ESRI

Working Paper No. 451

March 2013

Globalisation and Ireland's Export Performance

Frances Ruane[a,b,c] Iulia Siedschlag[a,b,c] and Gavin Murphy[a,b]

Subsequently published in "Globalization and Ireland's Export Performance", Louis Brennan (ed.), Enacting Globalization: Multidisciplinary Perspectives on International Integration, Chapter 19, pp.205-218

Abstract: This paper provides empirical evidence on Ireland's export performance in the context of increased globalisation over the past ten years. Using insights from recent contributions to international trade and economic growth theories, we first examine patterns and changes of revealed comparative advantages for Ireland's exports of goods and services. We then investigate whether Irish exports have specialised in fast growing industries and markets in world exports over the period. Third, we analyse determinants of export performance dynamics focusing on product and market structures and competitiveness effects. Finally, to put Ireland's export performance into perspective, we compare this evidence with recent developments in other selected European small open economies.

Keywords: Globalisation, Competitiveness, Export Performance Dynamics
JEL Classification: F14, F15, F43
Corresponding Author: Frances.Ruane@esri.ie

[a] Economic and Social Research Institute
[b] Department of Economics, Trinity College Dublin
[c] Institute for International Integration Studies, Trinity College Dublin

Globalisation and Ireland's Export Performance

1. Introduction

The growing integration into the world economy of emerging economies, such as China, India, as well as Central and Eastern European countries, has led to changes in global patterns of production and trade. In addition, falling transportation and communication costs have enabled an increasing internationalisation of production and a surge in the trade of services.[1]

Ireland is one of the most globalised economies in the world. The most recent KOF Index of Globalization[2] that measures economic, social and political globalisation ranks Ireland second after Belgium. With respect to the economic dimension of globalisation, Ireland ranks third after Singapore and Luxembourg. The most recent available data[3] indicate that, in 2011, exports of goods and services accounted for 104.6 per cent of Ireland's nominal GDP.

Against this background, we assess Ireland's export performance and some of its underlying factors over the past decade. Have Ireland's export specialisation patterns changed since 2000? How does Ireland's export performance compare in an European context? What factors have underpinned Ireland's export dynamics over the past decade? What, if any, are the implications for policy?

We begin by looking at the patterns of export growth by product and by country destination to identify product groups and regions where growth is dynamic (higher than the world average) and sluggish (lower than the world average). We then examine patterns and changes in Ireland's export specialisation over the past decade, noting whether export specialisation has been in fast growing products and to fast-growing destination markets over the period. Third, we analyse determinants of export dynamics focusing on product and market structures and competitiveness effects. To put Ireland's export performance into perspective, we compare this evidence with recent developments in other selected European small open economies: Denmark and Finland (Nordic countries), Portugal and Greece (peripheral countries), Hungary and Slovakia (emerging Central European countries), and Austria (advanced Central European country).

---

1 A recent discussion of these trade developments is given by European Commission (2012). See also Bourguinon et al. (2002).

2 KOF Index of Globalization 2013, Press Release, Zürich 1 March 2013. The index is based on data for 2010.

3 Data available from the Central Statistics Office (CSO) Ireland.

While our analysis is underpinned by existing theoretical trade models, the focus here is empirical. Given the complexity of trade relationships in the context of increased internationalisation of production, no single theoretical framework is sufficient to fully explain recent developments in production and trade patterns linked to globalisation.

The rest of this paper is organised as follows. Section 2 describes the data and empirical methodology that we use. Section 3 discusses the empirical evidence for Ireland and the selected European small open economies mentioned above. Section 4 summarizes the main findings and policy implications.

2. Data and Empirical Methodology

We examine patterns and changes in export specialisation, as well as factors underlying export dynamics for Ireland and seven selected European small open economies over the period 2000-2011. To this purpose, we use data on exports of goods and services by product and market destination available from international trade statistics.[4] We describe below the indicators and the empirical methodology that we use.

Export Specialisation by Product and Market

We analyse patterns and changes in *product specialisation* by using the Revealed Comparative Advantage index (RCA) proposed by Balassa (1965). The RCA index for the exporting country *c* and the product *i* ($RCA_{c,i}$) is defined as follows:

$$RCA_{c,i} = \frac{X_{c,i} \Big/ \sum_i X_{c,i}}{X_{w,i} \Big/ \sum_i X_{w,i}} \qquad (1)$$

$X_{c,i}$ denotes exports of product *i* by country c, and $X_{w,i}$ represents world exports of product *i.*[5] We use a transformed version of the RCA index, *RCA**, which ranges between -1 and 1:

$$RCA^*_{c,i} = \frac{RCA_{c,i} - 1}{RCA_{c,i} + 1} \qquad (2)$$

$RCA^*_{c,i} > 0$ indicates that country c is specialised (has a comparative advantage) in product *i*

[4] Available from UNCTAD (http://unctadstat.unctad.org/). Data on exports of goods and services are in US dollars. We exclude from this analysis exports of oil and other energy related goods as oil and energy prices are highly volatile.

[5] World exports without exports by country c.

relative to the world. $RCA^{*}_{c,i} < 0$ indicates that country c is under-specialised (has a comparative disadvantage) in product *i* relative to the world.

To examine *market specialisation,*[6] we construct in a similar way a Market Specialisation index (MS). The MS index for exports from country *c* to market destination *j* ($MS_{c,j}$) is defined as follows:

$$MS_{c,j} = \frac{X_{c,j} \Big/ \sum_{j} X_{c,j}}{X_{w,j} \Big/ \sum_{j} X_{w,j}} \tag{3}$$

$X_{c,j}$ and $X_{w,j}$ represent exports of country c and world exports,[7] respectively to export destination j. Again, we use a transformed version of the MS index, *MS**, that ranges between -1 and +1:

$$MS^{*}_{c,j} = \frac{MS_{c,j} - 1}{MS_{c,j} + 1} \tag{4}$$

$MS^{*}_{c,j} > 0$ indicates that country *c* is specialised (has a comparative advantage) in exports to region *j* relative to world exports. $MS^{*}_{c,j} < 0$ indicates that country *c* is under-specialised (has a comparative disadvantage) in exports to region *j* relative to world exports.

Determinants of Export Dynamics

To examine the determinants of country export dynamics relative to the dynamics of world exports, we undertake a constant market share analysis (CMSA).[8] This allows us to decompose export growth differentials into two effects: a structural effect (due to product and geographical structures of exports) and a competitiveness effect (due to relative export growth within product category or market destination).

The CMSA methodology is based on the following relationship:

$$g - g^{*} = \underbrace{\left[\sum_i \sum_j \left(s_{ij} - s^{*}_{ij}\right) g^{*}_{ij}\right]}_{Structural\ Effect} + \underbrace{\left[\sum_i \sum_j s_{ij} \left(g_{ij} - g^{*}_{ij}\right)\right]}_{Competitiveness\ Effect} \tag{5}$$

---

6 This analysis is conducted for exports of goods only, due to limited data on services exports by product and by market destination.

7 World exports excluding exports by country *c*.

8 For recent analyses of factors underlying export dynamics using the CMSA, see, for example, European Central Bank (2005), Amador and Cabral (2008), Hoeck and Schuller (2011), and de Munnik et al. (2012).

g is the percentage change in the country exports in period *t*. s_{ij} is the share of product *i* to destination market *j* in period *t-1*. The corresponding indicators for world exports are denoted by *.

The s*tructural effect* in Equation 5 quantifies the country's export growth differential that is due to its product and market specialisation. This effect is expected to be positive (negative) if exports are specialised in dynamic (sluggish) products/markets, i.e., product and market destinations with growth rates above (below) the world average. The c*ompetitiveness effect* in Equation 5 measures the aggregated impact of changes in market shares in the country's product and export destination markets.

The s*tructural effect* can be further disaggregated into three components; *product, market* and *mixed structure effects*. The *product effect* measures whether the country's exports are relatively more specialised (under-specialised) in dynamic (sluggish) products with respect to the average world demand. The *market effect* measures whether the country's exports are relatively more specialised (under-specialised) in exporting to dynamic (sluggish) export market destinations. The *mixed structure effect* accounts for the interaction effects between product and market specialisation. The decomposition of the s*tructural effect* into the above mentioned three components is expressed as follows:

$$\underbrace{\sum_i (s_i - s_i^*)\, g_i^*}_{Product\ Effect} + \underbrace{\sum_j (s_j - s_j^*)\, g_j^*}_{Market\ Effect} + \underbrace{\sum_i \sum_j \left[(s_{ij} - s_{ij}^*) - (s_i - s_i^*) \frac{s_{ij}^*}{s_i^*} - (s_j - s_j^*) \frac{s_{ij}^*}{s_i^*} \right] g_{ij}^*}_{Mixed\ Structural\ Effect} \qquad (6)$$

The competitiveness effect can be further decomposed in contributions by product and market groups. The competitiveness effect for a specific product group *i* (market group *j*) is calculated as the sum over all markets (products) of this effect.[9]

The competitiveness effect for a specific product *i* can be computed as follows:

$$\sum_j (s_{ij}(g_{ij} - g_{ij}^*) \qquad (7)$$

The competitiveness for a specific market destination *j* can be computed as follows:

$$\sum_i (s_{ij}(g_{ij} - g_{ij}^*) \qquad (8)$$

To examine the overall patterns of the product and market specialisation indices, we need to aggregate sectors and export destinations by groups.[10] For exports of goods and services we

[9] This decomposition of the competitiveness effect needs to be interpreted with caution as the portion of the competitiveness effect that is attributable to the influence of products and markets cannot be fully separated.

use the following nine groups,[11] comprising six goods and three services categories: i) labour-intensive and resource-based manufactures; (ii) manufactures with low skill and technology intensity; (iii) manufactures with medium skill and technology intensity; (iv) manufactures with high skill and technology intensity; (v) food, beverages, tobacco;[12] (vi) other goods; (vii) high-tech knowledge- intensive services; (viii) knowledge-intensive services; and (ix) less knowledge-intensive and unclassified services.[13] For regional export market destinations, we aggregate countries into eight groups: the Euro Area countries (EURO), Central and Eastern European countries (CEECs); the rest of Europe (ROE); Brazil, Russia, India, China, South Africa (BRICS); the rest of the OECD (ROECD); the United Kingdom (UK) and the United States (US).[14] The choice of regions includes greater disaggregation within Europe to capture differences in growth rates across Europe during this period and Ireland's export diversification strategy.

3. Empirical Analysis

Before estimating product and market specialisation for Ireland, we look at the patterns of growth in total world exports, by asking the question: in terms of the product and market destinations listed above, where has export growth occurred since 2000? While the overall growth[15] in world exports of goods and services was 11% over the period 2002-2011, Figure 1 illustrates the diverse rates of growth even at a high level of aggregation, by showing average annual export growth rates by product group relative to average export growth overall.

Five product groups are classified as dynamic in that they exhibit growth rates above the world average: other goods, high-tech knowledge-intensive services, low skill and technology-intensive manufactures, food, beverages, tobacco, and knowledge-intensive services. The presence of two of the services groups reflects the growth in intensity in world trade in services over the past decade, supported by trade agreements and technological

---

10 We recognise that in aggregating we mask some of the heterogeneity within our groups, but since our focus is on high-level patterns rather than detailed sectors, we find this approach more useful.

11 The groupings for exports of goods are based on definitions available from UNCTAD, while the groupings for exports of services are based on definitions available from the EUROSTAT.

12 We separate out exports of food, beverages, tobacco as they are particularly significant for indigenous Irish enterprises.

13 The key components of these groups are: (i): footwear, clothes, glassware, paper; (ii): metals, household equipment; (iii): cars, turbines, civil engineering; (iv): pharmaceuticals, chemicals, medical devices, ICT; (v) meat, milk, fish, vegetables, fruit, beverages, tobacco; (vi): musical instruments, parts; records, tapes & similar; (vii): communications, ICT; (viii) transport, financial services, insurance, other business services and personal, cultural and recreational services; and (ix): government services, royalties, and licence fees, travel and construction. Further details on these product groups are set out in Table A1 in the Appendix.

14 The detailed country composition of each region is explained in Table A2 in the Appendix.

15 We refer to the average annual growth rate throughout.

progress. Ireland's exports in the five dynamic product groups account for 53.5 % of total exports in 2011. Contrary to what one might expect, high skill and technology-intensive manufacturing had below average growth in this period. However, this is consistent with this product group being heavily engaged in exporting for several decades and consequently at a more mature growth phase, as well as being characterised by innovations that have led to productivity gains and dramatic reductions in price. Irish exports in the four product groups exhibiting sluggish growth are 46.5% of total exports.

The pattern of export growth also differs across regions of the world, reflecting differences in levels of development and patterns of regional demand. Figure 2 shows, for eight different regions, growth rates for goods by region relative to average export growth of goods worldwide.[16] Two regions exhibit significantly higher average annual growth over the period 2000-2011: the BRICS, and the CEECs. Exports from Ireland to these two regions currently account for only 5.3% of Irish exports. The two regions with significantly lower than average growth rates are the UK and US, which together account for 38.3% of Irish goods exports.

To explore Ireland's comparative advantage by product and market, we compute the product and geographic market specialisation indices defined in equations (1) - (4) for Ireland and the seven EU comparator countries (listed in Section 1); the results are presented in Tables 1 and 2. In each case, we look at three time points: 2002, 2007 (immediately pre-crash) and 2011. Ireland has a revealed comparative advantage in three product groups: high skill and technology intensive manufactures, high-tech knowledge-intensive services and knowledge-intensive services. The first two groups are ones where multinational investment dominates economic activity in Ireland, and the third also has a strong multinational presence. In high-tech knowledge-intensive services, one of the five product groups that are dynamic (as per our classification in Figure 1), Ireland's comparative advantage grew between 2002 and 2011. However, Ireland lost relative comparative advantage in high skill and technology-intensive manufactures, a sector which exhibited marginally sluggish growth over this period.

Looking at Ireland in a comparative European context, it is striking just how different the EU countries are in relation to RCA within the country categories (Nordics, periphery and Central European). Ireland tends to be at the more extreme end of the distribution of RCAs and is strikingly different in two product groups – high-tech knowledge-intensive services (due to the strong presence of multinationals) and labour intensive resource-based manufactures (due to lower cost competitors).

[16] Due to data limited data on services exports by product and by market destination, this analysis relates to exports of goods only.

It is also striking how little structural specialisation has changed over the period. Furthermore, despite the dramatic changes in 2008, there seems to be little evidence of any discontinuity in relation to the downturn – the pattern in 2011 is very similar to that in 2007 for most product groups and countries.

Table 2 shows market specialisation for goods only. Ireland had a revealed comparative advantage in four geographic markets in 2011: the UK, Euro Area, the rest of Europe, and the US. These results are unsurprising given the traditional trade relationship with the UK, the focus of Irish and multinational exports on Europe, and the scale of US multinational investment in Ireland. Looking at these data in the context of Figure 2, we see that Ireland's comparative advantage is in markets with sluggish growth. More surprising at first sight is the scale of the revealed comparative disadvantage of Ireland in CEE markets. This may reflect the traditional trade links of these countries with the more geographically proximate countries in continental Europe (e.g., Germany, Austria, Italy).

Looking from a comparative context for 2002 and 2011, Ireland is clearly at the extreme end in relation to the UK and US, but is very similar to the other countries in relation to the Euro Area. Ireland is similar to Portugal in terms of its revealed comparative disadvantage in the CEECs, whereas all other comparator countries have a revealed comparative advantage in relation to the CEECs, which is a dynamic market in terms of our classification in Figure 2. In relation to the BRICS, the one country that has a revealed comparative advantage is Finland, reflecting its historic relationship with the Soviet Union, which parallels Ireland's with the UK.

Over the decade under consideration, the only striking change in Ireland exports are those to the US, where the market specialisation index increased from -0.04 to +0.35, with most of this change occurring since 2007. This change is consistent with multinationals in Ireland, especially US multinationals, being part of global supply chains, and with the specialisation of product lines being by geographic area.[17]

While Tables 1 and 2 indicate that changes in product and geographical/market specialisation have been very minimal over the period, it is nonetheless useful to explore the factors driving the export dynamics. We do this for Irish exports of goods by looking at the difference between the growth of Irish exports and world exports, and decomposing these differences using constant market share analysis, distinguishing structural effects (how much of the difference is due to relative changes in global product and geographical structures) and competitiveness effects (how much is due to changes in market shares for Ireland of

[17] For example, many of the products of the pharmaceutical companies in Ireland are for global demand (including US).

each product/destination). We distinguish three time periods: 2000-2003 (early bubble period); 2004-2007 (later bubble period) and 2008-2011 (crisis period).

Table 3 shows that Ireland's share of global exports declined over the period.[18] Irish goods exports grew at a faster pace than world exports in the early period but, as the economy increasingly concentrated on construction, Irish exports grew at just half the growth rate in world exports during the later bubble period, and at less than a third in the period since the start of the crisis. Decomposing the difference between Irish and world export growth rates, we find that both structural and competitiveness effects were at work. The structural effect in all three periods is negative – modestly so in the early period but equally strongly in the immediate pre- and post-crisis periods. It is possible to further decompose the structural effect into product and market effects. These measures show respectively, whether the relative specialisation of Irish goods exports is towards dynamic products in terms of world demand and/or towards dynamic export market destinations. They show that the specialisation effects are negative except for the product specialisation effect in the first period. In terms of global export markets, Ireland was in the industries and markets that were less dynamic than the world average. Turning to the competitiveness effect, we find that it is positive in the early bubble period, translating into a strongly negative effect in the later bubble period and a more modest negative effect in recent years. This is consistent with Ireland's having lost competitiveness in the middle of the decade and having regained competitiveness in the period since the crisis started.

Further decomposition in Table 4 reveals the sources of the structural effect in terms of specific product composition and market destination. Regarding the product composition effect, two groups contribute positively in all three periods: high skills and technology intensity manufactures and food, beverages, tobacco, with the former playing the dominant role. These positive effects are more than offset by the negative effects in the remaining industries, especially in medium skill and technology intensity manufactures. In terms of the market effect, the Euro Area and the Rest of Europe effects are positive in all three periods, while the UK and US generate opposing effects, going from positive to marginally negative and marginally negative to positive respectively. The three dynamic market regions all contributed negatively to the market effect, due to Ireland's under-specialisation in exports to these markets.

Finally, it is possible to decompose the competitiveness effect in terms of changes in the market shares of Ireland's goods exports by product groups and market destination group. Table 5 shows that the expansion and contraction of the share of exports in high skill and technology intensity manufactures dominated the competitiveness effect via product

[18] These developments in market shares do not reflect changes in the US dollar exchange rate.

composition over the period. The positive effect in 2000/2003 was entirely due to this product group and the rapid reduction in its market share in the middle period drove the major change in the competitiveness effect. The smaller negative competitiveness effect in the period after 2008 was again driven, in the main, by the reduction in the negative contribution of this product group, but the overall competitiveness effect remained negative.

Viewing the competitiveness effect through the market destination prism, we find that the positive competitiveness effect in 2000-2003 was driven primarily by increased export shares to Ireland's traditional markets, which are in the sluggish growth category. The market destination groups that drove the negative competitiveness effect in the immediate pre-crisis period were the Euro Area, and to a lesser extent the US. These same groups were responsible for the less negative competitiveness effect in the post-crisis period, with the US turning from a negative to a positive effect.

4. Conclusions and Policy Implications

This paper has sought to contextualise Ireland's export performance over the past decade. Our approach has been to establish relevant stylised facts in relation to Ireland's export performance and to explore the factors driving its changes relative to world exports. We did this by estimating how Irish exports have fared relative to world exports, and specifically whether Ireland's product and market specialisation is towards products and markets which are dynamic, i.e., growing faster than the world average.

Our analysis reveals Ireland's increased specialisation in two of the fastest growing product groups – (i) high-tech knowledge-intensive services and (ii) knowledge-intensive services. However, Ireland's market specialisation in goods exports is towards markets that are sluggish – UK, Euro Area and US. The most striking result is our declining export specialisation in the CEECs at a time when these countries have been integrating further with the European Union.

These findings are challenging from the perspective of Ireland succeeding in pursuing its economic strategy of *export-led growth*. The extent to which Ireland's exports can continue to grow depends on whether Ireland is exporting products whose export demand is increasing and to geographic markets whose export demand is rising. As a long-standing goods exporting country, it is to be expected that Irish enterprises will face increasing competition in her traditional export markets as increasing numbers of countries are becoming export focused and are targeting these markets (UK, Euro Area, US). To grow or even maintain market share in these markets, Irish enterprises will have to be increasingly competitive, and this will require continual innovation in products and processes as well as marketing. To grow our goods exports by exporting into the dynamic markets (e.g., BRICS and CEECs) requires building a whole new set of exporting relationships.

Given Ireland's openness to trade and foreign direct investment over five decades, the structure of its economy reflects what is exported and where these exports go. In this respect, we are quite different from the comparator countries used above. As long as

multinational companies dominate our exports, then their product specialisation and market orientation are going to drive our pattern of exporting in terms of both products and markets. At present, this means primarily exporting manufactures that have high skill and high technology intensity and services that are knowledge-intensive and high-tech knowledge-intensive to European countries and to the US. While the current mix is broadly positive in terms of products, it is clearly challenging in terms of destination markets.

What policy implications can be drawn from this analysis? In relation to multinationals, there may be some scope in promoting their Irish production units to becoming global suppliers and hence broadening their destination market base. The extent to which this is possible will vary by enterprise and possibly product and will depend on the specifics of the relevant global value chains in the case of goods. It may be more feasible in the case of service products. In relation to the indigenous sector, the challenge is to secure greater investment growth in dynamic products, to promote innovative activities in these enterprises and to support export expansion into dynamic markets. Given the costs of entry into new markets, a targeted export strategy would make sense.

By identifying stylised facts, this paper has provided a starting point for looking at Ireland's global export performance. However, more research needs to be undertaken to determine the most appropriate policy stance, particularly in relation to indigenous enterprises. For these, we need a greater understanding of the relationship between innovation and exporting and how this varies by enterprise size, product area and market focus. We also need to find ways of identifying those who can innovate and export successfully and how to expand the success in innovation and exporting of those already operating in global markets. In the present climate, this also means exploring the financial constraints that enterprises face in investing in innovation and in expanding their exports.

Acknowledgements

We thank Frank Ryan, Niall McInerney, Conor O'Toole and participants at the IIIS 10th Anniversary Conference for useful comments and suggestions. This research has been supported financially by a grant from the FBD Trust.

References

Amador, J. and S. Cabral (2008) "The Portuguese Export Performance in Perspective: A Constant Market Share Analysis", Economic Bulletin and Financial Stability Report Articles, Banco de Portugal.

Bourguinon, F., D. Coyle, R. Fernandez, F. Giavazzi, D. Marin, K. O'Rourke, R. Portes, P. Seabright, A. Venables, T. Verdier and L. A. Winters (2002) "Making Sense of Globalization: A Guide to the Economic Issues", CEPR Policy Paper No. 8.

Balassa, B. (1965) "Trade Liberalization and Revealed Comparative Advantage", *The Manchester School of Economic and Social Studies* no. 33(2), pp. 92-123.

European Central Bank (2005) "Competitiveness and the Export Performance for the Euro Area", by a Task Force of the Monetary Policy Committee of the European System of Central Banks, Occasional Paper Series No. 30, June.

European Commission (2012) "European Competitiveness Report 2012. Reaping the Benefits of Globalization", Luxembourg: Publications Office of the European Union.

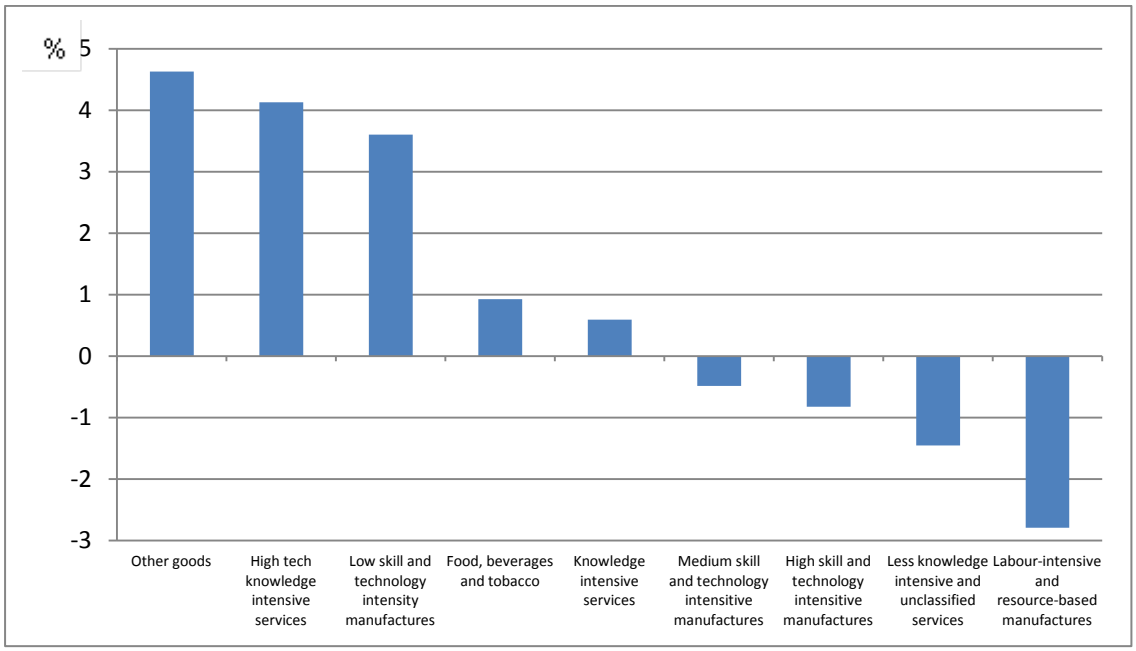
Francois, J., O. Pindyuk, and J. Wörz (2009) "Trends in International Trade and FDI in Services", IIDE Discussion Paper 200908-2.

Hoeck. P. and G. Schuller (2011) "Determinants of the Market Share Evolution of Luxembourg Exports of Goods and Services", Working Paper No. 56, STATEC Luxembourg.

International Monetary Fund (1993) *Balance of Payments Manual* 5th Edition, Washington, D.C.: International Monetary Fund.

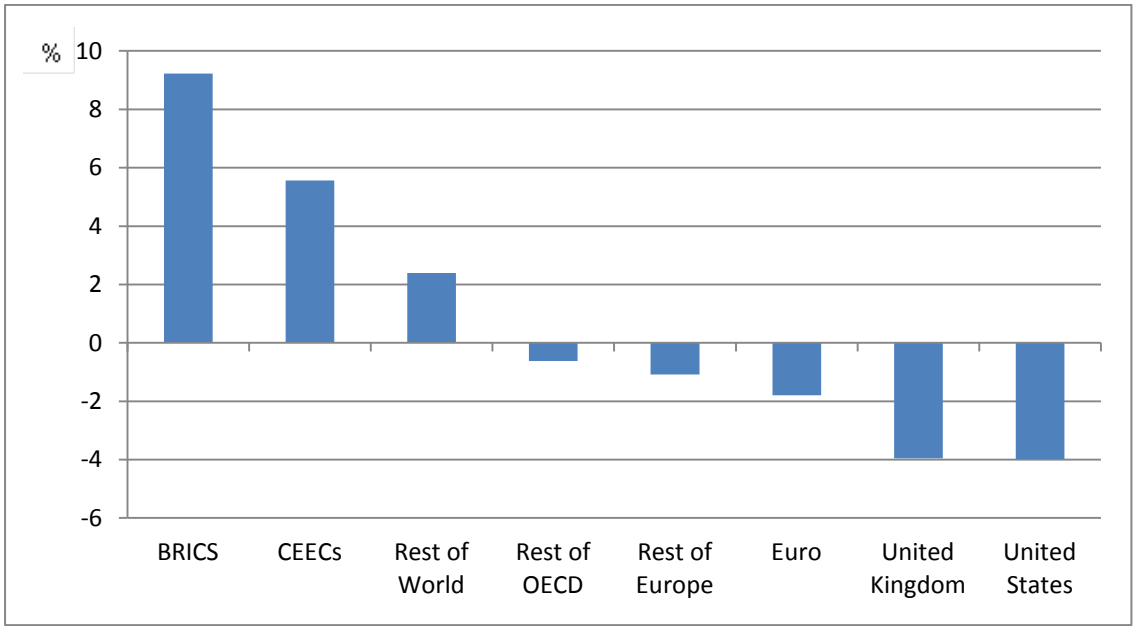
de Munnik, D., W. Sze, and J. Jacob. J. (2012) "The Evolution of Canada's Global Export Market Share", Working Paper 2012-31, Bank of Canada.

Figure 1: Dynamic and Sluggish Product Groups, 2002-2011



Note: Own calculations showing the difference between average annual export growth of a particular product group and the average annual growth of total world exports of goods and services over the period 2002 to 2011.

Figure 2: Dynamic and Sluggish Export Market Destinations, 2000-2011



Note: Own calculations showing the difference between average annual growth of exports of goods to a particular region and the average annual growth of total world exports of goods over the period 2000 to 2011.

Table 1: Revealed Comparative Advantages, Ireland and other Selected Small Open Economies

Product Group	Year	Ireland	Denmark	Finland	Portugal	Greece	Austria	Hungary	Slovakia
High skill and technology intensity manufactures	2002	0.39	-0.20	-0.02	-0.40	-0.65	-0.33	0.04	-0.42
	2007	0.27	-0.28	-0.07	-0.35	-0.58	-0.31	0.10	-0.11
	2011	0.26	-0.31	-0.22	-0.38	-0.53	-0.29	0.12	-0.05
Medium skill and technology intensity manufactures	2002	-0.68	-0.18	-0.02	-0.09	-0.73	0.08	0.17	0.23
	2007	-0.75	-0.18	-0.09	-0.01	-0.66	0.13	0.20	0.27
	2011	-0.76	-0.18	-0.04	0.00	-0.68	0.12	0.22	0.34
Low skill and technology intensity manufactures	2002	-0.81	-0.10	0.21	-0.17	-0.43	0.22	-0.12	0.39
	2007	-0.85	-0.21	0.23	-0.06	-0.40	0.22	-0.20	0.30
	2011	-0.85	-0.11	0.20	-0.09	-0.27	0.26	-0.22	0.28
Labour-intensive and resource-based manufactures	2002	-0.76	-0.06	0.30	0.42	-0.14	0.06	0.01	0.25
	2007	-0.80	-0.01	0.25	0.38	-0.24	0.08	-0.20	0.07
	2011	-0.82	-0.06	0.25	0.38	-0.29	0.13	-0.19	0.05
Food, beverages, tobacco	2002	-0.05	0.39	-0.58	-0.06	0.12	-0.21	0.01	-0.33
	2007	0.02	0.34	-0.55	0.07	0.09	-0.09	0.00	-0.24
	2011	-0.11	0.27	-0.52	0.06	0.15	-0.04	-0.01	-0.24
Other goods	2002	-0.25	-0.21	0.09	-0.30	-0.17	-0.10	-0.41	-0.12
	2007	-0.39	-0.30	0.04	-0.25	-0.20	-0.18	-0.52	-0.30
	2011	-0.41	-0.32	-0.01	-0.23	-0.21	-0.25	-0.52	-0.34
High-tech knowledge-intensive services	2002	0.79	-0.03	0.25	-0.19	-0.13	-0.08	-0.24	-0.23
	2007	0.82	-0.03	0.14	-0.03	-0.18	0.03	-0.15	-0.36
	2011	0.84	-0.08	0.60	-0.12	-0.05	-0.01	-0.16	-0.37
Knowledge-intensive services	2002	0.02	0.38	0.04	-0.05	0.46	0.05	-0.29	-0.03
	2007	0.33	0.43	0.02	0.07	0.52	0.04	-0.20	-0.34
	2011	0.32	0.44	0.10	0.13	0.50	0.12	-0.12	-0.51
Less knowledge-intensive and unclassified services	2002	-0.48	-0.13	-0.24	0.33	0.60	0.17	0.09	-0.25
	2007	-0.36	-0.15	-0.30	0.33	0.52	0.14	-0.16	-0.36
	2011	-0.42	-0.14	-0.07	0.32	0.52	0.11	-0.17	-0.39

Source: UNCTAD statistics database, own calculations.

Notes: Data on exports of services is not available in some years for all countries. In these cases, calculations are based on data from the nearest available year.

Table 2: Market Specialisation Indices for Exports of Goods, Ireland and other Selected Small Open Economies

Exporting country	Year	Export Destination							
		EURO	United Kingdom	CEECs	Rest of Europe	United States	BRICS	Rest of OECD	Rest of World
Ireland	2000	0.13	0.60	-0.29	0.16	-0.04	-0.66	-0.36	-0.51
	2007	0.17	0.60	-0.43	0.19	0.15	-0.62	-0.42	-0.54
	2011	0.22	0.60	-0.35	0.20	0.35	-0.63	-0.42	-0.59
Denmark	2000	0.15	0.21	0.16	0.65	-0.55	-0.37	-0.44	-0.44
	2007	0.11	0.17	0.09	0.64	-0.40	-0.43	-0.47	-0.51
	2011	0.15	0.31	0.12	0.64	-0.36	-0.43	-0.42	-0.42
Finland	2000	0.08	0.23	0.48	0.57	-0.45	0.22	-0.41	-0.33
	2007	0.02	0.12	0.29	0.59	-0.38	0.20	-0.37	-0.28
	2011	0.04	0.13	0.29	0.61	-0.42	0.10	-0.33	-0.42
Austria	2000	0.31	-0.13	0.68	0.40	-0.57	-0.38	-0.59	-0.49
	2007	0.28	-0.13	0.56	0.25	-0.43	-0.35	-0.49	-0.42
	2011	0.34	-0.11	0.59	0.27	-0.48	-0.36	-0.52	-0.49
Portugal	2000	0.40	0.32	-0.27	0.14	-0.53	-0.64	-0.70	-0.54
	2007	0.39	0.13	-0.28	-0.09	-0.51	-0.67	-0.60	-0.26
	2011	0.44	0.16	-0.16	-0.08	-0.57	-0.55	-0.58	-0.25
Greece	2000	0.16	0.11	0.62	0.36	-0.49	-0.27	-0.36	-0.07
	2007	0.15	0.12	0.56	0.40	-0.51	-0.48	-0.41	-0.17
	2011	0.20	0.12	0.54	0.40	-0.55	-0.50	-0.25	-0.17
Hungary	2000	0.40	-0.19	0.52	-0.18	-0.44	-0.45	-0.69	-0.55
	2007	0.29	0.03	0.62	-0.10	-0.65	-0.37	-0.58	-0.42
	2011	0.32	0.12	0.65	-0.13	-0.64	-0.37	-0.54	-0.39
Slovakia	2000	0.33	-0.47	0.83	-0.07	-0.81	-0.61	-0.82	-0.63
	2007	0.28	0.03	0.71	-0.05	-0.64	-0.46	-0.70	-0.65
	2011	0.32	-0.02	0.75	0.03	-0.75	-0.34	-0.69	-0.73

Source: UNCTAD statistics database, own calculations.

Table 3: Irish Exports of Goods: Constant Market Share Analysis

	2000/2003	2004/2007	2008/2011
Share of Irish exports in world exports	1.40	1.20	1.00
Growth of Irish exports	7.11	7.51	2.12
Growth of world exports	6.51	15.46	7.02
Total effect	0.60	-7.95	-4.90
Structural effect	-0.42	-3.61	-3.60
Product effect	1.51	-2.31	-1.01
Market effect	-1.48	-2.06	-2.75
Mixed effect	-0.44	0.76	0.16
Competitiveness effect	1.03	-4.34	-1.29

Source: UNCTAD statistics database, own calculations.

Table 4: Irish Exports of Goods: Contribution to the Structural Effect by Product and by Market Destination Groups

Product Groups	2000/2003	2004/2007	2008/2011
Labour-intensive and resource-based manufactures	-0.61	-1.15	-0.59
Low skill and technology intensity manufactures	-0.50	-1.58	-0.53
Medium skill and technology intensity manufactures	-1.48	-3.48	-1.24
High skill and technology intensity manufactures	4.34	4.66	2.09
Food, beverages, tobacco	0.01	0.25	0.02
Other goods	-0.25	-1.01	-0.76
Total	1.51	-2.31	-1.01
Market Destination Groups	2000/2003	2004/2007	2008/2011
Euro Area	0.44	1.93	0.56
United Kingdom	0.71	1.40	-0.03
Rest of Europe	0.07	0.29	0.11
CEECs	-0.26	-0.62	-0.17
Rest of OECD	-0.33	-0.84	-0.42
United States	-0.05	0.41	0.48
BRICS	-0.97	-1.84	-1.42
Rest of the World	-1.10	-2.79	-1.85
Total	-1.48	-2.06	-2.75

Source: UNCTAD statistics database, own calculations.

Notes: The contribution of each product/market effect is calculated as the difference between the product/market's share in Ireland's and world exports, multiplied by the growth of the product/market in world exports. The contribution of each product group is computed as the sum of the product effect for each product (SITC Rev. 3, 3-digit) contained in the product group. The contribution of each market destination group is computed as the sum of the market effect for each country belonging to the market destination group. The figures shown above are averages over the respective periods.

Table 5: Irish Exports of Goods: Contribution to the Competitiveness Effect by Product and by Market Destination Groups

Product Groups	2000/2003	2004/2007	2008/2011
Labour-intensive and resource-based manufactures	-0.06	-0.18	-0.02
Low skill and technology intensity manufactures	-0.04	-0.04	0.01
Medium skill and technology intensity manufactures	-0.37	-0.45	-0.14
High skill and technology intensity manufactures	1.76	-3.13	-0.68
Food, beverages, tobacco	-0.11	-0.12	-0.55
Other goods	-0.16	-0.42	0.09
Total	1.03	-4.34	-1.29
Market Destination Groups	2000/2003	2004/2007	2008/2011
Euro Area	0.12	-2.55	-0.54
United Kingdom	0.47	-0.36	-0.58
Rest of Europe	0.17	-0.29	-0.22
Rest of OECD	0.16	-0.27	-0.19
United States	0.45	-0.72	0.90
CEECs	-0.09	0.01	-0.05
BRICS	-0.03	-0.03	-0.11
Rest of the World	-0.22	-0.15	-0.51
Competitiveness Effect	1.03	-4.34	-1.29

Source: UNCTAD, own calculations.

Notes: The product/market competitiveness effect is calculated as the difference between the product/market's growth in Ireland's and world exports, multiplied by the share of the product/market in Ireland's exports. The product group competiveness effect is computed as the sum of the product effect for each product (SITC Rev. 3, 3-digit) contained within the product group. The market destination group competiveness effect is computed as the sum of the market effect for each country belonging to the market destination group. The figures shown above are averages over the respective periods.

Appendix

Table A1: Composition of Exports of Goods and Services Groups

Goods and Services Groups	Industry Composition
Labour-intensive and resource-based manufactures	611, 612, 613,633, 634, 635, 641, 642, 651, 652, 653, 654, 655, 656, 657, 658, 659, 661, 662, 663, 664, 665, 666, 821, 831, 841, 842, 843, 844, 845, 846, 848, 851, 894.
Manufactures with low skill and technology intensity	671, 672, 673, 674, 675, 676, 677, 678, 679, 691, 692, 693, 694, 695, 696, 697, 699, 785, 786, 791, 793, 812, 813.
Manufactures with medium skill and technology intensity	621, 625, 629, 711, 712, 713, 714, 716, 718, 721, 722, 723, 724, 725, 726, 727, 728, 731, 733, 735, 737, 741, 742, 743, 744, 745, 746, 747, 748, 749, 771, 772, 773, 774, 775, 778, 781, 782, 783, 784, 811, 893.
Manufactures with high skill and technology intensity	511, 512, 513, 514, 515, 516, 522, 523, 524, 525, 531, 532, 533, 541, 542, 551, 553, 554, 562, 571, 572, 573, 574, 575, 579, 581, 582, 583, 591, 592, 593, 597, 598, 751, 752, 759, 761, 762, 763, 764, 776, 792, 871, 872, 873, 874, 881, 882, 883, 884, 885.
Food, beverages, tobacco	011, 012, 016, 017, 022, 023, 024, 025, 034, 035, 036, 037, 041, 042, 043, 044, 045, 046, 047, 048, 054, 056, 057, 058, 059, 061, 062, 071, 072, 073, 074, 075, 081, 091, 098, 001, 111, 112, 121, 122, 222, 223.
Other goods	891, 892, 895, 896, 897, 898, 899, 211, 212, 231, 232, 244, 245, 246, 247, 248, 251, 261, 263, 264, 265, 266, 267, 268, 269, 272, 273, 274, 277, 278, 281, 282, 283, 284, 285, 286, 287, 288, 289, 291, 292, 411, 421, 422, 431, 667, 681, 682, 683, 684, 685, 686, 687, 689, 961, 971.
High tech knowledge intensive services	245, 263.
Knowledge intensive services	205, 253, 260, 268, 287.
Less knowledge intensive and unclassified services	291, 236, 249, 266.

Notes: The definitions used to construct the product groups for exports of goods, are taken from the UNCTAD statistics database. We construct a separate category for Food, beverages and tobacco and classify the remaining goods as the Other goods category. For exports of goods groups, the industry codes correspond to the SITC Rev. 3, 3-digit codes. The knowledge intensity classification for services is based on the definitions provided by EUROSTAT. The service industry codes shown above are from the Balance of Payments Manual, 5th Edition (International Monetary Fund, 1993). To match the UNCTAD services data as close as possible to the EUROSTAT service industry knowledge intensity classification, we used a concordance table provided by Francois et al. (2009).

Table A2: Country Composition of Export Destination Regions

Export Region	Country Composition
Euro Area (EURO)	Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Portugal, Spain, Netherlands
Central and Eastern European Countries (CEECs)	Bulgaria, Czech Republic, Estonia, Latvia, Lithuania, Romania, Hungary, Poland, Slovakia, Slovenia
Rest of Europe (ROE)	Cyprus, Denmark, Iceland, Malta , Norway, Sweden, Switzerland
BRICS	Brazil, Russian Federation, India, China, South Africa
Rest of OECD (ROECD)	Australia, Canada, Chile, Israel, Japan, Korea, Mexico, New Zealand, Turkey
United Kingdom (UK)	United Kingdom
United States (US)	United States

Year	Number	Title/Author(s) ESRI Authors/Co-authors *Italicised*
2013		
	450	Bank-lending constraints and alternative financing during the financial crisis: Evidence from European SMEs Eddie Casey and *Conor M. O'Toole*
	449	Euro area CDS spreads in the crisis: The role of open market operations and contagion *Petra Gerlach-Kristen*
	448	User Cost of Debt-Financed Capital in Irish Manufacturing Industry: 1985 – 2011 *Nuša Žnuderl* and *Ide Kearney*
2012	447	The US and Ireland Approach to Sentencing in Cartel Cases: the Citroen Case *Paul K Gorecki* and Sarah Maxwell
	446	The Incentive to Invest in Thermal Plants in the Presence of Wind Generation *Valeria Di Cosmo* and *Laura Malaguzzi Valeri*
	445	Employment Protection and Innovation Intensity *Gavin Murphy, Iulia Siedschlag* and *John McQuinn*
	444	Distance Effects, Social Class and the Decision to Participate in Higher Education in Ireland John Cullinan, Darragh Flannery, *Sharon Walsh* and *Selina McCoy*
	443	Sentencing in Criminal Cartel Cases in Ireland: the Duffy Judgment *Paul K. Gorecki* and Sarah Maxwell
	442	Currency intervention and the global portfolio balance effect: Japanese lessons *Petra Gerlach-Kristen,* Robert N McCauley and Kazuo Ueda
	441	Regulating Small Public Service Vehicles in Ireland: Is There a Problem of Oversupply? *Paul K. Gorecki*
	440	Combining Public Sector and Economic Reform *Frances Ruane*

For earlier *Working Papers* see

http://www.esri.ie/publications/search_for_a_working_pape/search_results/index.xml