competitive conditions facing firms in both parts of the island is necessary. This needs to include a detailed study of the origin, destination and composition of trade between North and South. However, in order to accomplish this reliable data on trade flows and their composition are needed. This study examines the data issues, particularly with regard to the available trade statistics. Specifically it aims to address a problem, which has hampered efforts in understanding North/South trade, namely the apparent inconsistency of published trade data.

This report is organised as follows. Chapter 2 outlines the data sources for published data on North/South trade flows, Chapter 3 provides a comparison between these different data sources. Chapter 4 shows the importance of definitional differences and demonstrates how the data series can be aligned and Chapter 5 outlines trends in North/South trade. Finally, Chapter 6 summarises the findings of this report and provides conclusions.

2. DATA SOURCES

There are three sources of data on trade between Northern Ireland and Ireland and they are most easily identified by reference to the organisations that produce them.

- The Northern Ireland Economic Research Centre (NIERC) conducts an annual survey of firms in Northern Ireland which it uses to produce estimates of external sales outside Northern Ireland by destination.
- Her Majesty's Customs & Excise (HMCE) compile statistics on sales as a by-product of their revenue collection activities and these are used (since 1993) to generate statistics on the UK's trade with members of the EU. HMCE use the geographic location on traders' returns to allocate foreign arrivals and despatches (exports and imports) to the different regions of the UK.
- The Central Statistical Office (CSO) receives data collected by the Revenue Commissioners as mandated by the EU Council regulation (in the UK). Northern Ireland is identified as source of imports and a destination of exports.

In addition, a related source is another publication by the CSO, namely the Census of Industrial Production (CIP) which, as a by-product contains data on exports from Ireland to the UK, however Northern Ireland is not identified separately.

In an ideal world the three sources would be derived on the same basis, cover the same range of variables and conform to fixed international standards. However, these three independent sets of data which measure Northern Ireland's trade with Ireland, are distinguished by some important differences in coverage and availability, which, in practice, restrict the possibilities for comparison.

1. The NIERC data covers only exports, so there are no figures for imports. This means that there are three series for Northern Ireland's exports to Ireland, but only two series for Northern Ireland's imports from Ireland.
2. The NIERC data only aims at complete coverage of manufactured exports.¹ So comparisons must for the moment be confined to manufacturing. This is not, however, as significant an exclusion as it might appear, since both the HMCE and CSO figures cover virtually only goods and the trade in non-manufactured goods between Northern Ireland and Ireland appears to be relatively small (less than 10%).
3. The NIERC data is annual and for fiscal years (April to March). The most recent published data is for the fiscal year 1999/2000 and 2000/2001.
4. The HMCE data is available quarterly but only from the first quarter of 1999 and up to the end of the fourth quarter 2001.
5. The CSO Trade Statistics are collected by commodity groups, whereas the NIERC data refer to production sectors. This necessitates a mapping from product to sector which might result in errors if the concordance table used is not accurate.
6. The CSO CIP data refers to exports only and only covers the UK and not Northern Ireland separately.

Taking these considerations into account, we have the following set of five comparisons:

Exports of Manufactured Goods from Northern Ireland to Ireland

- a 1999/2000 and 2000/2001, by NIERC category - NIERC & HMCE;
- b 1999 Q1 to 2001 Q4, total manufactures - HMCE & CSO ; and
- c 1999 to 2001, by SIC92² 2-digit category - HMCE & CSO.

Imports of Manufactured Goods into Northern Ireland from Ireland

- a 1999 Q1 to 2001 Q4, total manufactures - HMCE & CSO ; and
- b 1999 to 2001, by SIC92 2-digit category - HMCE & CSO.

These comparisons are all made in Euro (€)³, and are set out in the following chapter.

¹ There is data for industrial support agency client companies outside manufacturing, and research is presently underway which aims to produce estimates covering all tradeable services exports by destination. But, for present purposes, the only NIERC data used here is for manufactured goods.

² The Standard Industrial Classification of 1992 (SIC92) of the UK is virtually identical to the EU's NACE classification.

³ The HMCE and NIERC data was converted to € using the average exchange rates for each quarter from the Central Bank of Ireland.

⁴ Although the 'rules' governing the 'census' include a threshold level of external sales or purchases (currently €233,000) below which detailed export data is not collected. Below an even lower threshold level of turnover (currently around €50,000) and for other traders not registered for VAT no data is collected at all. For a brief description of these 'rules' see Appendix 1.

⁵ The industrial classification of firms is undertaken by the Statistics Branch of Northern Ireland's Department of Enterprise Trade and Investment and recorded in the Inter-Departmental Business Register.

3. DATA COMPARISON

This chapter will provide a detailed comparison of the different data sources. Firstly the NIERC and HMCE series for exports from Northern Ireland to Ireland are compared. This allows us to check whether these sources are consistent. For the data from the CSO a similar comparison is not possible but, as data on exports to the UK as a whole is available from the CIP, a comparison between the series on exports from Ireland to the UK is possible.

A comparison of the NIERC and HMCE series

The data for this comparison are shown in Table 1. Differences have been recorded in 'bottom line' figures. In 1999/2000 the NIERC manufactured exports figure was about 5% below the HMCE figure, in 2000/2001 it was about 7% above. In both cases the difference amounts to about 100m.

However, there is a marked contrast between the relative consistency of the totals and the lack of consistency in the different categories. In some cases the NIERC estimate is much larger (e.g. Paper & Printing), in others much smaller (e.g. Other Machinery & Equipment). Notice though that the pattern of 'inconsistency' is broadly similar for both years (Paper & Printing above, Other Machinery & Equipment below, and so on).

There could be a number of factors (other than straightforward errors of classification) contributing to the lack of 'fit' between the two sets of data. First of all, it is important to remember that they are constructed in completely different ways from entirely independent sources. The HMCE data is a 'census' of a particular set of administrative records.⁴ The NIERC data, by contrast, is estimated from the survey responses of a sample of firms. The most significant aspect of the difference in construction methods is that the HMCE data classifies trade on a transaction-by-transaction basis according to the information on each return. By contrast, in the NIERC case, the commodity classification of exports is based on the industrial classification of the firm producing the product. An industrial classification, which, in turn, is based on the 'principal' activity of the firm.⁵ So, for example, if a firm in the Chemicals sector exported some Plastics (a by-product of its principal activity), the value of those Plastics exports would be included in Northern Ireland's exports of Chemicals.

This last, and quite fundamental, difference (at the classification level) between these two data collections is, quite simply, a matter of design which reflects the different purposes of the two data collections. For HMCE the principal motivation is the administration of VAT where commodity classification is critical. For NIERC the exports data is a by-product of a data collection whose original purpose was evaluating the competitive performance of firms benefiting from industrial policy interventions. So the firms rather than the products were the centre of attention, an orientation which shaped the methodology underpinning the survey which relied on drawing samples of firms classified by sector.

It would be unwise to conclude on the basis of just two years data that HMCE and NIERC will always produce a similar estimate of Northern Ireland's manufacturing exports to Ireland. Nonetheless it is somewhat encouraging that the two figures are broadly consistent. Indeed, it seems reasonable to conclude that manufactured exports were approximately 1400m and 1600m in both years.

NIERC CATEGORIES	SIC92-2DIGIT	1999/2000				2000/2001			
		NIERC M	HMCE M	NIERC + HMCE	HMCE LESS NIERC M	NIERC M	HMCE M	NIERC + HMCE	NIERC LESS HMCE M
Food & drink & tobacco	15&16	393.4	347.0	1.133	46.4	405.5	403.4	1.005	2.1
Textiles & clothing & leather	17&18&19	118.6	132.7	0.894	-14.0	105.9	91.9	1.152	14.0
Wood & wood products	20	107.7	82.1	1.311	25.6	153.1	92.3	1.658	60.7
Paper & printing	21&22	123.3	85.7	1.439	37.6	133.5	69.2	1.928	64.3
Coke, petroleum & other mineral Products	23&26	121.8	139.9	0.871	-18.1	148.2	130.0	1.140	18.2
Chemicals & man-made fibres	24	56.2	75.6	0.744	-19.4	55.4	67.6	0.820	-12.2
Rubber & plastics	25	109.3	133.3	0.820	-24.0	112.4	101.8	1.104	10.6
Basic metals & fabricated metal products	27&28	149.9	100.5	1.490	49.3	175.9	109.0	1.616	67.1
Other machinery & equipment	29	46.8	149.4	0.313	-102.6	55.4	162.4	0.341	-107.0
Electrical & optical equipment	30&31&32&33	74.9	111.8	0.670	-36.8	101.0	117.9	0.856	-16.9
Transport equipment	34&35	57.8	82.1	0.703	-24.4	66.8	77.7	0.860	-10.9
Other manufacturing	36&37	50.0	51.2	0.975	-1.2	61.9	43.3	1.430	18.6
ALL MANUFACTURING INDUSTRIES		1409.6	1491.2	0.945	-81.6	1574.8	1466.4	1.074	108.6

Notes: 1. The main features of this table: the time period and the classification of exports; follow from the design of the NIERC Survey of Northern Ireland firms and the processing of that data. For example, the time period - fiscal years - 02 of one year to 01 the following year, was chosen to match the typical firm's annual accounting period. Here the year 1999/2000 is 1999 02 to 2000 01, and 2000/2001 is 2000 02 to 2001 01. For further discussion of the NIERC data and its compilation, as well as that from the HMCE see Appendix. 2. NIERC is the manufactured exports data as published by NIERC; the HMCE column is calculated from a file of SIC 92 4-digit data compiled by Customs & Excise for this project. 3. Non-manufacturing exports recorded in the HMCE 4-digit data account for 13.6% of total trade in the year 1999/2000 and 16.4% for 2000/2001.

Comparison of the CSO Trade Statistics and the Census of Industrial Production

Whilst there is only one source of data on Ireland's trade with Northern Ireland (the CSO), it is possible to compare the total exports from Ireland to the whole of the UK using data from the CIP. This comparison is shown in Table 2 for the period 1991 to 2000. The largest annual deviation is about 14% however, on average the two data sources differ by about 7%.

What is somewhat surprising is the fact that in some years (1991-1999), the trade statistics record a large trade flow but in other years a smaller trade flow than the CIP. However, the points made above in relation to the comparison between NIERC and HMCE trade data are also valid in this case. Indeed an average deviation of 7% might be expected given that the data is collected using quite different methodologies.

TABLE 2
EXPORTS OF MANUFACTURED GOODS FROM IRELAND TO THE UK
TRADE STATISTICS AND CENSUS OF INDUSTRIAL PRODUCTION, 1991 - 2000

YEAR	CENSUS OF INDUSTRIAL PRODUCTION (CIP)	TRADE STATISTICS (TS)	RATIO (TS/CIP)
	M	M	
1991	4468.9	4904.0	1.10
1992	4921.2	5217.0	1.06
1993	5643.2	5282.1	0.94
1994	6558.2	6378.8	0.97
1995	7815.7	7357.0	0.94
1996	8376.5	7835.0	0.94
1997	8962.8	9138.1	1.02
1998	9654.6	10976.4	1.14
1999	11508.4	12675.8	1.10
2000	17598.5	16533.7	0.94

Notes: The data from the Census of Industrial Production refers to exports from all manufacturing local units. The data from the Trade Statistics refers to exports of Industrial Produce.

Matching Counterpart Trade Data: The National Context

Before the trade data for North/South is compared using the CSO and HMCE data, it was useful to first carry out a similar comparison at the national level. Such a comparison of the total trade flows between Ireland and the UK provides a perspective on the magnitude of the differences that arise between the estimates of the value of North/South trade from two principal sources, CSO and HMCE.

Both the HMCE and the CSO produce data measuring the same flows, so that this is a direct comparison between data series that are collected using the same methodology and definitions as those that will be used for the North/South comparison.

The data are quarterly for the period 1999 to 2001 and they are set out in Table 3. The first four columns refer to exports from the UK to Ireland, where the first two columns show the trade flows as recorded in the two sources, the third column shows the ratio between the two, and the fourth column the difference between the two series. Table 3 clearly shows that the differences between the two data series on exports from the UK to Ireland are small, averaging just 4% or less than 170 million. This difference is quite acceptable.

With regard to the export data recorded from Ireland to the UK, a different picture emerges. Firstly, there is a distinct divergent trend between these two series with the initial difference of 15% recorded. This is almost acceptable, however, the trend increases to a very substantial difference of 44%. Overall, the difference is very large averaging about 25% or about 1260 million. Finally the last three columns show how the trade balance changes depending on which series are used. If the HMCE series are used then UK exports to Ireland exceed imports into the UK from Ireland yielding a positive trade balance for the UK while the opposite holds if the CSO series are used.

This exercise shows that even at the national level the data series do not line up perfectly. However, at least for the export series (from the UK to Ireland) the differences are quite small.

TABLE 3
TOTAL TRADE BETWEEN THE UNITED KINGDOM AND IRELAND
(HMCE & CSO DATA 1999-2001)

QUARTER	EXPORTS FROM UK TO IRELAND				IMPORTS INTO UK FROM IRELAND				BALANCE UK & IRELAND			
	HMCE M	CSO M	RATIO HMCE + CSO	DIFFERENCE HMCE LESS CSO	HMCE M	CSO M	RATIO HMCE + CSO	DIFFERENCE HMCE LESS CSO	HMCE M	CSO M	DIFFERENCE HMCE LESS CSO	
1999 Q1	3420.2	3302.8	1.04	117.4	2884	3403.6	0.85	-519.7	536.2	-100.8	637	
1999 Q2	3504.8	3469.7	1.01	35.2	2870.1	3443.6	0.89	-573.4	634.7	26.1	608.6	
1999 Q3	3793.7	3529.7	1.07	264	2940.6	3713.7	0.87	-773	853.1	-183.9	1037	
1999 Q4	4435.4	4301	1.03	134.4	3293.7	4104.8	0.97	-811.1	1141.7	196.2	945.5	
2000 Q1	4403	4192.1	1.05	210.9	3422.6	4173.1	0.99	-750.4	980.4	19.1	961.3	
2000 Q2	4178.3	4110.2	1.02	68.1	3521.2	4496.6	0.94	-975.3	657.1	-386.4	1043.4	
2000 Q3	4655.4	4161.5	1.12	493.9	3645.5	4635.5	0.96	-989.9	1009.9	-474	1483.9	
2000 Q4	5388.7	5149.4	1.05	239.3	4117.4	5564.7	1.10	-1447.4	1271.3	-415.3	1686.7	
2001 Q1	5065.5	4908.5	1.03	157	3690.3	5208.5	1.16	-1518.2	1375.1	-300.1	1675.2	
2001 Q2	4905	4742.4	1.03	162.6	3611.6	5301.5	1.09	-1689.9	1293.4	-559.1	1852.5	
2001 Q3	5343.9	5127.5	1.04	216.4	3457.9	5880.9	1.18	-2423	1886	-753.4	2639.4	
2001 Q4	5632.5	5662.3	0.99	-29.8	3462.1	6107.9	1.18	-2645.8	2170.5	-445.6	2616.1	
YEAR												
1999	15154.1	14603.2	1.04	550.9	11988.5	14665.7	0.91	-2677.2	3165.6	-62.5	3228.1	
2000	18625.4	17613.2	1.06	1012.2	14706.8	18869.8	0.99	-4163.1	3918.6	-1256.6	5175.2	
2001	20946.9	20440.7	1.02	506.2	14221.9	22498.8	1.15	-8276.9	6725	-2058.1	8783.1	
1999/00	16136.9	15492.5	1.04	644.4	12527.1	15435.2	0.93	-2908	3609.8	57.4	3552.4	
2000/01	19287.8	18329.5	1.05	958.3	14974.4	19905.3	1.03	-4930.9	4313.4	-1575.8	5889.1	

Matching Counterpart Trade Data: Manufacturing Trade between Northern Ireland and Ireland

Given what we have already shown above regarding the differences between the national trade flows it is reasonable to expect that differences between the regional trade flows will be at least as large, since it is more difficult to apportion trade flows at the regional level.

As with the national trade flow, statistics produced by the HMCE and the CSO are used in the comparison. This introduces a complication, namely that a comparison is made more difficult since the CSO classifies trade by commodities while the HMCE classifies trade by sectors. In order to overcome this problem it is necessary to map the CSO data from a product classification to a sectoral classification using a special concordance table that is available from Eurostat.

The HMCE data was then compared with that produced by the CSO. The figures are displayed in Table 4. The estimates of Northern Ireland's exports to Ireland, from the two quarterly series, display a fairly stable relationship. The HMCE estimate seems to be between 1.3 and 1.5 times larger than the CSO estimate, and the average deviation is about 42%. This was a considerably larger difference than that found at the national level above. As we can see from the annual totals, this amounts to an HMCE estimate that is larger by around 0.64 bn per annum for each of the last three years.

The import data is recorded in the second block of columns. Here a reverse pattern is displayed. The HMCE estimate is generally smaller than the corresponding CSO estimate until the third quarter of 2000 after which it exceeds the CSO estimate. Furthermore, in contrast to the export figures, the ratio between the two import figures seems to be exhibiting a trend-like variation. In the first quarter recorded here (1999 Q1) the HMCE figure was around 90% of that of the CSO. However, over the course of the 12 quarters, it has increased (initially somewhat unsteadily). By the last quarter of 2001 the HMCE estimate was larger (albeit only by 60m) than the CSO figure. Of course with such a short series (just three years of data) it would be premature to conclude that the relationship between the two sets of estimates had changed permanently. Nonetheless it does seem that, since the beginning of 2000, HMCE and the CSO have produced similar figures for Northern Ireland's manufacturing imports from Ireland.

The implications of the two datasets for the North's balance of trade in manufactures is recorded in the last few columns. Clearly (and unsurprisingly given what we now know) they provide very different estimates. The HMCE trade data show a surplus around 80m for each quarter in 1999, this shrinks to almost zero in 2000, and turns into a deficit of about 30m a quarter in 2001. In strong contrast the CSO data implies a deficit throughout. Noticeably, this deficit shows no particular trend, and it fluctuates in a relatively narrow band (between 50m and 120m).

It is worth returning briefly to perhaps the most noteworthy feature of the data - the estimates of imports from Ireland into Northern Ireland. One of the widely accepted deficiencies of HMCE's system for compiling regional trade statistics is the systematic underestimation of imports destined for regions outside the South East of England. This arises because traders operating multi-establishment businesses are not obliged to supply an ultimate destination for goods they import from elsewhere in the EU. Consequently the returns on which HMCE base their trade data record the head office (very often in South East England) as the destination for imports which are, in fact, being supplied to branches of the business elsewhere in the UK. Needless to say this does not arise with the corresponding data from the CSO, since supplying a destination for exports (in Ireland as in the UK) is mandatory.

One further technicality is worth mentioning here. The reporting of detailed information on sources and destinations of trade to the CSO, as to HMCE, is only required for traders exceeding threshold level of transactions; ie: for Ireland the threshold for imports is around 190,000 and for exports about 635,000; and in the case of the UK the exports and imports thresholds are the same, about 360,000.⁶ Needless to say, the difference between these thresholds may well have considerable implications for the estimates of trade. Clearly there may well be traders who do reach Ireland's export threshold and yet whose import level exceeds that of the UK. This could potentially provide part of the explanation for the differing trends between HMCE's and the CSO's estimates of Northern Ireland's imports from Ireland.

⁶ Details are given in Appendix 1.

TABLE 4
MANUFACTURING TRADE BETWEEN NORTHERN IRELAND AND IRELAND
(HMCE & CSO DATA 1999 TO 2001)

QUARTER	EXPORTS FROM NORTHERN IRELAND TO IRELAND				IMPORTS INTO NORTHERN IRELAND FROM IRELAND				BALANCE NORTHERN IRELAND & IRELAND				
	HMCE M	CSO M	RATIO HMCE + CSO	DIFFERENCE HMCE LESS CSO	HMCE M	CSO M	RATIO HMCE + CSO	DIFFERENCE HMCE LESS CSO	HMCE M	CSO M	DIFFERENCE HMCE LESS CSO	HMCE M	CSO M
1999 Q1	342.5	232.9	1.47	109.5	265.6	298.8	0.89	-33.2	76.7	-66.0	142.7		
1999 Q2	365.9	266.6	1.37	99.1	284.7	319.6	0.89	-35.0	81.0	-53.0	134.1		
1999 Q3	375.1	250.7	1.50	124.4	266.4	305.6	0.87	-39.1	108.6	-54.8	163.5		
1999 Q4	386.3	243.9	1.58	142.2	314.0	325.0	0.97	-11.0	72.1	-81.1	153.1		
2000 Q1	364.1	242.6	1.50	121.9	358.6	362.9	0.99	-4.2	5.9	-120.3	126.2		
2000 Q2	368.2	269.1	1.37	99.4	367.7	393.5	0.93	-25.8	0.8	-124.4	125.2		
2000 Q3	367.2	274.4	1.34	92.7	336.5	351.5	0.96	-15.0	30.7	-77.1	107.7		
2000 Q4	357.8	276.7	1.29	80.8	360.4	329.0	1.10	31.4	-3.0	-52.3	49.4		
2001 Q1	372.6	278.3	1.34	94.2	401.3	346.0	1.16	55.3	-28.8	-67.6	38.9		
2001 Q2	413.1	293.1	1.41	118.8	442.5	406.5	1.09	36.0	-30.7	-113.4	82.8		
2001 Q3	389.7	274.8	1.42	114.7	418.5	353.8	1.18	64.7	-29.0	-79.1	50.0		
2001 Q4	378.9	271.3	1.40	107.4	405.7	344.0	1.18	61.7	-27.0	-72.8	45.7		
YEAR													
1999	1469.2	994.1	1.48	475.1	1130.7	1249.0	0.91	-118.3	338.5	-254.9	593.4		
2000	1457.6	1062.8	1.37	394.9	1423.2	1436.9	0.99	-13.6	34.4	-374.1	408.5		
2001	1552.5	1117.4	1.39	435.1	1668.1	1450.3	1.15	217.7	-115.5	-332.9	217.4		
1999/00	1491.3	1003.8	1.49	487.5	1223.7	1313.0	0.93	-89.3	267.6	-309.2	576.8		
2000/01	1465.6	1098.5	1.33	367.1	1465.9	1419.9	1.03	45.9	-0.2	-321.4	321.2		

4. ALIGNING THE DATA

Overall, the comparison of the North/South data yields two striking results. Firstly, a persistently large gap exists between the CSO and HMCE data with regard to exports from Northern Ireland to Ireland. Secondly, the differences between the series for imports into Northern Ireland from Ireland are much smaller, averaging about 10%, which is similar to that at the national level. Consequently whilst one might be reasonably satisfied with the match between the series on imports into Northern Ireland from Ireland, the difference between the other pair are too large to be useable with any confidence. So it is necessary to further investigate the possible causes of this large divergence that is the focus of this chapter. There are a number of factors, which may account for the apparently large discrepancies between the data from the HMCE and the data from the CSO. Some of these have to do with the way the data is collected, and others include methodological differences.

Explaining the Differences

The data collection issues arise from the fact that, following the completion of the 'Single Market' in 1992, customs barriers disappeared between North and South and with them the customs forms which hitherto provided the raw figures required to compile trading data. Now, in both Ireland and Northern Ireland, trade data is compiled as a by-product of the administration of value added tax (VAT). The revenue gathering authorities seem less concerned with ensuring compliance with the trade-related aspects of the exercise and, equally, traders appear to be less diligent in that aspect of their form filling. A further important difference between the data collection for the UK and that in Ireland arises out of the fact that differing thresholds are set above which traders must complete the trade survey. For consignments below the thresholds both the CSO and the HMCE apply a method of estimation. Hence the percentage of trade that is below threshold is often referred to as estimates.

On the methodological side there are a number of different definitions in use when collecting trade statistics. These relate to the types of transactions included, such as consignments that are stored in bonded warehouses. Furthermore, trade can be classified on the basis of country of origin or country of despatch. These need not be the same if a consignment of goods is shipped via a third country. As it happens the data collected by the HMCE is classified by country of despatch while that for the CSO is classified by the more common country of origin definition. This therefore marks out one probable cause for the differences, which might be particularly significant for regional trade data, as for example Northern Ireland's exports of goods that are produced in the rest of the UK may form a significant proportion of trade. A further issue arises out of the fact that a concordance table needed to be used to map the CSO data from a product classification to a sector classification. This will have a number of implications if some manufacturing trade is misclassified into primary sector trade or services trade. Finally, errors of measurement either due to the fact that forms are filled in incorrectly or whether insufficient effort is put into checking each survey form is more difficult to address. However the other issues identified above are more readily addressed as the CSO records the importance of below threshold trade and made available a special file that allows trade to be classified both using the country of origin as well as the country of despatch definition.

Table 5 highlights the importance of the below threshold trade in total trade. The table clearly shows that below threshold trade does not make up a large fraction of total trade. Following some initial high values for the years 1994 and 1995, when the current system of data collection was introduced following the completion of the Single Market, the values are relatively low. The only exception here is for exports from Ireland to Northern Ireland where the average over the period 1994 to 2001 is almost 12%. Nevertheless, only implausibly large differences with regard to estimation procedure could account for the differences found in the overall level of trade flows.

TABLE 5
ESTIMATES AS A PERCENTAGE OF TOTAL TRADE FOR IRELAND

	IMPORTS FROM GB	EXPORTS TO GB	IMPORTS FROM NORTHERN IRELAND	EXPORTS TO NORTHERN IRELAND
1994	6.61	3.26	14.57	16.29
1995	8.62	4.98	8.67	15.11
1996	4.67	0.77	6.15	11.93
1997	3.62	1.67	4.76	9.10
1998	3.74	2.98	6.44	11.42
1999	3.47	1.9	6.02	9.79
2000	2.55	1.77	5.18	8.86
2001	2.21	1.70	4.84	10.67
AVERAGE	4.44	2.38	7.08	11.64

A close inspection of the concordance table that was used to map the CSO trade data from the product classification to the sector classification showed a number of anomalies. While some of these were trivial, others were more important in so far as an incorrect mapping of certain products into services, which should be mapped into manufacturing, was found. Furthermore some incorrect mappings between manufacturing sectors were also found.

Applying common definitions

The next step is to analyse the data using a common definition with regard to the origin of the trade. Here a special file allowed comparison by re-classifying the CSO data to the country of despatch basis used by the HMCE. As there are problems with the file for exports from Ireland to the UK and Northern Ireland the focus here was on the opposite flow. Table 6 illustrates the effect of defining the data according to country of consignment on the differences as indicated by the ratio of the two series. In general the ratio is smaller indicating that the series matches closely. This is particularly the case with regard to the annual data. Of course the quarterly data could suffer from some timing issues where trade is not accurately attributed to the right quarter giving rise to some mismatch. Overall, the effect of using the common definition is to reduce the difference slightly, so that the data aligns more closely with a maximum difference of 8% and an average difference of just 3% for the quarterly data.

TABLE 6
TOTAL MANUFACTURING EXPORTS FROM THE UNITED KINGDOM TO IRELAND (HMCE & CSO DATA 1999 TO 2001) APPLYING THE COUNTRY OF CONSIGNMENT DEFINITION TO THE CSO DATA

QUARTER	EXPORTS FROM UK TO IRELAND		RATIO	DIFFERENCE
	HMCE M	CSO M	HMCE/CSO	HMCE - CSO
1999 Q1	3420.2	3322.3	1.03	97.9
1999 Q2	3504.8	3454.5	1.01	50.4
1999 Q3	3793.7	3508.1	1.08	285.7
1999 Q4	4435.4	4415.8	1.00	19.5
2000 Q1	4403.0	4240.0	1.04	163.0
2000 Q2	4178.3	4260.0	0.98	-81.7
2000 Q3	4655.4	4300.0	1.08	355.4
2000 Q4	5388.7	5500.0	0.98	-111.3
2001 Q1	5065.5	5010.0	1.01	55.5
2001 Q2	4905.0	4750.0	1.03	155.0
2001 Q3	5343.9	5260.0	1.02	83.9
2001 Q4	5632.5	5860.0	0.96	-227.5
YEAR				
1999	15154.1	14700.6	1.03	453.5
2000	18625.4	18300.0	1.02	325.4
2001	20946.9	20880.0	1.00	66.9
1999/00	16136.9	15618.3	1.03	518.6
2000/01	19287.8	19070.0	1.01	217.8

The comparison between the trade series with respect to exports from Northern Ireland to Ireland is illustrated in Table 7 and Figure 1. In particular the table shows the HMCE series along with the CSO data using the alternative definitions, while the figure shows the same series with the conventional CSO definitions and the old concordance table. It clearly shows that the reclassification of the CSO data to country of despatch substantially reduces the disparities between the HMCE series and that from the CSO. The average difference between the two series as measured by the ratio shows a decrease from 42% to 18%.

Here the change in the definition makes a bigger impact than for trade with Great Britain, which initially is somewhat surprising. However, this is explained by the fact that exports from Northern Ireland include goods made in the rest of the UK. Indeed this makes up a significant proportion of the total exports from Northern Ireland to Ireland. By applying the same definition used by the HMCE for the CSO series this trade is captured in the adjusted series.

Of course the remaining difference between the series is not trivial as it is in the region of 200 million annually. However, as was pointed out above, regional trade is likely to be measured less accurately than national trade. For the quarterly series the difference between the regional and national deviations (the difference between the ratios) is on average 15%. In other words the HMCE and CSO series for exports from Northern Ireland to Ireland differ by 15% more than the series for exports from the UK to Ireland.

For completeness a special file prepared by the CSO to apply the HMCE definition along with the improved concordance table was used. However, it should be noted that there are some inconsistencies in this special file and as a result the data that was constructed here is only indicative. This data is reported in Table 8 and Figure 2, and shows that for imports into Northern Ireland from Ireland the change in the definition makes only a small impact reducing the differences from 10% to 9%.

Overall the analysis shows that the national figures match up very closely, while at the regional level the series for exports from Northern Ireland to Ireland show larger differences. This implies that the problem is one of allocating the regional trade and specifically the exports from the UK to Ireland. In this respect the methodologies used to construct the data are important. In particular, for the HMCE, the construction of regional trade statistics records companies using the postcode of the head office. This means that some trade has to be allocated to the regions where branches of larger firms are located. This is being done using information provided by the larger companies. Clearly this might introduce errors into the data if, for example, weights are applied on the basis of a small sample of very large firms, which is not fully representative for all firms and all sectors.

TABLE 7
TOTAL MANUFACTURING EXPORTS FROM NORTHERN IRELAND TO IRELAND
(HMCE & CSO DATA 1999 TO 2001) APPLYING THE COUNTRY OF CONSIGNMENT
DEFINITION TO THE CSO DATA

EXPORTS				
FROM NORTHERN IRELAND TO IRELAND				
			RATIO	DIFFERENCE
	HMCE	CSO	HMCE/ CSO	HMCE - CSO
QUARTER	M	M		
1999 Q1	342.5	280.3	1.22	62.2
1999 Q2	365.9	314.6	1.16	51.3
1999 Q3	375.1	291.1	1.29	83.9
1999 Q4	386.3	306.7	1.26	79.5
2000 Q1	364.1	297.2	1.23	66.9
2000 Q2	368.2	325.1	1.13	43.1
2000 Q3	367.2	335.2	1.10	32.0
2000 Q4	357.8	339.0	1.06	18.8
2001 Q1	372.6	325.3	1.15	47.4
2001 Q2	413.1	344.8	1.20	68.2
2001 Q3	389.7	328.7	1.19	61.0
2001 Q4	378.9	321.5	1.18	57.4
YEAR				
1999	1469.7	1192.7	1.23	277.0
2000	1457.3	1296.6	1.12	160.7
2001	1554.3	1320.3	1.18	234.0
1999/00	1491.4	1209.7	1.23	281.7
2000/01	1465.9	1324.7	1.11	141.2

TABLE 8
TOTAL MANUFACTURING IMPORTS FROM IRELAND TO NORTHERN IRELAND
 (HMCE & CSO DATA 1999 TO 2001) APPLYING THE COUNTRY OF CONSIGNMENT
 DEFINITION TO THE CSO DATA

IMPORTS FROM IRELAND TO NORTHERN IRELAND				
QUARTER	HMCE	CSO	RATIO	DIFFERENCE
	M	M	HMCE/CSO	HMCE - CSO
1999 Q1	265.8	298.8	0.89	-33.0
1999 Q2	284.7	319.8	0.89	-35.1
1999 Q3	266.5	303.7	0.88	-37.2
1999 Q4	314.1	325.8	0.96	-11.7
2000 Q1	358.2	362.4	0.99	-4.3
2000 Q2	367.5	390.8	0.94	-23.3
2000 Q3	336.6	351.8	0.96	-15.2
2000 Q4	361.2	329.8	1.10	31.4
2001 Q1	401.5	348.4	1.15	53.1
2001 Q2	443.8	414.0	1.07	29.8
2001 Q3	418.9	364.3	1.15	54.5
2001 Q4	405.9	374.7	1.08	31.2
YEAR				
1999	1131.1	1248.1	0.91	-117.1
2000	1423.4	1434.8	0.99	-11.4
2001	1670.1	1501.4	1.11	168.6
1999/00	1223.426	1311.725	0.93	-88.3
2000/01	1466.691	1420.738	1.03	46.0

FIGURE 1
TOTAL MANUFACTURING EXPORTS FROM NORTHERN IRELAND TO IRELAND
 (HMCE & CSO DATA 1999 TO 2001) APPLYING THE COUNTRY OF CONSIGNMENT
 DEFINITION TO THE CSO DATA.

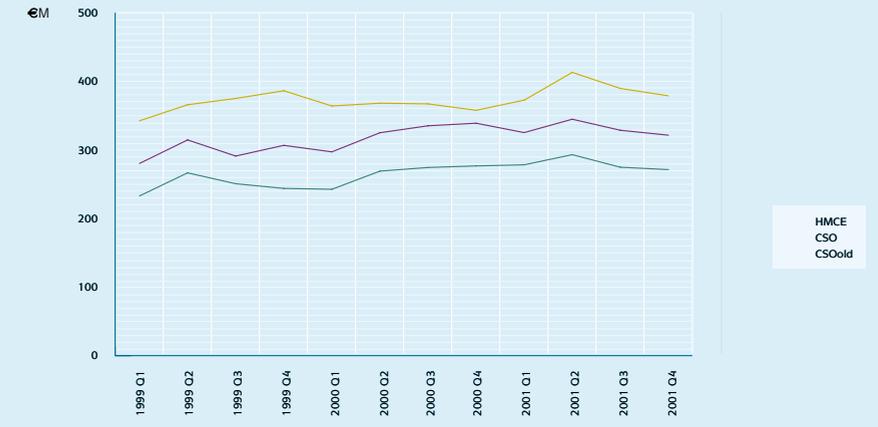


FIGURE 2
TOTAL MANUFACTURING IMPORTS FROM IRELAND TO NORTHERN IRELAND
 (HMCE & CSO DATA 1999 TO 2001) APPLYING THE COUNTRY OF CONSIGNMENT
 DEFINITION TO THE CSO DATA.



Sectoral Breakdown of Manufacturing Trade

Despite the fact that there are still substantial differences between the total manufacturing exports from Northern Ireland to Ireland it is useful to examine the data at a sectorally disaggregated level. This allows us to check whether the two data series despite their differences in the level are at least similarly composed across the sectors.

Table 9 shows the sectoral composition of the annual exports from Northern Ireland to Ireland for the period 1999 to 2001. A striking feature of the table is that there are large differences between the HMCE and CSO figures. Of course individual sectors may well be more important in driving the overall differences that were observed above. This might for example include the Refined Petroleum (23), Transport Equipment (34-35) and Other Manufacturer (36-37) sectors where very substantial differences can be observed. Another notable feature of the table is that the differences are quite stable over time, which suggests that they are not random.

Turning to Table 10 this shows the sector shares in total manufacturing exports from Northern Ireland to Ireland, along with the ranking of each sector. The most striking feature of this table is that the sector shares are quite similar in the two data series. For example Food and Drink (15-16) is the largest sector in both series accounting for close to one third of all exports. Furthermore, Textiles and Mechanical Machinery are also very significant export sectors for exports to Ireland. In more formal terms the correlation coefficients between the two series range between 0.87 and 0.91 which is statistically different from zero⁷. Furthermore, the rank correlation coefficients range from 0.62 to 0.88⁸, which is again statistically different from zero. Thus, despite the fact that there are large absolute differences between the HMCE and CSO data, the sectoral composition is similar. This implies that either series can be used to analyse sectoral changes in the composition of trade without risking significant differences in the results depending on which series is used.

A similar comparison for the opposite flow, that is imports from Ireland to Northern Ireland, is shown in Table 11 and Table 12. Here the differences between the series are not as pronounced and the correlation between the series is very high, ranging from imports 0.93 to 0.96 and the rank correlations range from 0.77 to 0.88⁹. Again Food and Drink is the most important sector but after this, Chemicals and Transport Equipment also account for very large trade shares.

7 The test statistics range from 6.1 to 7.5 with a critical value of 1.782 at 5% level.
 8 The critical value: 0.716 at the 1% level 0.545 at the 5% level.
 9 For the correlation coefficients the test statistics 8.7 to 11.2 with a critical value of 1.782 at 5% level and for the rank correlation the critical value is 0.716 at the 1% level 0.545 at the 5% level.

TABLE 9
 COMPOSITION OF MANUFACTURING EXPORTS FROM NORTHERN IRELAND TO IRELAND (HMCE AND CSO DATA) BY SECTOR (MILLION)

	1999	1999	1999	1999	2000	2000	2000	2000	2000	2001	2001	2001	2001	2001
	HMCE	CSO	RATIO (HMCE/CSO)	DIFFERENCE (HMCE-CSO)	HMCE	CSO	RATIO (HMCE/CSO)	DIFFERENCE (HMCE-CSO)	HMCE	CSO	RATIO (HMCE/CSO)	DIFFERENCE (HMCE-CSO)	HMCE	CSO
Food & drink (15-16)	340.3	357.0	0.95	-16.7	387.4	359.0	1.08	28.4	438.5	393.0	1.12	45.5		
Textiles & textile products (17-18)	122.3	180.5	0.68	-58.2	104.5	204.7	0.51	-100.2	92.6	185.2	0.50	-92.6		
Leather goods (19)	4.3	9.3	0.46	-5.0	3.9	10.6	0.37	-6.7	2.6	9.7	0.27	-7.1		
Wood Products (20)	74.7	39.8	1.88	35.0	91.5	47.9	1.91	43.6	101.9	56.7	1.80	45.2		
Pulp, paper & paper products, publishing & printing (21-22)	93.7	76.6	1.22	17.2	70.0	55.1	1.27	14.9	64.8	53.3	1.22	11.5		
Coal, refined petroleum & nuclear fuel (23)	3.4	37.5	0.09	-34.2	3.8	62.8	0.06	-59.0	5.2	76.2	0.07	-71.0		
Chemicals (24)	76.2	73.8	1.03	2.4	65.3	63.4	1.03	1.9	78.5	78.9	1.00	-0.3		
Rubber & plastics (25)	136.8	80.2	1.71	56.7	99.6	87.5	1.14	12.2	118.3	79.3	1.49	39.0		
Non-metallic minerals (26)	134.9	71.9	1.88	63.0	128.8	73.7	1.75	55.1	128.8	65.9	1.95	62.9		
Basic metals & fabricated metal products (27-28)	98.5	55.1	1.79	43.4	99.1	60.6	1.64	38.5	137.9	61.2	2.26	76.8		
Mech. machinery (29)	138.2	86.4	1.60	51.8	158.6	93.7	1.69	65.0	176.0	90.6	1.94	85.4		
Electrical & optical equipment (30-33)	108.3	74.0	1.46	34.3	118.8	131.0	0.91	-12.2	97.0	121.6	0.80	-24.6		
Transport equipment (34-35)	74.6	26.7	2.79	47.9	85.5	26.8	3.19	58.7	55.7	27.1	2.06	28.6		
Other manufactures (36-37)	63.6	19.8	3.21	43.7	40.4	19.8	2.04	20.6	56.4	21.6	2.61	34.8		
TOTAL	1469.7	1188.4	1.24	281.3	1457.5	1296.6	1.12	160.8	1554.4	1320.3	1.18	234.1		

Note: The HMCE figures are calculated from a file of SIC 92 4-digit data compiled by Customs & Excise for this report. The CSO data are from a file supplied by the CSO for this report. For a description of the data and its compilation see Appendix 1.

TABLE 11
COMPOSITION OF MANUFACTURING IMPORTS INTO NORTHERN IRELAND FROM IRELAND
(HMCE AND CSO DATA), BY SECTOR (MILLION €)

	1999 HMCE	1999 CSO	1999 RATIO (HMCE/CSO)	1999 DIFFERENCE (HMCE-CSO)	2000 HMCE	2000 CSO	2000 RATIO (HMCE/CSO)	2000 DIFFERENCE (HMCE-CSO)	2001 HMCE	2001 CSO	2001 RATIO (HMCE/CSO)	2001 DIFFERENCE (HMCE-CSO)
Food & drink (15-16)	265.1	363.7	0.73	-98.6	337.1	304.0	1.11	33.1	414.2	404.8	1.02	9.4
Textiles & textile products (17-18)	89.5	77.9	1.15	11.6	100.0	74.7	1.34	25.2	106.2	84.5	1.26	21.7
Leather goods (19)	8.0	8.1	0.99	-0.1	9.3	12.7	0.73	-3.4	8.9	22.1	0.40	-13.2
Wood products (20)	26.9	27.6	0.97	-0.7	27.2	33.0	0.82	-5.8	33.4	30.9	1.08	2.5
Pulp, paper & paper products: publishing & printing (21-22)	34.9	63.4	0.55	-28.6	41.9	65.1	0.64	-23.2	41.4	79.8	0.52	-38.4
Coke, refined petroleum & nuclear fuel (23)	1.2	6.3	0.19	-5.1	0.4	39.7	0.01	-39.3	0.3	8.3	0.03	-8.0
Chemicals (24)	249.6	239.6	1.04	10.0	289.2	227.6	1.27	61.7	282.5	198.6	1.42	83.9
Rubber & plastics (25)	53.2	64.1	0.83	-10.8	79.5	71.0	1.12	8.5	67.9	79.3	0.86	-11.5
Non-metallic minerals (26)	49.5	46.8	1.06	2.6	50.5	42.9	1.18	7.6	56.7	65.0	0.87	-8.3
Basic metals & fabricated metal products (27-28)	57.8	62.0	0.93	-4.2	60.1	73.3	0.82	-13.2	73.6	71.7	1.03	1.9
Mech. machinery (29)	87.7	40.7	2.15	47.0	119.8	30.4	3.93	89.3	185.7	53.2	3.49	132.5
Electrical & optical equipment (30-33)	58.8	54.7	1.08	4.2	65.3	131.6	0.50	-66.3	107.4	93.4	1.15	13.9
Transport equipment (34-35)	123.3	176.3	0.70	-52.9	214.0	213.9	1.00	0.2	260.9	290.0	0.90	-29.0
Other manufactures (36-37)	23.9	16.9	1.42	7.0	30.1	14.7	2.05	15.4	35.9	19.7	1.82	16.2
TOTAL	1129.5	1248.1	0.90	-118.6	1424.4	1334.5	1.07	90.0	1675.1	1501.4	1.12	173.6

Note: The HMCE figures are calculated from a file of SIC 92 4-digit data compiled by Customs & Excise for this report. The CSO data are from a file supplied by the CSO for this report. For a description of the data and its compilation see Appendix 1.

TABLE 10
SHARES SECTORS FOR MANUFACTURING EXPORTS FROM NORTHERN IRELAND TO IRELAND
(HMCE AND CSO DATA)

	2000 SHARE % HMCE	2000 SHARE % CSO	2000 RANK HMCE	2000 RANK CSO	1999 SHARE % HMCE	1999 SHARE % CSO	1999 RANK HMCE	1999 RANK CSO	2001 SHARE % HMCE	2001 SHARE % CSO	2001 RANK HMCE	2001 RANK CSO
Food & drink (15-16)	28.2	29.8	1	1	27.7	26.6	1	1	0.00	23.2	(8)	(9)
Textiles & textile products (17-18)	6.0	4.0	2	2	15.8	7.2	5	2	15.2	8.3	(16)	(17)
Leather goods (19)	0.2	0.2	41	41	0.8	0.3	31	31	0.8	0.3	(40)	(41)
Wood products (20)	6.6	4.3	6	8	3.7	6.3	8	01	3.3	5.1	(7)	(8)
Pulp, paper & paper products: publishing & printing (21-22)	4.2	4.0	10	01	4.3	4.8	01	8	6.4	6.4	(9)	(10)
Coke, refined petroleum & nuclear fuel (23)	0.3	5.8	13	8	4.8	0.3	11	41	3.2	0.2	(12)	(13)
Chemicals (24)	5.1	6.0	9	7	6.9	4.5	6	6	2.9	5.2	(10)	(11)
Rubber & plastics (25)	8.3	8.3	4	9	7.9	8.8	3	4	7.9	8.6	(5)	(6)
Non-metallic minerals (26)	0.5	0.9	5	5	5.7	8.8	4	4	0.9	2.2	(13)	(14)
Basic metals & fabricated metal products (27-28)	9.4	6.8	3	6	7.4	8.9	7	7	9.4	7.9	(2)	(3)
Mech. machinery (29)	6.9	1.1	2	4	2.2	6.0	3	2	7.3	4.6	(4)	(5)
Electrical & optical equipment (30-33)	2.2	6.2	7	3	1.2	2.8	11	11	2.2	1.5	(15)	(16)
Transport equipment (34-35)	3.6	2.2	3	3	1.0	2.8	9	9	2.9	4.7	(6)	(7)
Other manufactures (36-37)	9.1	3.6	11	21	5.1	2.8	21	21	1.7	4.3	(14)	(15)
TOTAL	3.6	9.1	31	31	2.8	2.8	31	31	1.7	4.3	(15)	(16)

TABLE 12
SHARES SECTORS FOR MANUFACTURING IMPORTS INTO NORTHERN IRELAND FROM IRELAND
(HMCE AND CSO DATA)

	1999		2000		2001		1999		2000		2001	
	SHARE % HMCE	RANK CSO										
Food & drink (15-16)	23.5	29.1	23.7	22.8	24.7	27.0	23.7	22.8	24.7	27.0	24.7	27.0
Textiles & textile products (17-18)	7.9	6.2	7.0	5.6	6.3	5.6	7.0	5.6	6.3	5.6	6.3	5.6
Leather goods (19)	0.7	0.6	0.7	1.0	0.5	1.5	0.7	1.0	0.5	1.5	0.5	1.5
Wood products (20)	2.4	2.2	1.9	2.5	2.0	2.1	1.9	2.5	2.0	2.1	2.0	2.1
Pulp, paper & paper products; publishing & printing (21-22)	3.1	5.1	2.9	4.9	2.5	5.3	2.9	4.9	2.5	5.3	2.5	5.3
Coke, refined petroleum & nuclear fuel (23)	0.1	0.5	0.0	3.0	0.0	0.6	0.0	3.0	0.0	0.6	0.0	0.6
Chemicals (24)	22.1	19.2	20.3	17.1	16.9	13.2	20.3	17.1	16.9	13.2	16.9	13.2
Rubber & plastics (25)	4.7	5.1	5.6	5.3	4.1	5.3	5.6	5.3	4.1	5.3	4.1	5.3
Non-metallic minerals (26)	4.4	3.8	3.5	3.2	3.4	4.3	3.5	3.2	3.4	4.3	3.4	4.3
Basic metals & fabricated metal products (27-28)	5.1	5.0	4.2	5.5	4.4	4.8	4.2	5.5	4.4	4.8	4.4	4.8
Mech. machinery (29)	7.8	3.3	8.4	2.3	11.1	3.5	8.4	2.3	11.1	3.5	11.1	3.5
Electrical & optical equipment (30-33)	5.2	4.4	4.6	9.9	6.4	6.2	4.6	9.9	6.4	6.2	6.4	6.2
Transport equipment (34-35)	10.9	14.1	15.0	16.0	15.6	19.3	15.0	16.0	15.6	19.3	15.6	19.3
Other manufactures (36-37)	2.1	1.4	2.1	1.1	2.1	1.3	2.1	1.1	2.1	1.3	2.1	1.3

5. TRENDS IN NORTH/SOUTH TRADE

The differences between the CSO and HMCE series for imports to Northern Ireland from Ireland are quite similar, with minimal variations recorded. Furthermore, while the differences between the series for the exports from Northern Ireland to Ireland remain large, these may well be accounted for by the nature of allocating trade by the HMCE in order to overcome the headquarter problem.

Given the assumption that the definitional issues account for the differences between the series it is possible to carry out some trend analysis focusing both on the overall level of trade and the sectoral or commodity composition. To start with it is useful to identify the overall trends with regard to the aggregate flows. As the HMCE series is limited to three years while the CSO series covers a long time period, it is more useful to use the CSO series.

Figure 3 shows the trends of the flows for trade from Ireland to Northern Ireland (exports) and vice versa (imports) in Euro and in constant 1995 prices. The figure clearly shows that trade is growing strongly, with a pronounced 'dip' around 1994. This figure also indicates a trade surplus for Ireland. Figure 4 shows the corresponding trade flows between Ireland and Great Britain (excluding Northern Ireland). Again the trade flows are strongly increasing, particularly over the latter part of the 1990's, although in this case the trade is almost balanced.

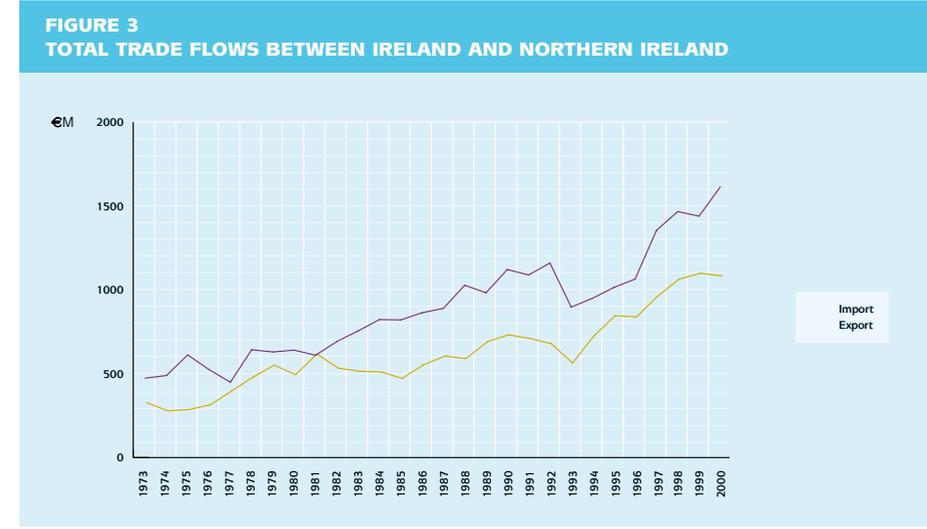
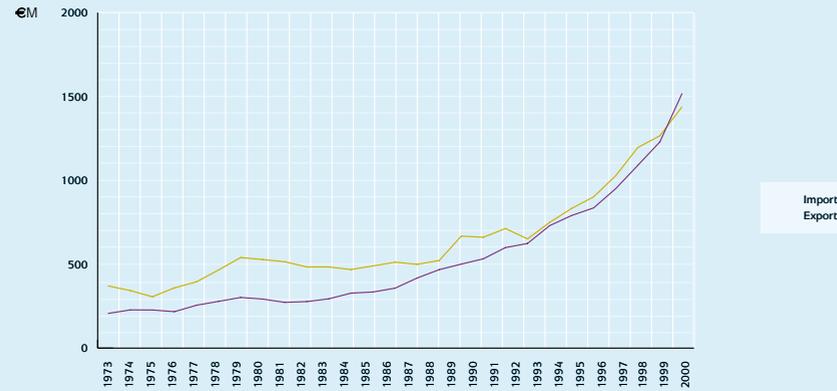
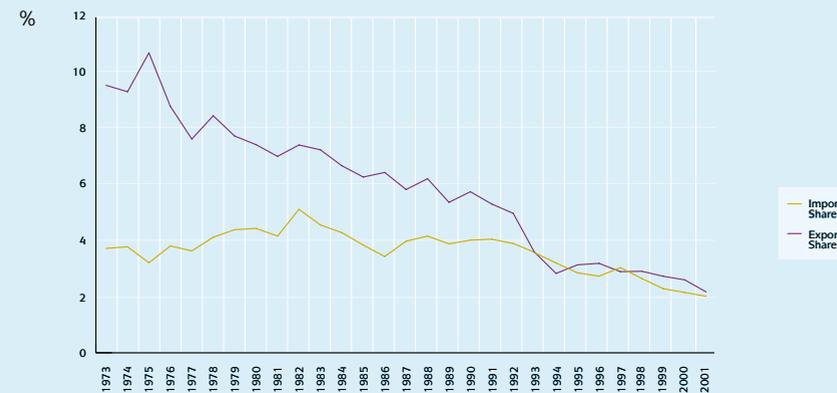


FIGURE 4
TOTAL TRADE FLOWS BETWEEN IRELAND AND GREAT BRITAIN



Nevertheless, because trade with respect to all countries has grown substantially, a more meaningful analysis focuses on trade shares. Both the share of exports to Northern Ireland from Ireland in total exports and the imports share are shown in Figure 5. This shows a particularly dramatic decline of the exports share and a smaller but nevertheless significant decline in the import share. Thus, exporters in Ireland are sending a smaller proportion of their goods to Northern Ireland.

FIGURE 5
NORTHERN IRELAND SHARE IRELAND TRADE



We have seen how trends in North/South trade looks from the perspective of Ireland, so the final part of the picture is the view from Northern Ireland. Although the HMCE data can shed little light on this question (since there are as yet only a couple of years' figures available) the NIERC export data can help here by providing some insight into Ireland as a destination for Northern Ireland's manufactures. Over the decade 1991/1992 to 2000/01 the value of Northern Ireland's exports of manufactured goods to Ireland more than doubled. But of course, over the same period, overall sales to markets outside Northern Ireland (that is including Great Britain as well as other destinations) grew substantially too. Overall, whilst there is some year-to-year variation in the figures, it appears that sales to Ireland were generally between 12% to 13% of total external sales. If we compare across a narrower range of destinations, Ireland accounted for around a quarter of sales of Northern Ireland's manufactures to markets outside the United Kingdom, a proportion which seems to have changed very little over the last decade. Of course, there being no comparable data on imports into Northern Ireland (other than from Ireland), it is not possible to determine whether there has been any change in the relative importance of Ireland's role as a supplier.

It is also interesting to look at the composition of trade over time (see Table 13). Here the trade could either be classified by sector, as is the case with the HMCE trade statistics, or classified by commodity which is convention used by the CSO. Here the latter is followed for simplicity. The most notable feature is the decline of Food and Live Animals with regard to both imports and exports from Ireland. Secondly the share of total trade accounted for by Machinery and Miscellaneous Manufactured Articles which includes some of the computer related products as well as Chemicals and related products has increased. This is not surprising as the economies concerned have been moving towards more high tech activities.

**TABLE 13
COMPARISON OF COMMODITY COMPOSITION OF TRADE BETWEEN IRELAND AND NORTHERN IRELAND AND GREAT BRITAIN**

	NORTHERN IRELAND		GREAT BRITAIN	
	IMPORTS 1991	EXPORTS 1991	IMPORTS 2001	EXPORTS 2001
Food and live animals	33.35	39.38	20.67	19.95
Beverages and tobacco	8.50	5.17	9.99	5.07
Crude materials, inedible except fuels	3.07	3.46	3.10	2.77
Mineral fuels, lubricants & related materials	0.86	0.96	6.91	0.67
Animal & vegetable oils, fats & waxes	0.47	0.24	0.00	0.00
Chemicals and related products	9.62	5.27	6.99	12.03
Manufactured goods	18.98	15.02	18.25	11.48
Machinery & transport equipment	10.25	14.17	16.96	23.48
Miscellaneous manufactured articles	12.83	15.28	9.68	11.25
Commodities & transactions nec	2.06	1.02	0.48	0.98
Other & estimates	0.01	0.03	6.98	12.31
			IMPORTS 1991	EXPORTS 1991
			10.58	23.26
			0.86	1.80
			1.19	3.58
			8.05	0.97
			0.48	0.17
			13.73	12.69
			18.53	10.24
			24.41	27.14
			18.24	17.91
			3.94	2.26
			0.00	0.00
			0.00	1.72

6. SUMMARY

This report has accomplished a number of tasks. It has provided a comparison between different sources of data on the same series. This comparison has shown that the HMCE and NIERC data on exports from Northern Ireland to Ireland, which are compiled using an entirely different methodology, match reasonably closely. While a similar comparison between production and trade flow based data sources was not possible for North/South trade using data from the CSO, it was nevertheless possible to compare such data for exports from Ireland to the UK as a whole which also showed a reasonable match. However, for trade between Ireland and Northern Ireland large differences in the data published by the CSO of Ireland and by the HMCE emerge. Specifically the data series for exports from Northern Ireland to Ireland differ substantially.

There are a number of possible reasons for the poor match between the CSO and HMCE data. The nature of the data collection process may contribute to the observed differences. Due to the introduction of the Single European Market, customs controls for trade within the EU were removed. This means that trade data is no longer collected by the respective Customs authorities at the borders. Instead trade data is collected by means of a survey of traders whose trade is above a certain threshold figure. The removal of customs barriers also implies that it is now less important for the Customs authorities to ensure that the survey forms are completed accurately. Similarly, traders are likely to be less diligent when filling in the forms. A related issue is that the Customs authorities in Ireland and the UK apply differing thresholds above which traders must complete the trade survey. For consignments below the thresholds both the CSO and the HMCE apply a method of estimation.

Further reasons for the large differences between the CSO and HMCE series may be the definitions applied. Trade can be classified on the basis of country of origin or country of despatch. These need not be the same if a consignment of goods is shipped via a third country. The data collected by the HMCE is classified by country of despatch while that for the CSO is classified by the more common country of origin definition. Furthermore, in order to make the series comparable with the data series that is published by NIERC it was necessary to re-classify the trade data from a product classification to a sector classification. This operation could introduce further discrepancies.

While it is difficult to assess how well the survey forms are completed it is more straightforward to investigate the importance of definitional differences in explaining the gap between the HMCE and CSO data. In general the below threshold trade does not make up a large fraction of total trade so this is unlikely to explain the large differences. However, when a common definition is applied, namely that the data is classified by country of despatch, the gap is substantially reduced. This is explained by the fact that, using the HMCE definition, exports from Northern Ireland include goods made in the rest of the UK that are shipped from Northern Ireland to Ireland. Indeed this makes up a significant proportion of the total exports from Northern Ireland to Ireland. Thus, while not accounting for the entire gap between the two series, differences in definitions account for a substantial proportion of the gap between the HMCE and CSO data.

A comparison of trade composition for manufacturing sectors shows that the sectoral shares are similar for both data sources. This implies that an analysis of changes in trade shares can be carried out with both the HMCE and CSO data without seriously biasing the results. However, if long run trends are to be analysed, the CSO data is preferable as this is available over a long time period. In general, if one accepts that the bulk of the differences between the HME and CSO trade series are due to definitions and methodology, then both are capturing the same flows.

An analysis of trends is valid based on the fact that definitional issues are the main cause of differences between the data series. This trend analysis shows that trade volumes are steadily increasing and that the composition of these volumes is changing away from more traditional towards more high-tech commodities. However, the trade shares are declining over time. In particular, the proportion of exports from Ireland to Northern Ireland has fallen dramatically. Of course, this is hardly surprising given the recent pattern of industrial development in Ireland and its growing importance as a platform for exports into the EU by non-EU (especially US) multinationals.

APPENDIX 1

TRADE DATA DESCRIPTION

NORTHERN IRELAND

HM Customs & Excise Trade Statistics

1 DATA SOURCE NAME

HM Customs & Excise Regional Trade Statistics

2 AGENCY OR DEPARTMENT RESPONSIBLE FOR COLLECTION

Information Management Division (IMD) of HM Customs & Excise

3 DESCRIPTIVE OVERVIEW OF DATA

UK data: Since 1993 the data has encompassed statistics of UK imports and exports to countries outside the EU, compiled from customs declarations, and statistics of UK arrivals and dispatches to other Member States of the EU, compiled from Intrastat returns. Prior to 1993 all export and import data was compiled from declarations.

The data is classified according to the Harmonised System (HS) which enables National Customs authorities to compile their tariffs. For publication purposes the trade statistics are re-grouped under the headings of SITC (Rev.3).

Regional data: Regional data is available quarterly from 1 January 1999. It is available for the English Government Office Regions, Scotland, Wales and Northern Ireland. Detailed data expressing regional imports and exports, by significant markets, in 20 industry groups (SIC 92) is available to purchase.

4 LEGISLATIVE AND REGULATORY FRAMEWORK

The trade statistics are compiled in accordance with the 'general trade' system of recording from 'International Trade Statistics Concepts and Definitions' published by the UN.

Trade within the EU: The Intrastat system is linked to VAT.¹⁰ In the UK all VAT registered business must complete two additional boxes on their VAT returns showing the total value of exports (dispatches) and imports (arrivals) to other Member States, these are submitted quarterly. Traders whose annual value of arrivals / dispatches exceed thresholds (£233,000) must provide supplementary information on a monthly basis. Traders have a legal responsibility to provide Intrastat declarations and must do so within 10 working days of the end of the calendar month.

Trade with non-EU countries: Importers and Exporters must present a customs declaration before obtaining clearance.

4.1 Legal basis of survey

Statutory - EU regulations on Intrastat declarations.

¹⁰ The current VAT threshold is £54,000.

5 DATA DEFINITIONS/SURVEY INSTRUMENT

Trade within EU: Survey Instrument is VAT return.

Trade outside EU: Survey Instrument is Customs declaration form.

Refer to Customs & Excise forms for data items.

5.1 Questionnaire overview

No questionnaires as such but forms can be found in the Customs & Excise Training Manual.

5.2 Listing of main data items

Refer to Customs & Excise forms for data items.

6 DATA COVERAGE

Intrastat covers all UK VAT registered businesses. Traders not registered for VAT are not included in the trade statistics.

Trade with non-EU countries is recorded as that declared by importers and exporters for which documentation has been received and processed during the month.

The regional trade data refers to goods that have crossed the UK frontier. Customs & Excise do not have any information on goods that have moved between regions of the UK.

6.1 Industrial coverage (basis e.g. SIC, SITC etc)

The Harmonised System (HS) is used to classify commodities, in its expanded form it is also known as the Combined Nomenclature (CN) within the EU.

The 'Tariff', which is also used, is an integrated classification for both duty and statistical purposes and is based on the HS.

The overseas trade statistics are based on the HS but are re-grouped under the headings of SITC (REV. 3) for publication purposes.

The monthly trade data published by the ONS is at a broader SITC section, i.e. some of the sections are combined.

The regional data, which can be purchased, is available for 20 industry groups, based on the SIC 92 classification.

6.2 Time period of availability

Customs & Excise have collected statistics for over 300 years. Since 1993 trade within the EU has been collected through the Intrastat system. Prior to this it was all through Customs declarations. This has resulted in some discontinuities in the geographical allocation of goods between 1992-1993. There were also some recording problems for December 1992 and January 1993 due to the switchover.

The Regional data is available quarterly from 1 January 1999. Data is available online and through ad-hoc enquiries.

Trade data is available monthly, quarterly and annually through the various publications which also have differing levels of detail regarding country / commodity breakdown.

6.3 Frequency of data collection, etc.

EU trade: VAT returns are submitted quarterly. Traders whose annual export/import values exceed the threshold must provide a supplementary declaration on a monthly basis. This is required within 10 working days of the end of the calendar month.

Non-EU trade: Importers and exporters must present a Customs declaration before they can obtain Customs clearance and remove the goods. The majority of imports are cleared immediately through computer. The import figures thus tend to correspond closely to goods actually imported during the calendar month (75% by value, 85% by number). The export statistics do not correspond as closely with goods shipped in the calendar month (65% by value and number) as traders can submit a simplified declaration to export the goods, followed by complete declaration within 14 days of shipment. The processing of these documents only begins 3 days before the end of the calendar month.

7 DATA COLLECTION METHODOLOGY

Since 1993 data has been collected through Intrastat returns (EU trade) and declarations made to Customs & Excise (non-EU trade). Prior to this all trade data was collected only through declarations.

7.1 Sampling frame (including thresholds, etc.)

All UK VAT-registered businesses must complete additional boxes on their VAT returns regarding value of arrivals and dispatches to EU Member States. Traders not registered for VAT and private individuals who trade are excluded from the trade statistics.

Those traders whose annual value of arrivals or dispatches exceeds £233,000 must complete a supplementary declaration showing full details. Thresholds are reviewed annually.

All those trading with non-EU countries must submit declarations to Customs to receive clearance.

7.2 Response rates

It is statutory to complete Intrastat returns and Customs declarations so response rates are high.

The detailed Intrastat returns (those over the threshold) cover approx. 97.5% of the value of UK trade within the EU.

The non-response rate across the EU has been accepted as a weakness of the Intrastat system. For the whole community non-response exceeds 10% of the enterprises that are supposed to provide info (3-4% in value terms). Four member states (France, Greece, Italy & Spain) do not adjust their data to compensate for non-response and/or exclusion of SMEs.

7.3 Non-response methodology/checking/residuals

When traders fail to provide their Intrastat returns by the deadline, estimates are made by the IMD. These are based on the trade reported by these traders in a previous period and the growth rate, since that period, experienced by traders who have provided returns. Late declarations are subsequently incorporated into the month's figures to which they relate, alongside a re-assessment of initial estimates for non-response.

Detailed information on trade below the threshold value is not available but it has been established that the pattern of trade before Intrastat was introduced was similar to that of traders just above the thresholds so IMD make estimates of below threshold trade on this basis.

IMD carries out validation procedures which include auto-corrections, credibility checking and error analysis exercise.

8 DATA PROCESSING

The Operations branch of the Trade Statistics Unit is involved in the sorting, processing, production, verification and validation of the trade statistics. The Statistical Analysis Branch is responsible for the production of trade statistics for the ONS for Balance of Payment purposes.

9 REPORTING/PUBLICATIONS

Data is provided on the HM Customs & Excise website and ad-hoc enquiries are also carried out. The regional data is available at an aggregated level on the website with the more detailed data available through purchase.

Data is available through the following ONS publications on a Balance of Payments basis:

Trade First Release - monthly
Business Monitor MM24 - monthly, includes time-series
Balance of Payments - quarterly
National Accounts - quarterly
UK Economic Accounts - quarterly
Pink Book - annual
Blue Book - annual
Monthly Digest of Statistics - monthly
Economic Trends - monthly
Annual Abstract of Statistics - annual

Overseas trade statistics providing commodity level data and breakdowns by country and area are available through the following Stationary Office publications:

Overseas Trade Statistics of the UK with countries outside the EC - monthly
Overseas Trade Statistics of the UK with the World - monthly & annually
Overseas Trade Statistics of the UK with countries within the EC - quarterly

Trade in goods analysed by industry (SIC 92 basis) are available in:

Business Monitor MQ10 - quarterly
Sector Reviews - published by ONS
Product Sales and Trade - published by ONS

9.1 Current publication structure (timeliness, sectoral breakdowns, etc.)

Quarterly press release on most recent data along with ability to download actual data on excel spreadsheet

9.2 Most recently published data

For regional trade data - quarter 3 2001
(Quarter 4 available in next 2 weeks)

10 EXTERNAL LINKS

10.1 Possible matching with other data sources

The Intrastat system should have made it easier to link the data across the EU (i.e. mirror imports and exports from one country to another) however various discrepancies were recorded in an evaluation of the Intrastat system:

- valuation differences: exports free on board (fob), imports cost, insurance freight to the point of entry (cif)
- differing exchange rates used
- timing differences in the reporting of goods
- different commodity classification by importer / exporter
- reporting concessions
- methodological differences
- reclassification of goods for confidentiality
- fraudulent declarations
- errors in data processing
- lack of consistency in implementing Intrastat systems across EU, e.g. no common approach to adjustments for non-response.

In addition, the UK uses the 'general trade' definition to produce trade statistics whereas Eurostat use the 'special trade' system to compile statistics of Community trade. These two systems have different approaches to the treatment of goods which enter freezones or Customs' warehouses.

Not able to link directly with IDBR / NIERC in terms of a common identifying number.

10.2 External benchmarks

Commodity classification system is harmonised.

11 BIBLIOGRAPHY

HM Customs & Excise (2001) 'SATU Training Manual - UK Statistics and Analysis of Trade Unit'

Website: www.hmce.gov.uk

IRELAND

CSO Trade Statistics

1 DATA SOURCE NAME

Trade Statistics

2 AGENCY OR DEPARTMENT RESPONSIBLE FOR COLLECTION

The primary collection of the data is the responsibility of the Revenue Commissioners. However, the consistency of the data is checked by the Central Statistics Office, which also estimates values for those traders for which a trade value is unknown.

3 DESCRIPTIVE OVERVIEW OF DATA

The trade statistics are the principal source of trade data for Ireland. Trade data of some sort has been collected since the foundation of the State. However, the current series starts in 1993 since significant changes were necessary due to the introduction of the Single European Market at the start of that year. The data is currently published monthly, although for 1994 this was quarterly and for 1993, only limited detailed data is available from the publications. However, the detailed data is available from the CSO directly.

The data comes from three sources. Intra-EU trade data is collected through the Intrastat survey and VAT returns, while extra EU-trade data is collected from customs records. These are described in more detail below.

The current publication comprises 15 tables, which contain data as follows. Table 1 gives a summary of the trade data including total value of imports, exports, the trade surplus, as well as volume and price indices. These data are provided on an annual basis for years from 1971 and on a monthly basis for recent years (2000 and 2001). Table 2 provides seasonally adjusted monthly data on the value of imports, exports, the trade surplus and the volume indices. Table 3 give details of imports by use which are broken down into three main groups namely, capital goods, consumption goods and materials for further productions. Tables 1, 2 and 3 do not distinguish trade by trade partner.

Table 4 gives imports classified by main use and area of origin. For area of origin, this table combines Great Britain and Northern Ireland into one area. Table 5 gives details of exports by broad industrial origin, which is not disaggregated by area of destination. Table 6 gives details of exports by industrial origin and area of destination, where Great Britain and Northern Ireland are again combined. Tables 7 and 8 break down imports and exports by origin and destination, with Table 8 containing details of the percentage shares accounted for by each trading partner. These tables do distinguish Northern Ireland. Table 9 contains details of total imports and exports by trading partner, on a monthly basis as well as a running total for the year. This table contains details for all trading partners and separate entries are available for Northern Ireland and Great Britain. Table 10 distinguishes trade by SITC section and division but not by country. Again the periodicity is monthly but a running total for the year is also included. Table 11 summarises trade for recent years and months.

More detailed data is available in tables 12 to 15. Table 12 gives details of exports by SITC division (2 digit) and country. However, country details are only provided for those countries for

which exports exceed 1,142,764 for a given month or averages 761,843 per month for the year up to that month. The table also includes details for the Shannon Free Zone, Parcel Post and Statistical Threshold Trade which is, however, not distinguished by SITC code. Table 13 covers the same detail for imports, using the same thresholds. Tables 14 and 15 cover the corresponding data at the SITC heading level (5 digit), again using the same thresholds.

4 LEGISLATIVE AND REGULATORY FRAMEWORK

4.1 Legal basis of survey

The Intrastat survey is governed by the EU Council Regulation 3330/91. VAT returns are required through the regulation governing VAT returns. Under Council Regulations 3330/91 and 1172/95, Ireland also has to make returns of trade statistics to Eurostat. However, for these purposes non-EU trade is compiled according to the special trade system, rather than the general trade system, which is applied to the CSO series. With regard to VAT, the EU Council established a new system of administrative co-operation with the passing of Council Regulation No. 218/92 in 1992. This system is known as the VAT Information Exchange System (VIES).

4.2 Disclosure and confidentiality restrictions

The usual confidentiality rules of the CSO apply which means that data on individual firms is not available freely. However, it may be possible to access such data with the agreement of the CSO in order to do analysis or generate more aggregate data.

5 DATA DEFINITIONS/SURVEY INSTRUMENT

Listing of main data items

Imports - value
 Exports - value
 Trade Surplus
 Volume Index Imports
 Volume Index Exports
 Price Index Imports
 Price Index Exports
 Terms of Trade
 The above series seasonally adjusted
 Imports by main use
 Imports by main use and origin
 Exports by industrial origin
 Exports by industrial origin and destination
 Imports by area/country
 Exports by area/country
 Imports by SITC Section and Division
 Exports by SITC Section and Division
 Imports by SITC Heading and Country
 Exports by SITC Heading and Country

6 DATA COVERAGE

6.1 Industrial coverage (basis e.g. SIC, SITC, etc.)

The basic recording system used is that of 'general trade' which records trade at the time commodities cross borders. This implies that as soon as goods are brought to a Custom bonded warehouse they are considered trade, rather than when they leave which is the case for the 'special trade' system.

The statistics are collected using the 8-digit Combined Nomenclature (CN), however, the published data is recorded using the UN Standard Trade Classification system, SITC (Rev. 3). The latter contains 3,100 basic headings at the 5-digit level which are organised in 261 Groups at the 3-digit level, which in turn make up 67 Divisions (2-digit) and 10 sections (1-digit). SITC (Rev. 3) follows the same structure as the Harmonised Commodity Description and Coding System (HS) which is the nomenclature of the Customs Co-operation Council in that each category has direct match in a HS heading which also matches with a combination of CN headings.

Imports are valued on the cif basis which is typically the transaction value, while exports are valued on the fob basis.

A certain set of goods is excluded from the statistics. These include currency, monetary gold, emergency aid, diplomatic goods, items of temporary trade, and items which are not subject to a commercial transaction.

6.2 Time period of availability

Trade statistics are available in some form or another from the foundation of the State. However, the current series starts in 1993 with a methodology that was revised following the introduction of the Single European Market, which removed customs controls for trade within the EU and therefore removed customs records as a source of data for intra-EU trade. These changes also altered the classification of transactions. Detailed quarterly data is available from January 1994 and monthly data is available from March 1995. Total trade by country is available from the foundation of the State.

6.3 Frequency of data collection, etc.

Monthly

7 DATA COLLECTION METHODOLOGY

The data is collected through the Intrastat survey, VAT returns and Customs records.

7.1 Sampling frame (including thresholds, etc).

A threshold applies to the requirement to complete the Intrastat survey both for import and export reporting. Traders whose imports from EU countries amount to more than 190,461 in the previous year are required to make monthly returns of imports, and exporters whose exports exceeded 634,869 in the previous year have to make monthly export returns. The companies which are required to make returns are selected based on VAT returns and a list of these is maintained by the Revenue Commissioners (VIMA Office). VAT returns are also used to determine trade within the EU by companies that fall below the thresholds. However, this only covers consignment to and from companies that are registered for VAT.

7.2 Sampling structure

The survey is mandatory for firms with trade in excess of the thresholds. This means that in theory the full population of firms above the thresholds is covered which removes the need for (random) sampling. For the remainder of traders information from the VAT register is used, but this does not allow for a commodity split and the country is allocated according to firms that are just above the threshold.

7.3 Response rates

The response rate to the Intrastat survey is 80% of those traders required to make returns, which covers about 92% of intra-EU trade (after revision 95% of traders and 95% of trade). Revisions are applied as they arise but these are only carried out within one year of the month to which the data refers.

7.4 Non-response methodology/checking/residuals

The data from the Intrastat survey is adjusted upwards by approximately 1.75% in order to take account of intra-EU trade that is difficult to capture with this survey. This adjustment appears in the 'Unclassified Estimates' category, which also includes miscellaneous adjustments.

Traders below the thresholds are assigned a partner country according to the country profile established for traders who are just above the Intrastat threshold, but commodities are not assigned.

For those traders who did not make an Intrastat return, but which are above the threshold, trade values are assigned to a partner country and commodity according to any previous returns that are available for the preceding 12-month period. The trade of traders below the threshold appears in the 'Unclassified Estimates' Division.

8 DATA PROCESSING

Initial data processing is carried out by the VIMA Office of the Revenue Commissioners, but final processing of the data is carried out by the CSO.

9 REPORTING/PUBLICATIONS

Monthly publication.

9.1 Current publication structure (timeliness, sectoral breakdowns, etc).

The data appears with a lag of about 4-month lag. This includes the sectoral breakdown and detailed country data for countries with which trade is significant (countries for which a trade flow is at least 1,142,764 for the month in question or above 761,843 on average per month for the year in question).

9.2 Most recently published data

The latest published data used refers to October 2001.

10 EXTERNAL LINKS

10.1 Possible matching with other data sources

In theory, it should be possible to link the trade data to the Census of Industrial Production (CIP). However, this requires additional work and may not provide full coverage, since distributors may be responsible for a substantial proportion of trade which would not be accounted for by firms in the CIP (since these are services firms). This may be particularly serious with regard to smaller indigenous firms, which may trade substantially across the border and indeed many of which may be located in the border region.

On a more aggregate level (not firm level) it may be possible to link the trade and production data. As the trade data is classified according to the SITC classification, concordances need to be used to make it comparable with NACE (which is used for the Census of Industrial Production). Concordances are available to map from SITC to ISIC and from ISIC to NACE.

10.2 External benchmarks

A number of external sources of trade statistics exist, which of course, are derived from the same source (Revenue Commissioners, CSO), namely Eurostat, IMF Direction of Trade Statistics (DOTS), World Trade Yearbooks (UN), Statistics Canada, and NBER (see Feenstra, Lipsey and Bowen, 1997). These data differ in terms of the definitions used, i.e. Eurostat uses the special trade definition while the national statistics refer to general trade. Another way to benchmark the data is to match exports (imports) from Ireland to imports (exports) of the trading partner. Provided the valuation is the same, e.g. cif, these series should be identical. In practice, this is seldom the case.

APPENDIX 2

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