

**Scottish Development International**

**Inward Investment Research**

**Final Report**

February 2013

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## Table of Contents

<b>1</b>	<b>EXECUTIVE SUMMARY .....</b>	<b>1</b>
<b>2</b>	<b>BACKGROUND .....</b>	<b>16</b>
<b>3</b>	<b>COMMENTARY ON THE EXISTING PROPOSITION .....</b>	<b>19</b>
<b>4</b>	<b>EMERGING LITERATURE .....</b>	<b>30</b>
<b>5</b>	<b>BENCHMARKING EXPERIENCE .....</b>	<b>48</b>
<b>6</b>	<b>METHODOLOGY FOR ASSESSMENT OF ECONOMIC IMPACT .....</b>	<b>53</b>
<b>7</b>	<b>CONCLUSIONS .....</b>	<b>59</b>

### Appendices

- APPENDIX 1 BIBLIOGRAPHY**
- APPENDIX 2 PRESENTATIONS**
- APPENDIX 3 GLOSSARY**

RSM Tenon is a member of the RSM International network. The RSM International network is a network of independent accounting and consulting firms, each of which practice in their own right. The RSM International network is not itself a separate legal entity in any jurisdiction.

## 1 EXECUTIVE SUMMARY

Scottish Enterprise (SE) and Scottish Development International (SDI) appointed RSM Tenon to undertake a literature review of current and emerging trends in the academic literature related to inward investment. The study updates the previous analysis undertaken by SE in 2009 and covers the period 2009 to date. The objective of the study is to provide an overarching analysis of the emerging literature as to how inward investment and outward foreign direct investment (FDI) can contribute to overall economic growth.

### 1.1 Terms of Reference

The study is expected to focus on the following areas of interest:

- A general assessment of the current state of the literature on inward investment and outward FDI placing this in the context of the previous research undertaken for SDI;
- New trends or factors emerging in inward investment and outward FDI not covered in previous research;
- Factors affecting an inward investment decision at the macro level (e.g. skills availability);
- Factors affecting an inward investment decision at the micro level (e.g. corporate strategy);
- Identifying and analysing the themes important in investment decisions;
- Reviewing literature on impact assessments, including:
  - The quantitative and qualitative effects of inward investment and outward FDI;
  - Looking at both the 'what' (i.e quantitative) and the 'how' (qualitative) aspects;
  - Analysis of the factors driving inward investment economic impacts;
  - Analysis of the methodologies used in economic impact assessments; and
  - How public sector support in this area is monitored and evaluated.

### 1.2 Methodology

The major focus of this report is to identify and summarise the empirical literature dealing with the determinants of FDI and outward FDI, as well as perceived spillover efficiency benefits (quantitative and qualitative aspects). The following section discusses the methodology underlying the data gathering exercise and its subsequent analysis.

A Project Initiation Meeting was held with Scottish Enterprise's Economic Research Team in August 2012 to address the following issues:

- Confirmation of existing literature sources; and
- Agreement as to the timing and location of an interim research findings workshop.

An interim findings workshop was held in the RSM Tenon Office in Belfast on 25 October 2012, the following were in attendance:

- Jonathan Slow, SDI;
- Elizabeth Pickett, Scottish Enterprise (via teleconference)
- Sheila Perry, Scottish Enterprise (via teleconference);

- Keith Wilson, RSM Tenon;
- Andrew Webb, OCO Global; and
- Chris McCullagh, RSM Tenon.

Presentations of interim findings were delivered by:

- Keith Wilson, RSM Tenon; and
- Andrew Webb, OCO Global.

(Copies of the presentations are contained in Appendix B).

Subsequent to the delivery of the presentations the following points were noted

- Recognition of the continuing validity of a significant proportion of the Harris and Li Literature Review (the subsequent Literature Review needs to confirm those areas which have remained unchanged and also highlight emerging trends);
- Confirmation of the OCO Global/UKTI approach to impact assessment
- Emerging trends which the Steering Group wished to be further investigated included:
  - Links between absorptive capacity (for innovation), spillovers and FDI;
  - Internationalisation and Clustering;
  - Tax Simplification;
  - Rationale/Impact of Re-shoring; and
  - Emerging best practice in Germany and Republic of Ireland.

Arising from the Interim Findings Workshop, RSM Tenon undertook a second round of scanning of relevant documents which led to the development of the following report.

### 1.3 **Commentary on the Existing Proposition (Harris and Li Literature Review)**

Drawing reliance on the Internationalisation Evidence Review undertaken by Scottish Enterprise in 2009, the table below identifies the key findings of this Review and confirms whether there has been any subsequent research into the following key areas since 2009, including:

- Internationalisation Models;
- Determination of Internationalisation;
- Impact of internationalisation;
- Models of Outward FDI;
- Exporting/Outward FDI;
- Impacts of Outward FDI:
  - Positive Impacts/benefits; and
  - Negative Impacts.
- Key Market Failures; and
- Internationalisation, Innovation and Knowledge Spillovers.

Key Issue	Emerging Literature
Internationalisation Model	There has been no significant emerging literature related to this topic.
Determinants of Internationalisation	Recent research by Steven Globerman and Victor Zitian Chen has identified a number of additional determinants of internationalisation, are discussed in Section 4.1 and include openness to foreign investment and trade and the impact of taxation
Impact of Internationalisation	There has been increased analysis as to the impact of knowledge spillovers as a result of exporting on productivity and are discussed in Section 4.1.2. These mainly relate to suggested improvements in spillover measurement and the awareness of both the impact of indigenous absorptive capacity and the determination of Multinational Corporations to prevent technology transfer on the level of spillovers.
Models of Outward FDI	There has been increased analysis as to the impact of knowledge spillovers as a result of exporting on productivity and are discussed in Section 4.1.2. These mainly relate to suggested improvements in spillover measurement and the awareness of both the impact of indigenous absorptive capacity and the determination of Multinational Corporations to prevent technology transfer on the level of spillovers.
Exporting/outward FDI	There has been increased analysis as to the impact of knowledge spillovers as a result of exporting on productivity and are discussed in Section 4.1.2.
Impacts of Outward FDI	Due to the rise of the Far Eastern Markets, there has been a significant increase in analysis as to the impact of transportation costs and technology poaching (particularly in recent American literature). The implications of this are discussed in Section 4.1.1 and mainly relate to re-shoring of activity.
Key Market Failures	<p>We have reviewed the emerging literature and conclude that the range of market failures has remained the same, however there has been an increase in importance of the following four:</p> <ul style="list-style-type: none"> <li>• Financial barriers – firms without sufficient collateral or track record have less access to finance;</li> <li>• Appropriability failures – problems with the enforceability of property rights, especially over knowledge and technology;</li> <li>• Institutional Failure Network – Networks may not possess the right portfolio of skills, information and knowledge and membership rules may exclude some firms; and</li> <li>• Systemic Failure – bounded rationale and path dependency –Lead firms to make sub optimal choices of technology to which they may become locked</li> </ul>

	<p>in.</p> <p>Although the generic definitions of these four failures has remained constant, the rise of Far Eastern economies has led to an increase in the discussion of their impacts due to both the complexity of networks and increased financial/political barriers to trade. Section 4.1.1 provides an overview as to the implications of each of these market failures in the Far East.</p> <p>We have reviewed the market failures against Scottish Enterprise's Rationale for Public Sector Interventions and confirm that all of the above conform with the efficiency rationale for public assistance, i.e. to ensure the achievement of economic objectives by addressing inefficiencies in the market.</p>
Internationalisation, Innovation and Knowledge Spillovers	There has been significant additional analysis in terms of knowledge spillover effects and are discussed in Section 4.1.2.

In summary the review of the Harris and Li Study informed the discussion at the Interim Findings Workshop held on 25 October, the outputs of which are discussed in the following sections.

## 1.4 Emerging trends

In line with the recommendations of the Interim Findings Workshop, the following section identifies the emerging trends under each of the following headings:

- Links between absorptive capacity (for innovation), spillovers and FDI;
- Internationalisation and Clustering;
- Tax Simplification; and
- Rationale/Impact of Re-Shoring.

### 1.4.1 Links between absorptive capacity (for innovation), spillovers and FDI;

The emerging trends in the literature review focused on the identification and capture of new knowledge spillovers and the link between absorptive capacity and spillovers from FDI.

Blomstrom and Kokko (2009) identified four ways as to how technology might be diffused (spillovers) from foreign affiliates to other firms, including:

Method of Diffusion	of	Explanation
Demonstration imitation effect;	–	Occurs if there are arm's length relationships between MNCs and domestic firms and domestic firms learn superior production technologies and other knowledge from MNC's. The most important forms are imitation of managerial and organisational innovation and imitation of technology.

Competition effect	Is when competition from MNCs force domestic rivals to update production technologies and techniques to export spillovers.
Foreign linkage effect;	This relates to export spillovers. Domestic firms can learn to export from MNCs
Training effect	Occurs if there are movements of highly skilled personnel from MNCs to domestic firms, these employees may take with them knowledge which may be usefully applied in the domestic firm

However in the interim, Gorg and Greenaway (2009) have introduced two new (sub) types of FDI spillovers related to the training effect:

- Direct spillovers through complementary workers; and
- Indirect mechanism when workers move and transfer technology between foreign and domestic firms.

Gorg and Greenaway also highlighted that the absorptive capacity of domestic firms is a key factor determining whether they benefit from FDI spillovers and that spillovers predominantly benefit companies in close proximity to foreign owned affiliates. The absorptive capacity of host economies is related to technological activities and the availability of skilled labour. They also noted that what little work has been completed on trade related investment measures has failed to establish a direct link between such measures and the transfer of useful technologies to domestically owned firms.

Knell and Rojec (2011) state that empirical analysis of knowledge spillovers from FDI offer mixed results, the reason for the lack of evidence are of both a substantive and methodological nature.

The main substantive reasons relate to:

- The fact that in a number of cases there are really no (or even negative) spillovers because MNCs are efficient in preventing leakages;
- No or deficient consideration of firm heterogeneity in econometric models;
- Concentration on horizontal (intra-industry) spillovers; and
- The fact that often the necessary preconditions for spillovers are lacking in the host countries.

Recent econometric literature has introduced a number of additional determinants of FDI spillovers, which help overcome the aforementioned deficiencies, including:

- Firm heterogeneity;
- Differentiation between vertical (inter-industry) and horizontal (intra industry) spillovers; and
- Host country absorptive capacity for knowledge spillovers.

In summary, although the methodology for the capture of FDI spillovers is emerging, the actual ability to develop spillovers is constrained by two key variables:

- The absorptive capacity of indigenous firms (conditional on their proximity/interaction with FDI investments and their own technical sophistication); and
- The ability of the MNC to contain leakages of knowledge (i.e protection of Intellectual property and/or key staff).

#### 1.4.2 Internationalisation and Clustering;

The emerging literature has identified a positive relationship between internationalisation and clustering, with sub national authorities taking the lead in the promotion of their clusters as a means of both attracting and retaining foreign direct investment. Evidence from the Far East, including the Du, Lu & Tao Study (2008) states that host countries with stronger public institutions and higher horizontal and vertical agglomerations tend to attract more foreign investments, particularly the build-up of strong business clusters and well established public and educational institutions.

As will be noted in the Benchmarking exercise, successful countries cannot just rely upon the traditional 'silo' approach of cluster development to attract and retain FDI, rather they have to incorporate a flexible approach which promotes interconnectedness (and knowledge transfer) between FDI and indigenous companies through either vertical (supply chain) or horizontal (mainly research sharing) linkages.

#### 1.4.3 Tax Simplification

Tax simplification/reduction (and analysis of the impact of subsidies) is an area of considerable academic interest. However, there is a paucity of evidence as it is difficult to measure effective tax (and impact of subsidies) rates between countries, never mind at the regional or city level.

Government subsidies to foreign investors will increase inward foreign direct investment, at the margin, presuming that they are not matched by other governments. Given the existence of spillover benefits to FDI, targeting subsidies to potential foreign investors would seem to be an advisable policy, however extending such subsidies is not necessarily an element of best practice. For one thing, if subsidies are linked to investing in 'have not' locations, the spillover benefits to the host economy are likely to be severely compromised. In addition, the fiscal burden of significant investment subsidies implies either that taxes must be increased to pay for the subsidies or that government expenditures in other areas, including possible expenditure expenditures on public services, must be reduced. Therefore in the longer term, subsidies cannot compensate for an inability to anchor firms in a country. On balance, national, but particularly sub national, units might be more effective in attracting FDI and in leveraging the benefits of FDI and outward FDI, by emphasising governance and infrastructure improvements (particularly the use of Clusters), rather than fiscal subsidies to foreign investors.

Popular opinion, as well as anecdotal evidence suggests that lowering tax rates should encourage increased investment. However, difficulties in accurately measuring effective tax rates, particularly at the sub national level and for specific industries and companies, limit rigorous empirical examination of the relationship between tax rates and foreign investment. Furthermore, since taxes help fund the provision of public goods and since the supply of public goods encourages investment, the full impact of lowering tax rates might be to discourage investment (particularly at the regional level), if the supply of public goods is diminished as a consequence. Finally, the literature clearly cites that there are clear competitive benefits related to tax simplification, in that it has the potential to attract emerging companies who are interested in growth and investment (rather than those simply seeking a tax



haven) and provides a 'business friendly impression' by decreasing the restrictions to business. Although not specifically related to taxation policy, there is a growing body of evidence related to 'perceived business friendliness of countries' and how this is best exploited.

#### 1.4.4 Rationale/Impact of Re-Shoring.

The recent recession has instigated a significant economic realignment in the terms of trade between East and West. Where once China and much of the Far East was guaranteed to have an absolute cost advantage against locations in Europe and North America, these 'costs' have increased.

A number of American reports have cited an increased reticence on the part of American companies to locate 'high tech functions in the Far East. This trend has been further compounded by other financial factors encouraging 'Reshoring' which is highlighted in the table below:

Factor	Strategy
Transportation/Energy	Rising transportation fuel prices have made long supply chains costlier and will further favour local production if this trend persists as expected.
Talent	The gap in higher education/training between the US and some emerging economies has narrowed, but the US workforce will likely remain competitive for the foreseeable future.
Currency	The depreciation of Western currencies have helped make the US (and much of Europe) a lower cost option for exports for some countries. Local production for local markets can help hedge currency volatility.
Labour Costs	Wages in China and other low cost economies are forecast to keep rising, yet the US (and Europe) wage premium is still expected to be relatively high through 2016.
Availability of Capital	As banks resume tightening of credit standards, companies are re-adjusting their appetite for tying up credit in their supply chain.
Demand	GDP per capita in the US and Europe is expected to continue to dwarf that of emerging markets through 2016, boding well for manufacturers wishing to sell to these markets.

In addition, to these 'financial costs' a number of countries are increasing barriers through investment protectionism and foreign ownership restrictions which have a negative impact on FDI. This is particularly true in the Far East, where recent research by PWC (2012) has identified the enhanced use of the following interventions aimed at technology transfer:

- Government procurement focused on forced technology transfer: In 2007 China rolled out its indigenous innovation product accreditation scheme – a list of products invented and produced in China that would receive preferences in Chinese government procurement. To be eligible for preferences, products would have to contain Chinese proprietary intellectual property rights;

- Market access Tied to Forced Transfer Technology – In the catalogue for the Guidance of Foreign Investment Industries joint ventures with foreign firms have to be approved and technology transfer agreements reached within joint venture contracts must also be submitted for approval; and
- Weak and discriminatory Patent System. The global patent system means that companies that file inventions first have protection from copying. The Chinese patent system is designed to get around this restriction. Under the Chinese patent system, it is extremely easy for a Chinese firm to be granted utility model and design patents. In 2009 these patents constituted approximately three quarters of Chinese patents issued to Chinese owned firms.

The combination of a 'reduced cost structure' and increased barriers to entry into Far Eastern markets according to the literature is enhancing the attractiveness of Europe and North America as locations to invest in and thereby shorten supply chains and service local markets in these two established economic zones.

## 1.5 Emerging best practice in Germany and Republic of Ireland.

At first glance, there seems little of obvious comparison between Germany and the Republic of Ireland (Germany perceived as a Core economy dependent on indigenous High tech investment and the Republic of Ireland as a peripheral economy reliant on Foreign Direct Investment). However the review of literature identified a number of commonalities including:

- A drive towards tax simplification;
- A move towards a more flexible approach to cluster development 'Smart Specialisation' which also has implications for FDI support interventions; and
- The active promotion of in country research capabilities, which also aim to overcome the 'liability of foreignness'.

### 1.5.1 Drive towards tax simplification

The continued centre piece of Ireland's economic development strategy is the attraction and retention of foreign direct investment (mainly high tech US companies). Low levels of corporation tax continue to be of prime importance to the Irish Government, as it attracts financially sophisticated companies and indicates a more laissez faire approach to regulatory control. This is substantiated in a recent article in *The Economist* (Jan 5<sup>th</sup> – Fitter yet fragile), states that:

*“ Helped by a low corporate tax rate of 12.5%, Ireland continues to attract foreign direct investment (FDI), especially from American firms and particularly in pharmaceuticals, information technology and financial services. The number of new FDI projects in 2012 has been similar to that in 2011, itself the highest for a decade.*

*The foreign presence is now a towering one, so much so that Irish exports actually exceed the value of GDP. The contribution from net trade – exports less imports – has more than offset falls in domestic demand, which remains traumatised by excessive debt (households owe 209% of disposable income).”*

Although Germany continues to have higher effective tax rates than the average of the old EU15 it has a lower effective tax burden than in Japan, Canada and the USA, and therefore indicates a desire by the Government for greater transparency and tax reduction.

### 1.5.2 Cluster Development/Smart Specialisation

It is well understood that certain industries have a tendency to cluster in particular locations, with the objective of gaining from the benefits (agglomeration economies) of being in close proximity to companies delivering the same goods or services or co-location with companies within their supply chain. These benefits (or positive externalities) are typically categorized as being either pecuniary or technological. Positive pecuniary (financial savings) externalities often relate to the presence of a specialized labour market (potentially providing a pool of trained labour, thereby lowering training budgets and/or recruitment of staff) or connected to forward and backward linkages (supply chain). These forward and backward linkages relate to the local sourcing of materials and/or services and bring with them reduced transportation and coordination (locating suppliers) costs. Technological externalities mainly relate to knowledge spillovers, which are viewed as the primary benefit of the cluster (Maskell et al., 1998).

The Republic of Ireland, in common with Germany, has continued to focus its FDI activities on clear cluster initiatives. This is highlighted in the paper on Tight Clusters or Loose Networks which examines the situation in which foreign direct investment is initially attracted to a region as a result of public policy initiatives rather than the existence of sophisticated local capabilities, however through time and the concept of cumulative causation, the clusters are strengthened and 'anchor' the company to the country. Giblin and Ryan (2012), in common with Driffield (2010) compares the importance of clusters both as a means of attracting FDI and also sustaining clusters. In short, the attraction of high tech FDI can add to the vitality of R&Di of existing clusters and bring spillover benefits to both indigenous and FDI companies.

Although the German Cluster Campaign is still utilised, there has been a movement away from the strict sectoral approach, towards Smart Specialisation. In Germany this is a combination of specific sectoral assistance and continued access to more generic interventions (i.e. for bespoke sector specific interventions, companies can go to Max Planck Centres for fundamental research, the Fraunhofer Institutes for Applied research and Sectoral incubators/network groups for direct assistance). The basis of the approach is the belief that support for innovation is fundamental to all economic development and the aim is to encourage shared learning and collaboration across key sectors. The Smart Specialisation approach is being utilised as a key tool in attracting inward investment of high tech companies.

Emerging literature in the Republic of Ireland has also highlighted the move by the Irish Government from a standard 'siloes' approach to clusters to that of Smart Specialisation. The Economist Report of 5<sup>th</sup> January 2013, highlighted one obvious problem of a reliance on clusters:

*"Ireland's success in attracting global drugs firms – pharmaceuticals made up half of goods exports in 2011 – means that it is being affected by the 'patent cliff', the expiry of patents on many blockbuster drugs. In 2011 the value of Irish pharmaceutical exports rose by almost 7%, but in the first ten months of 2012 it fell by 3% compared with the same period a year earlier."*

However, this is not just a problem for Irish Clusters.

### 1.5.3 Promotion of in country research capabilities and the 'liability of foreignness'.

The liability of foreignness – cultural proximity is conducive to R&D efforts of foreign affiliates as lower cultural barriers improve market knowledge and the understanding of customer needs and facilitate communication and the exchange of information and knowledge across borders (particularly amongst monoglot English speakers). Until recently, German inward investment primarily came from its 'near neighbours', however the active promotion of its research and development capability has attracted investment from the UK, USA and the Far East.

Ireland on the other hand continues to utilise its shared language affinities with North America who continue to favour it as their choice location in Europe for the location of headquarters and R&D functions. There is an emerging literature related to the development of a cluster related approach to the attraction of R&D in both Germany and the Republic of Ireland.

There is an emerging body of evidence to assert that bodies such as the Fraunhofer Society (which is formed from a number of semi autonomous applied research institutions jointly run by industry and universities across Germany has a number of international offices in the USA, UK Japan, China, Indonesia, Russia and the United Arab Emirates) is using its international presence for the following purposes:

- Advance the level of scientific and engineering knowledge and exploit the innovation potential of competing centres of excellence through local presence and involvement;
- Penetrate new markets for research services;
- Offer wider opportunities for staff development , both in terms of scientific knowledge and an opportunity to encounter other management styles and business cultures, including foreign language and social skills; and
- Continue improvement of problem solving skills through a wider range of projects often based on other market needs and customer requirements.

The Fraunhofer approach has been designed to be a conduit for both German companies to gain access to foreign markets (and to avail of collaborative research opportunities in other jurisdictions without the need for a formal presence) and for foreign companies to familiarise themselves with German research and development and develop ties with German companies, thereby offsetting the liability of foreignness cited earlier in the study.

#### Conclusion

A number of often recommended public policies to attract FDI can be identified in the literature. They include the following six policies:

- Establish and maintain legal and regulatory regimes that protect property rights, create transparent and fair rules of law and minimise the transaction cost burdens and other unwanted consequences of regulation;
- Reduce corporate tax rates or tax simplification
- Weaken or eliminate regulatory review processes applying to foreign investors;
- Eliminate limitations on foreign ownership levels in sensitive industrial sectors;
- The active promotion of a flexible innovation agenda through the use of cluster development and smart

specialisation; and

- Development of out of country research capability to encourage external collaboration.

## 1.6 Methodology for the assessment of Economic Impact

OCO Global reviewed the economic impact assessment of the following organisations across Europe and North America and have concluded that each conforms to the same standard approach:

- UKTI;
- Scottish Enterprise;
- Enterprise Ireland;
- Invest in France;
- Invest in Sweden;
- Florida State; and
- Missouri State.

The benchmarking identified that the following indicators should be addressed

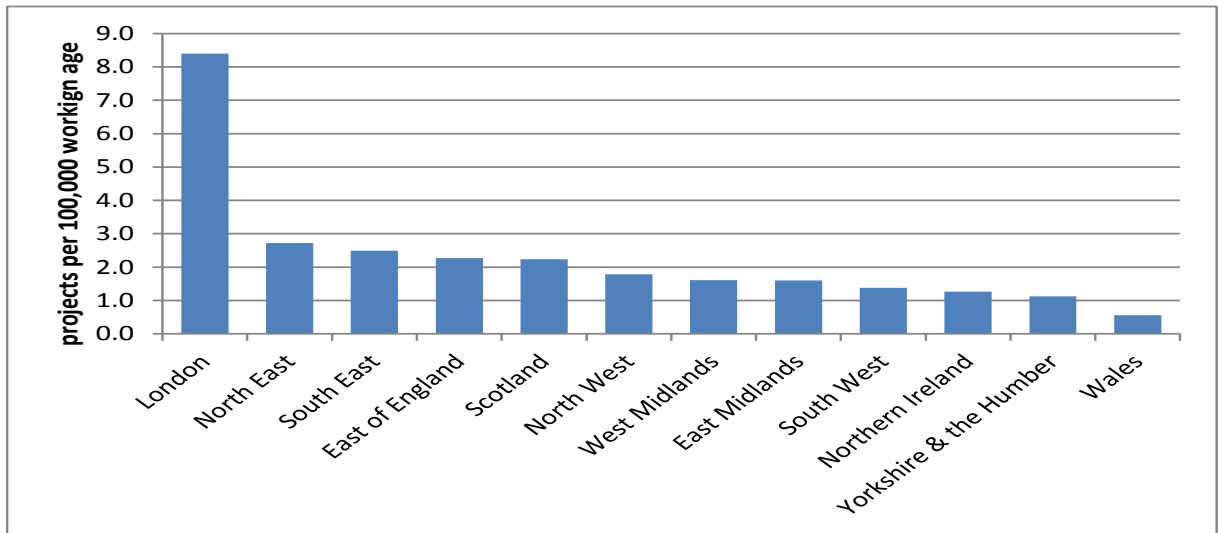
- The average wages of investment jobs relative to the sector/regional average wage;
- The expected productivity of the investment relative to regional/sectoral productivity;
- Cost per job (if supported);
- Impact on Gross Value Added;
- Skills level of jobs created/safeguarded;
- Assessment of investment/improvements in the regional skills base;
- Assessment of impact on Research and Development; and
- Conclusion on direct and wider economic impacts by region (to include multiplier effects).

However, data availability is a significant constraining factor.

## 1.7 Application of Approach

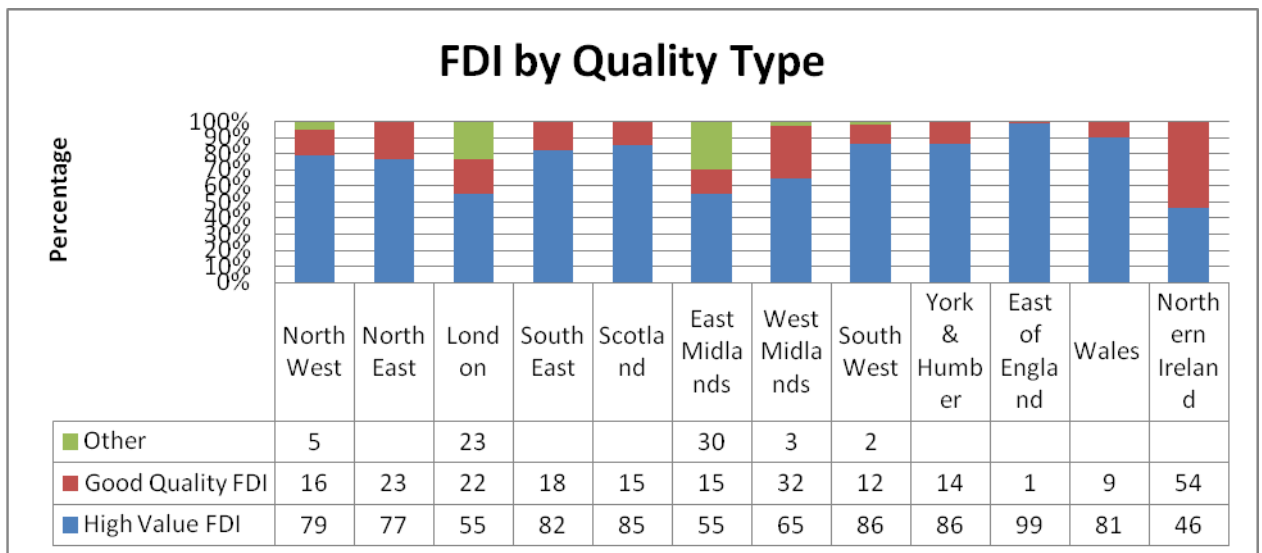
Since May 2011, PA Consulting, OCO Global and the British Chambers of Commerce have been delivery partners to UKTI in the national delivery model. In the year to March 2012, over 1,000 successes were recorded, generating circa 65,000 jobs. The geographic spread of projects highlights the continuing attractiveness of London

The table below illustrates the number of FDI projects per 100,000 working age people:



Source: OCO Global

The table below illustrates the Project by Quality Type:



Source OCO Global

Quality of FDI is a key metric to collect in order to understand performance. A lack of agreed definition of ‘quality’ often constrains this analysis.

The value added of 36 sectors was assessed, covering all the main sectors for ‘greenfield’ FDI. The value added of FDI sectors was evaluated across four main categories:

- R&D intensity;
- Salary levels;
- Productivity; and
- Export Orientation.

The value added of FDI into the UK was used as the basis for analysis. The 36 sectors were classified into 3 levels of value added based on the four aforementioned variables and placed in the table below:

Term	Definition
High Value FDI	Pharmaceuticals, telecom, software and IT services, non automotive transport OEM (mainly boat and train manufacturing), minerals, aerospace, biotechnology and electronic components, business machines and equipment, chemicals, financial services, coal, oil and natural gas, automotive OEM, creative industries, engines and turbines, space defence
Good Quality FDI	Industrial machinery and equipment, food and beverages, automotive components, medical devices and renewable energy.
Other	Plastics and rubber, consumer electronics, healthcare, paper, printing and packaging, building and construction materials, ceramics and glass, business and professional services, real estate, transportation, warehousing and storage, consumer products, metals, leisure and entertainment, wood products, textiles and hotels and tourism

Source: f DI Intelligence (2012)

The table below provides a summary of the findings of the Impact Section:

Conclusions
<ul style="list-style-type: none"> <li>• Governments and Agencies are keen to demonstrate the benefits of FDI;</li> <li>• The Theoretical framework for impact assessments is similar to accepted evaluation guidance;</li> <li>• Asking the right questions at 'landing stage' is key to determining likely impact;</li> <li>• Counting the number of projects and expected jobs has traditionally been enough detail for reporting performance;</li> <li>• With increased competition for public finances, OCO sense a greater appetite to consider wages, additionality, GVA and spillover impacts of FDI to evidence continued resourcing; and</li> <li>• However, this approach does not presently address the issues of related to capturing the wider knowledge spillover effects</li> </ul>

## 1.8 Overall Conclusion

The literature review reflects the emerging realities of the post financial crisis world, where Global FDI fell by 16% in 2008 and in 2009 worldwide output contracted for the first time in 60 years and FDI declined a further 40%.

Although there has been a world-wide contraction, the Crisis has led to a realignment in the terms of trade between East and West and this is reflected in the academic literature which has emerged over the last three years, including:

- A heavy orientation on the emerging priorities for China and the Far East; and
- The continuing underperformance of Western economies and the implications on World Trade.

However the literature review has identified the following issues:

- Recognition of the continuing validity of a significant proportion of the Harris and Li Literature Review, particularly in relation to:
  - internationalisation models – where has been no emerging literature; and
  - Market failures – no new market failures, rather an enhanced importance attached to:
    - Financial barriers;
    - Appropriability failures;
    - Institutional Failure Network; and
    - Systemic Failure – bounded rationale and path dependency.
- Confirmation that there has not been any significant developments in the assessment of impact for internationalisation activities;
- Emerging trends further investigated (including key findings) were:

Trend	Description
Links between absorptive capacity (for innovation), spillovers and FDI	<p>Two new (sub) types of FDI spillovers related to the training effect identified, including:</p> <ul style="list-style-type: none"> <li>• Direct spillovers through complementary workers; and</li> <li>• Indirect mechanism when workers move and transfer technology between foreign and domestic firms.</li> </ul> <p>Gorg and Greenaway highlight that the absorptive capacity of domestic firms is a key factor determining whether they benefit from FDI spillovers and that spillovers predominantly benefit companies in close proximity to foreign owned affiliates.</p> <p>Although the methodology for the capture of FDI Spillovers is emerging, the actual ability to develop spillovers is constrained by two key variables:</p> <ul style="list-style-type: none"> <li>• The absorptive capacity of indigenous firms (conditional on their proximity/interaction with FDI investments and their own technical sophistication); and</li> <li>• The ability of the MNC to contain leakages of knowledge (i.e. protection of intellectual property and/or key staff).</li> </ul>



Trend	Description
Internationalisation and Clustering	<p>Continued use of Clusters as a tool to attract FDI.</p> <p>Mainstreaming of Smart Specialisation Approaches into the attraction and retention of FDI.</p> <p>Innovative use of Universities/Research Centres (Fraunhofer Model) to develop working relationships with business clusters in target markets.</p>
Tax simplification	<p>Tax simplification/reduction (and analysis of the impact of subsidies) is an area of considerable academic interest. However, there is a paucity of evidence as it is difficult to measure effective tax (and impact of subsidies) rates between countries, never mind at the regional or city level.</p> <p>Policies aimed at tax simplification can be as effective as tax reduction.</p>
Rationale/Impact of Re-Shoring	<p>A number of American reports have cited an increased reticence on the part of American companies to locate 'high tech' functions in the Far East. This trend has been compounded by the following financial factors encouraging 'Reshoring', including: transportation/energy costs, access to talent, labour costs, availability of capital and domestic demand.</p>

## 1.9 Going Forward

We believe that the literature review has identified a number of issues which may be pertinent to SE/SDI and which should be subject to further consideration :

- Opportunities for re-shoring of activities;
- Identification and measurement of spillover effects;
- Mainstreaming of 'Smart Specialisation Approaches' into the attraction and retention of FDI;
- Implications of tax simplification rather than tax reduction at the regional level; and
- Innovative use of Universities/Research Centres (Fraunhofer Model) to develop working relationships with business clusters in target markets.

## 2 BACKGROUND

Scottish Enterprise (SE) and Scottish Development International (SDI) appointed RSM Tenon to undertake a literature review of current and emerging trends in the academic literature related to inward investment. The study updates the previous analysis undertaken in 2009 and covers the period 2009 to date. The objective of the study is to provide an overarching analysis of the emerging literature as to how inward investment/foreign direct investment (FDI) and outward foreign direct investment (outward FDI) can contribute to overall economic growth.

### 2.1 Terms of Reference

The study is expected to focus on the following areas of interest:

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- New trends or factors emerging in inward investment and outward FDI not covered in previous research;
- Factors affecting an inward investment decision at the macro level (e.g. skills availability);
- Factors affecting an inward investment decision at the micro level (e.g. corporate strategy);
- Identifying and analysing the themes important in investment decisions;
- Reviewing literature on impact assessments, including:
  - The quantitative and qualitative effects of inward investment and outward FDI;
  - Looking at both the 'what' (i.e quantitative) and the 'how' (qualitative) aspects;
  - Analysis of the factors driving inward investment economic impacts;
  - Analysis of the methodologies used in economic impact assessments; and
  - How public sector support in this area is monitored and evaluated.

### 2.2 Methodology

The major focus of this report is to identify and summarise the empirical literature dealing with the determinants of FDI and outward FDI, as well as perceived spillover efficiency benefits (quantitative and qualitative aspects). The following section discusses the methodology underlying the data gathering and analysis.

A Project Initiation Meeting was held with Scottish Enterprise's Economic Research Team in August 2012 to address the following issues:

- Confirmation of existing literature sources; and
- Agreement as to the timing and location of an interim research findings workshop.

To inform the interim research findings workshop, RSM Tenon augmented the initial information received from Scottish Enterprise through the following process:

- Review of the extensive (academic) bibliography already created for earlier studies on internationalisation, inward investment and impact assessment which have been carried out for:

- Scottish Enterprise;
  - Forfas;
  - Invest NI; and
  - UKTI.
- conduct a full search of the UK and international evidence base. The technical framework and decision rules for including literature in the scope of the search are detailed in the table below:

<b>(BARRIER OR BARRIERS VALUE\$) ADJ (INWARD INVESTMENT\$ OR INWARD INVESTMENTS\$)</b>
<b>(BARRIER OR BARRIERS VALUE\$) ADJ (INTERNATIONALISATION\$)</b>
<b>(ENABLER OR ENABLERS VALUE\$) ADJ (INWARD INVESTMENT\$ OR INWARD INVESTMENTS\$)</b>
<b>(ENABLER OR ENABLERS VALUE\$) ADJ (INTERNATIONALISATION\$)</b>
<b>(IMPACT ASSESSMENTVALUE\$) ADJ (INWARD INVESTMENT\$)</b>
<b>(IMPACT ASSESSMENTVALUE\$) ADJ (INTERNATIONALISATION\$)</b>
<b>KEY:</b>
<b>\$ TRUNCATION SYMBOL, IDENTIFIES ALL TERMS BEGINNING WITH A WORD STEM</b>
<b>ADJ SEARCHES FOR TERMS APPEARING NEXT TO EACH OTHER</b>
<b>ADJ3 SEARCHES FOR TERMS APPEARING WITHIN 3 WORDS OF EACH OTHER</b>
<b>OR SEARCH TERMS ARE COMBINED TOGETHER IN A LARGE SET OF RESULTS</b>

We filtered the searches in order to produce a manageable but robust body of evidence to process in the time available. Focusing was achieved by:

- Removing papers in languages other than English;
- Restricting publications to those since 2005; and
- Removing letters, editorials, comments and other non-research records.

The resources searched included large bibliographic databases which record research from a range of disciplines and included the following:

- Ingenta Journals (full-text delivery service offers a single point of access to a fast-growing range of full text electronic journals from leading publishers). More than 1,200,000 full text articles are currently committed to ingenta Journals from over 2,700 journals;
- Econlit (international economic literature covering journals and other publications, with more than 200,000 records);
- OAISTER (an open-access portal giving access to emerging literature, with around 22 million records); and
- REPEC (database of working papers in economics, with some 750,000 records).

### 2.2.1 Interim Findings Workshop

An interim findings workshop was held in the RSM Tenon Office in Belfast on 25 October 2012, the following were in attendance:

- Jonathan Slow, SDI;
- Elizabeth Pickett, Scottish Enterprise (via teleconference)
- Sheila Perry, Scottish Enterprise (via teleconference);
- Keith Wilson, RSM Tenon;
- Andrew Webb, OCO Global; and
- Chris McCullagh, RSM Tenon.

Presentations of interim findings were delivered by:

- Keith Wilson, RSM Tenon; and
- Andrew Webb, OCO Global.

(Copies of the presentations are contained in Appendix B).

Subsequent to the delivery of the presentations the following points were noted

- Recognition of the continuing validity of a significant proportion of the Harris and Li Literature Review (the subsequent Literature Review needs to confirm those areas which have remained unchanged and also highlight emerging trends);
- Confirmation of the OCO Global/UKTI approach to impact assessment
- Emerging trends which the Steering Group wished to be further investigated included:
  - Links between absorptive capacity (for innovation) and FDI;
  - Internationalisation and Clustering;
  - Tax Simplification;
  - Rationale/Impact of Re-shoring; and
  - Emerging best practice in Germany and Republic of Ireland
- Interview with Colin Wren of University of Newcastle.

### 2.2.2 Scanning and Report writing

Arising from the Interim Findings Workshop, RSM Tenon undertook a second round of scanning of relevant documents which led to the development of the following report.

The Report will have the following structure:

- Commentary on the existing proposition;
- Emerging Literature;
- Benchmarking Exercise;
- Methodologies for assessment of economic impact; and
- Conclusions

### 3 COMMENTARY ON THE EXISTING PROPOSITION

#### Summary of Section

Drawing reliance on the Internationalisation Evidence Review undertaken by Scottish Enterprise in 2009, this section assesses the key findings of that earlier study and identifies a number of emerging themes developed since 2009 (and reflecting changing economic priorities and strengths). The overall conclusion of this Section is that the literature related to internationalisation models has remained unchanged. There has been some emerging literature related to the following three themes:

- The determinants of Internationalisation;
- Key market failures and
- Knowledge spillover effects.

#### 3.1 Background

The starting point for this literature review is the comprehensive study undertaken by Professor Richard Harris and Dr Cher Li in their 2009 Internationalisation Evidence Review. The following tables identify the key findings of this report and confirm whether there has been any subsequent research into the following key areas since 2009, including:

- Internationalisation Models;
- Determinants of Internationalisation;
- Impact of Internationalisation;
- Models of Outward FDI;
- Exporting/Outward FDI;
- Impacts of Outward FDI:
  - Positive Impacts/benefits;
  - Negative Impacts.
- Key Market Failures; and
- Internationalisation, Innovation and Knowledge Spill overs.

### 3.2 Internationalisation Models

The table below provides a commentary as to the emerging literature in relation to Internationalisation models:

#### Harris and Li Findings

Incremental Models versus Born Global

**Traditional Incremental Models** - companies enter new markets incrementally i.e exhausting domestic/closely aligned foreign markets but ultimately move into other 'foreign markets' as their capabilities expand. The speed of internationalisation is dependent on the characteristics of the firm and the market/s it seeks to enter. Key findings are:

- Uppsala Model – internationalisation as important and dependent on speed to accumulate knowledge through exposure
- Johanson and Vahlne (1990) support the Uppsala Model and add that a firm's age when entering new markets determines its success

**Early Internationalisation / "Born-Global" Models** – this model states that some companies are simply born global i.e. are able to enter new markets at an early stage of their development. Key findings are:

- Increasing number of organisations are 'born global' and the underlying fundamentals are similar to those identified under the incremental model;
- New market conditions, technological developments and global networks have made early internationalisation of firms possible; and
- At a micro level the characteristics of a firm, for example, possessing particular assets or previous experience from new managers can also lead to early internationalisation.

#### Commentary

From a review of relevant literature, no new analysis has emerged.

### 3.3 Determinants of internationalisation

The table below provides a commentary as to the emerging literature in relation to the determinants of internationalisation:

#### Existing Research

The Harris and Li research identified the following generic determinants of internationalisation, including: Size, absorptive capacity, innovation, sector effect, industrial/spatial agglomeration and exchange rates. The Harris and Li research (from Rialp et al Model) has identified the following determinants as influencing the internationalisation process of an early Internationalising Firm, including:

- Firm intangible resources;
- Environmental Factors;
- Complex International Capacities; and
- Distinctive Strategic Features.

#### Commentary

Recent research by Steven Globerman and Victor Zitian Chen has identified a number of additional determinants of internationalisation, which will be subsequently discussed in Section 4.1.

### 3.4 Microeconomic impact of internationalisation

The table below provides a commentary as to the emerging literature in relation to the microeconomic impact of internationalisation:

#### Existing Research

The Literature Review identified the following (microeconomic) impacts of internationalisation, including:

**Productivity Impact of Exporting** –At the aggregate level microeconomic studies deliver several theoretical links between trade and productivity growth. Specifically, the Melitz (2003) model illustrates that increasing exposure to trade leads more productive firms to participate in exporting while less productive firms remain domestic., thus investment in exporting firms will lead to aggregate productivity gains.

**Exporting & Intra-firm Productivity Growth** – Learning by exporting theory hypothesis suggests that an acceleration of productivity growth follows the entry of export-orientated firms. Although most theoretical models have cast doubts as to the validity of links between exporting and productivity, firms can improve productivity through exporting but it is a gradual process involving assimilating and absorbing information. Crespi et al (2008) found that firms learn more from clients when expanding

internationally or through exports which eventually increases productivity. Damijan et al (2005) suggests learning through exporting depends on both the capacity of the firm to learn (absorptive capacity) and the technological sophistication of the target market.

#### Commentary

There has been increased analysis as to the impact of knowledge spillovers as a result of exporting on productivity which will be subsequently discussed in Section 4.1.2.

### 3.5 Outward FDI

The table below provides a commentary as to the emerging literature in relation to Outward FDI

#### Existing Research

Faeth (2009) reviewed nine theoretical models on the subject:

- early studies of determinants of FDI;
- determinants of FDI according to the neoclassical trade theory;
- ownership advantages as determinants of FDI;
- aggregate variables as determinants of FDI;
- determinants of FDI in ownership, location and internalisation advantage;
- determinants of horizontal and vertical FDI;
- determinants of FDI according to the knowledge capital model;
- determinants of FDI according to diversified FDI and risk diversification models; and
- policy variables as determinants of FDI.

The following three were viewed as being significant:

- Proximity-Concentration/Horizontal Models – under horizontal FDI relocating production is demand driven. Foreign market size, trade barriers and transport influence the decision to go international;
- Factor-Proportion/Vertical DFI Models – focusing on the supply side where firms increase profitability by fragment production – producing new goods in foreign markets. This vertical FDI flow concentrates on cheaper production – in terms of resources or human capital. Firms originating in countries abundant in capital relocate to countries richer with endowed labour; and
- Knowledge-Capital FDI Models – Markusen and Associates – integrate horizontal and vertical factors where firms use horizontal FDI where their countries are similar in terms of growth, whilst vertical FDI is used to concentrate in small countries where labour is cheap and production costs are lower.



**Commentary**

There has been no significant additional analysis related to models of outward FDI. In addition, there continues to be no single model that depicts a holistic approach to FDI, rather reliance must continue to be placed on a combination of the models cited above.

**3.6 Exporting/Outward FDI**

The table below provides a commentary as to the emerging literature in relation to Exporting/Outward FDI:

**Existing Research**

The literature review identified the following impacts of exporting/outward FDI, including:

**Substituting relationship** – predicted by Mundell (1957) – movement of capital associated with FDI flows will arrive at equilibrium where factor and product prices are similar to free trade equilibrium. FDI flows will create higher capital intensity. Firms have to make an exclusive choice between FDI or exporting according to theoretical models of internationalisation;

**Complementary relationship** – empirical evidence suggests global markets serve both exports and FDI stating that firms increase their commitment on an incremental basis by increasing their knowledge and therefore decreasing their risk in new foreign markets. Evidence shows that internationalising firms export to their target market before direct investment and outward FDI may bring a higher level of exports from the parent firm to foreign markets;

Nuchum et al. (2001) suggest that outward exports and FDI in the U.K. moved parallel to each other and high performance of UK MNEs could not be achieved without strong **ownership advantages** possessed by UK firms allowing them to compete successfully against domestic firms and other rivals in global markets; and

Home countries exports increase to the host country which may offset the initial reduction in overall exports, therefore, **FDI complements a home countries' exports** on a long time scale.

**Commentary**

Emerging literature such as the following Drivers of Intensive and Extensive Margins of Exporting and Foreign Direct Investment confirms existing literature in particular:

Cross country differences in the value of exports at product level are driven by the number of exporters as well as the average values per exporter; and

Growth in exports depends on the duration of export relationships and the number of firms entering new markets – with short relationships contributing little to export growth.

### 3.7 Positive Impacts of Outward FDI

The table below provides a commentary as to the emerging literature in relation to the positive impacts of Outward FDI:

#### Existing Research- Positive impacts/benefits of Outward FDI

The research identified the following benefits of outward FDI, including:

**Increased revenues from market expansion** – Outward FDI gives access to new consumer markets for existing products. Production can take place both domestically (typically knowledge intensive products) or abroad (typically low level assembly);

**Strengthened relations with key clients** - Some firms invest overseas following the footsteps of their clients. Stronger relations to the client may trigger the development of new products and services via innovation. Furthermore, going abroad can be the only option for indigenous suppliers when a large international customer leaves the home market. In such cases going abroad helps sustain indigenous operations, partially at least;

**Cost savings on labour and input costs** – Outward FDI gives expanded access to markets for both productive resources and labour. Better access can improve productivity or profitability of indigenous operations, improving international competitiveness. Cost savings from international investments have been crucial for sustaining the operations of a number of indigenous companies in the medium to long run;

**Source new talent and technologies** – Outward FDI can be undertaken solely for the purpose of accessing specific knowledge or technology not available in the home market. If such knowledge or technology is successfully repatriated, it can improve employment, productivity and profitability; and

**Repatriated profits** - Profits generated abroad can be repatriated home and used for investment or distributed as dividends. While most of the interviewed companies have stated profit repatriation as their goal, it takes time for foreign operations to become profitable. Profits earned may be used to finance organic growth of the foreign operations.

#### Commentary

Emerging literature on the impact of Outward FDI is limited, but does focus on knowledge spillovers which will be discussed subsequently in Section 4.1.2.

### 3.8 Negative Impacts of Outward FDI

The table below provides a commentary as to the emerging literature in relation to the positive Impacts of Outward FDI:

#### Existing Research – Negative impacts of Outward FDI

**Increased risk exposure** - Operating abroad subjects the company to new sources of country specific risks. If not managed, it may increase the volatility of earnings;

**Technology poaching** – Core competencies of companies may be stolen by foreign competitors. Foreign competitors can then challenge the company both in the foreign but also the home market. This cost has been reported as relevant for both manufacturing and IT companies;

**Start up costs abroad** - Start up costs abroad are large and foreign establishment is risky. The emergence of new business risks can be costly for Irish companies without prior experience with Outward FDI.

**Higher HQ overheads** - Foreign establishment in almost all cases increases headquarter overheads. If not controlled, higher costs of doing business at home can jeopardise the viability of foreign operations;

**More demand for intermediation** - Going abroad may increase the demand for downstream and/or upstream intermediation services, such as supply or distribution. Furthermore, operating abroad may be linked to a change of the existing supply or distribution networks;

**Transportation costs** - Foreign investment increases transportation costs. Where this is an issue (e.g. countries with poor transport connections), the parent company stands to lose; and

**Loss of local network and creation of new ones** – Outward FDI involves discontinuing relations with existing networks such as suppliers and distributors. Concurrently new networks must be created, which is costly and risky in terms of contracting.

#### Commentary

Due to the rise of the Far Eastern Markets, there has been a significant increase in analysis as to the impact of transportation costs and technology poaching (particularly in recent American literature). This is assessed in Section 4.1.1.

### 3.9 Market Failures

The table below provides a commentary as to the emerging literature related to market failures for FDI and outward FDI:

Type	Description
Imperfect information	Firms using inaccurate or incomplete information to assess costs and benefits of international production.
Asymmetric information	Costs of acquiring information make it more available to some more than others leading to adverse selection and/or moral hazard
Financial barriers	Firms without sufficient collateral or track record have less access to finance.
Missing markets	There is no market for externalities, public good elements, extreme cases of asymmetric and imperfect information
Appropriability failure	Problems with the enforceability of property rights, especially over knowledge and technology
Barriers to entry and exit – Sunk costs	Irreversible fixed costs of internationalisation result in entry and exit being costly undertakings.
Institutional failure – Government- public good argument	In situations where the government has a comparative advantage in supplying a good or service (usually information)
Institutional failure – networks – Group formation	Networks may not possess the right portfolio of skills, information and knowledge and membership rules may exclude some firms
Systemic failure – bounded rationality and path dependency	Lead firms to make sub-optimal choices of technology to which they may become locked in.
<p><b>Commentary</b></p> <p>We have reviewed the emerging literature and conclude that the range of market failures has remained the same, however there has been an increase in importance of the following: <b>Financial barriers, Appropriability failures, Institutional Failure Network and Systemic Failure – bounded rationale and path dependency</b>. Although the generic definitions of these four failures have remained constant, the rise of Far Eastern economies has led to an increase in the discussion of their impacts, due to both the complexity of networks and increased financial/political barriers to trade. Section 4.1.1. provides an overview as to the implications of each of these market failure in the Far Eastern markets.</p>	

We have reviewed the market failures against Scottish Enterprise's Rationale for Public Sector Interventions and confirm that all of the above conform with the efficiency rationale for public assistance, i.e. to ensure the achievement of economic objectives by addressing inefficiencies in the market

### 3.10 Internationalisation, Innovation and Knowledge Spillovers

The table below provides a commentary as to the emerging literature related to market failures for FDI and outward FDI:

Existing Research
<p>The main conclusions of the Harris and Li Literature review are the importance of intangible assets, knowledge, absorptive capacity and thus overall productivity enhancements, as being necessary not only to overcome barriers to entering overseas markets, but also to ensure that the benefits to the home economy are sustainable and thus long standing.</p> <p>When a firm internalises, it must have sufficient resources and capabilities through absorbing new knowledge to overcome the initial (sunk) costs of competing in international markets. It is to be expected that the development of absorptive capacity will be a necessary condition for the successful exploitation of new knowledge gained in global markets. The speed and ability to accumulate knowledge through exposure to overseas markets will then determine the subsequent pace of internationalisation, as it positively feeds back to decisions to commit resources for future activities in foreign markets.</p> <p>The literature also shows that firms that are early to internationalise (born global firms) also must possess distinctive firm specific assets. Thus both incremental and born global firms are subject to the overarching assumption of the importance of resources and capabilities, as crucial factors determining the process of business internationalisation; a firm's intangible resource base (e.g. organisational, technological, relational and human capital resources) is likely.</p>
Commentary
<p>There has been significant additional analysis in terms of knowledge spillover effects which will be discussed in subsequently in Section 4.1.2.</p>

3.10.1 Conclusions

The table below provides a summary of the areas in which there has been emerging literature:

Key Issue	Emerging Literature
Internationalisation Model	There has been no significant emerging literature related to this topic.
Determinants of Internationalisation	Recent research by Steven Globerman and Victor Zitian Chen has identified a number of additional determinants of internationalisation, which will be subsequently in Section 4.1.
Impact of Internationalisation	There has been increased analysis as to the impact of knowledge spillovers as a result of exporting on productivity which will be subsequently discussed in Section 4.1.2.
Models of Outward FDI	There has been increased analysis as to the impact of knowledge spillovers as a result of exporting on productivity which will be subsequently discussed in Section 4.1.2.
Exporting/outward FDI	There has been increased analysis as to the impact of knowledge spillovers as a result of exporting on productivity which will be discussed in Section 4.1.2.
Impacts of Outward FDI	Due to the rise of the Far Eastern Markets, there has been a significant increase in analysis as to the impact of transportation costs and technology poaching (particularly in recent American literature). The implications of this will be discussed in Section 4.1.1.
Key Market Failures	<p>We have reviewed the emerging literature and conclude that the range of market failures has remained the same, however there has been an increase in importance of the following four:</p> <ul style="list-style-type: none"> <li>• Financial barriers;</li> <li>• Appropriability failures;</li> <li>• Institutional Failure Network</li> <li>• Systemic Failure – bounded rationale and path dependency.</li> </ul> <p>Although the generic definitions of these four failures has remained constant, the rise of Far Eastern economies has led to an increase in the discussion of their impacts. The implications of this will be discussed in Section 4.1.1.</p>

Internationalisation, Innovation and Knowledge Spillovers	There has been significant additional analysis in terms of knowledge spillover effects which will be discussed in Section 4.1.2.
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## 4 EMERGING LITERATURE

### Summary

Following on from the Review of the Harris and Li Study, this section focuses on the emerging literature which is primarily focused around three themes:

- Openness to Foreign Investment and Trade;
- Impact of Spillovers/Technology Transfer; and
- Taxation.

Openness to Foreign Investment and Trade mainly focuses on two themes: increased protectionism/enforced technology transfer in the Far East and the subsequent rebalancing of Global trading terms.

Impact of spillovers discusses improvements in the capture and analysis of knowledge spillovers arising from FDI and outward FDI.

The taxation section discusses the emerging literature related to tax simplification and tax reduction.

In this section, we review the emerging themes identified previously in Section 3, (including: **Determinants of internationalisation** and **Impact of knowledge spillover effects**), before assessing other themes not discussed in the Harris and Li Study, including:

- Openness to Foreign Investment and Trade;
- Impact of Spillovers/Technology Transfer; and
- Taxation.

### 4.1 Determinants of Internationalisation

The following table (based on research carried out by Steven Globerman and Victor Zitian Chen) contextualises the emerging literature related to the determinants of internationalisation:

Category	Specific variables	Commentary
Economic gravity relationships	Geographical proximity Trade values Free trade Agreement Cultural proximity	Harris and Li do not address directly issues of 'economic gravity relationships', which aid trading arrangements on a bilateral basis, rather they focus on the benefits of spatial agglomeration/industry specialisation and in the Rialp Model, the benefits construed from national/international networking (which draw on the concepts of trade values, Free Trade Agreement and Cultural Proximity). This will be discussed in Section 5.5.



Category	Specific variables	Commentary
Macroeconomic conditions	Market size Exchange rate Market size growth Per capita income	<p>The variable most frequently included in the academic literature is the market size of either the host or home country, depending on whether the model focused on FDI or outward FDI. In the overwhelming majority of studies, the market size of the host economy is positively and significantly related to FDI, ie larger economies attract inward direct investment. In the majority of cases, the market size of the home economy is positively and significantly related to outward FDI. That is, larger economies are sources of outward FDI. This latter result reflects the fact larger economies tend to be home to multinational companies. It should be noted, however that the results for outward FDI are less consistent than those for FDI.</p> <p>Harris and Li have also identified how exchange rate variability has a negative impact on exporting, but can be a catalyst on encouraging Foreign Direct Investment in target markets, on the proviso that the market is sufficiently large.</p>
Institutional infrastructure	Socio-political stability Government efficiency Legal protection Corruption	<p>The main conclusion to be drawn is that political stability, protection of property rights, rule of law and a relatively efficient public sector are strong attractors of FDI. So is good infrastructure in the host country, including transportation and communication facilities. Effective public governance is a key factor encouraging inward direct investment.</p> <p>These issues are covered within the Rialp Model, specifically in relation to environmental factors (geographic context and local and international networks) and Distinctive Strategic Features (scope of international strategy).</p> <p>Due to the rise of Far Eastern economies (and in particular China) the issue of legal protection has received an increased priority in emerging literature and will be assessed in 4.1.1</p>

Category	Specific variables	Commentary
Industry characteristics/ Microeconomic conditions	Degree of competition Productivity Trade and Investment openness	<p>The degree of competition and trade and investment openness are well developed in the literature review undertaken by Harris and Li. However, in terms of productivity there are two interconnected concepts: absorptive capacity and innovation. The concept of absorptive capacity is related to the ability of a company to assimilate knowledge and subsequently implement it. When applied to Foreign Direct Investment, companies must be able to comprehend, share and assimilate new knowledge in order to compete and grow in markets in which they have little or no previous experience. Innovation is generally perceived as the major driving force behind internationalisation in conventional theories from the product life cycle models to the new trade models. In line with the notion of absorptive capacity and the crucial role of R&amp;D in developing such capacity exporters need to invest in R&amp;D and training to develop internally by absorbing, assimilating and managing technologies and ideas obtained from foreign markets.</p> <p>We believe that Harris and Li have clearly identified the benefits which accrue to absorptive capacity and how these impact on both innovation and internationalisation activities. However, we believe that there is a gap in the literature in relation to how absorptive incapacity is addressed, that is the process of developing the absorptive capacity of firms (and wider institutions). This will be addressed in Section 4.1.2.</p>
Physical infrastructure	Transportation Electricity Telecommunications	These are covered within the Rialp Model, specifically environmental factors and firm level intangible resources.
Openness to foreign investment	Investment restrictions Trade related aspects of intellectual property matters Foreign investment promotion agencies	These are covered within the Rialp Model, specifically environmental factors and firm level intangible resources.
Openness to international trade	Trade to GDP ratio Tariff and other barriers	The Harris and Li Study does not provide sufficient analysis as to the importance of issues such as subsidies, tariffs and the role of subnational promotional agencies. These issues will be addressed in Section 4.1.1

Category	Specific variables	Commentary
Financial markets	Interest rate Stock market capitalisation Investment Quality	The impact of interest rates and stock market capitalisation are covered within the Rialp Model, specifically environmental factors and firm intangible resources.  However there has been little discussion as regards the determinants of investment quality.
Labour markets	Unit labour costs Skill endowment/education	The evidence linking labour force characteristics and FDI is quite consistent. Specifically, foreign direct investment is attracted to host countries possessing a skilled and educated workforce. On the other hand, higher unit costs of labour discourage inward foreign direct investment, although unionisation, per se is not linked consistently, either positively or negatively to FDI. R&D capabilities, as well as an active innovation system more generally, attract foreign direct investment to host countries.  These are covered within the Rialp Model, specifically environmental factors and firm intangible resources.
Technological capabilities	R&D activities Intangible Capital	This relates to the absorptive capacity of the firm (or associated institutions) and will be subsequently examined in Section 4.1.2.
Taxes	Corporate tax rate Other taxes (direct and indirect)	The impact of taxation on investment decisions was viewed only briefly in the Harris and Li Review. The rise of 'flat tax' countries in Eastern Europe and the continuing importance of corporate tax as a key economic intervention in the Republic of Ireland has meant that there has been a high degree of discussion in the literature regarding taxation. This is reflected in the analysis contained in Section 4.1.3.
Source: Steven Globerman and Victor Zitian Chen		

The above table contextualised the emerging academic literature related to the following issues:

- Openness to Foreign Investment and Trade;
- Impact of Spillovers/Technology Transfer; and
- Taxation.

Each of these will be the subject of further investigation in subsequent section:

#### 4.1.1 Openness to Foreign Investment and Trade

The Golub (2009) paper analyses the extent of restrictions on inward foreign direct investment (FDI) in the service sector in developed and developing countries. Almost all countries impose restrictions on

FDI in services. Several different types of restrictions are considered in the paper: limitations on foreign ownership, screening or notification procedures, management restrictions and operational restrictions. These restrictions on FDI are computed at the industry level and then aggregated into a single measure for the service sector as a whole for 23 developed and 50 developing countries. Notwithstanding the worldwide trend towards liberalisation of restrictions, there remain substantial disparities between regions and individual countries in the severity of restrictions on inward FDI in services. The lowest restriction scores are in Europe and Latin America, whereas East Asia, South Asia and the Middle East have the highest levels of restrictions. The severity of restrictions differs considerably by sector, with electricity, telecommunications, transport and finance most restricted. The paper finds a strong negative correlation of restrictiveness with inward stocks of FDI in services, suggesting that restrictions impede FDI.

The table below identifies the impact of a number of variables in relation to FDI and Outward FDI:

Openness Variable	Relationship to FDI	Relationship to Outward FDI
Investment protection	Negative	Mixed
Foreign ownership restrictions	Negative	N.A
Investment promotion agencies	Positive	N.A
Subsidies	Mixed	N.A
Tariff and other barriers	Mixed	Mixed

Source: Steven Globerman and Victor Zitian Chen

#### 4.1.1.1 Investment protection and Foreign ownership restrictions

The Du, Lu & Tao (2008) article examines the factors that determine the choice of location for FDI for companies. The paper initially discusses the standard social factors including similar law and regulations, language and cultural similarities, quality of life and quality of place etc. however the paper focuses on the role of existing business structures and local institutions. The evidence demonstrates host countries with stronger public institutions and higher horizontal and vertical agglomerations tend to attract more foreign investments. It should be noted that FDI is very much dependent on regional factors, particularly the build-up of strong business clusters and well established public and educational institutions over time. For example, while China's economic miracle is largely the result of significant amounts of FDI; the lion share is attributed to the east coast, only latterly when the cost advantage of the east coast has diminished have other Chinese become attractive to foreign investors.

It is not surprising that investment protectionism and foreign ownership restrictions have a negative impact on FDI. This is particularly true in the Far East, where recent research by PWC (2012) has identified the enhanced use of the following interventions aimed at technology transfer:

- Government procurement focused on forced technology transfer: In 2007 China rolled out its indigenous innovation product accreditation scheme – a list of products invented and produced in China that would receive preferences in Chinese government procurement. To be eligible for preferences, products would have to contain Chinese proprietary intellectual property rights;

- Market access Tied to Forced Transfer Technology – In the catalogue for the Guidance of Foreign Investment Industries joint ventures with foreign firms have to be approved and technology transfer agreements reached within joint venture contracts must also be submitted for approval; and
- Weak and discriminatory Patent System. The global patent system means that companies that file inventions first have protection from copying. The Chinese patent system is designed to get around this restriction. Under the Chinese patent system, it is extremely easy for a Chinese firm to be granted utility model and design patents. In 2009 these patents constituted approximately three quarters of Chinese patents issued to Chinese owned firms.

In response, a number of American reports have cited an increased reticence on the part of American companies to locate 'high tech functions in the Far East. This trend has been further compounded by other financial factors encouraging 'Reshoring' which is highlighted in the table below:

Factor	Strategy
Transportation/Energy	Rising transportation fuel prices have made long supply chains costlier and will further favour local production if this trend persists as expected.
Talent	The gap in higher education/training between the US and some emerging economies has narrowed, but the US workforce will likely remain competitive for the foreseeable future.
Currency	The depreciation of Western currencies have helped make the US (and much of Europe) a lower cost option for exports for some countries. Local production for local markets can help hedge currency volatility.
Labour Costs	Wages in China and other low cost economies are forecast to keep rising, yet the US (and Europe) wage premium is still expected to be relatively high through 2016.
Availability of Capital	As banks resume tightening of credit standards, companies are re-adjusting their appetite for tying up credit in their supply chain
Demand	GDP per capita in the US and Europe is expected to continue to dwarf that of emerging markets through 2016, boding well for manufacturers wishing to sell to these markets.

Conclusion
In summary, re-shoring aims to reduce the current uncertainties and costs of international supply chains.

#### 4.1.1.2 Impact of Investment Promotion Agencies, Subsidies and Tariffs

Fallon & Cook (2010) examines the main factors that attract inbound foreign direct investment (FDI) and state that location decisions involve hierarchical decision making, linking together international, national and regional elements. TNC's first chose between locating subsidiaries at the continental level (e.g. Europe or USA), before determining whether to locate in particular countries (e.g. UK or Germany) and subsequently regions (e.g. South East or Lower Saxony).

There are 3 strategic determinants of FDI for location choice (after geographical location choice):

- Market seeking (for horizontal FDI, which markets will be most receptive to the investment);
- Efficiency seeking (relates to the local labour market, tax policies and the role of government);
- Strategic asset seeking (relates to local resources and support networks, e.g. clusters)

As most clusters are region specific, the choice of location at the regional level is often determined by which countries have sector specific clusters relevant to the TNC looking to invest. Although the importance of openness at the national level should not be underestimated, the real levers of power and impact are often at the sub national or provincial level. The location attribute receiving perhaps the greatest attention in studies of FDI at the sub national level is the market size of the relevant region or city. As in the case of FDI studies at the national level, the evidence is unambiguous in pointing to a strong and positive relationship between FDI and larger market size, however the precise interpretation of the market size variable differs in sub national studies. Specifically, measures of overall market size at the sub national level can be interpreted in some cases as indicators of agglomeration economies, particularly when market size is measured as total industrial or services sector output as opposed to a measure of overall output such as total income.

Agglomeration economies encompass the efficiency benefits that firms enjoy by operating in close geographic proximity to suppliers of specialised inputs and services, as well as to organisations in the same industry that are potential sources of spillover efficiency benefits and other external economies of scale. In a number of studies, measures of geographical density of manufacturing establishments are found to be positively and significantly related to FDI in regions and cities. The presence of foreign owned firms in a location often attracts other foreign investors from the same home countries by signalling the advantages of operating in that location, thereby strengthening agglomeration economies.

Physical infrastructure is another location attribute that is regularly incorporated into FDI models applied at the sub national level. For some manufacturing industries, access to water or rail transportation is a critical determinant of a location's attractiveness, whereas service industries are likely to be more concerned about the state of a location's telecommunications infrastructure.

Although differences across sub national regions in tax rates and government subsidies are a conceptually important issue, few available statistical studies address the issue. A possible reason for this paucity of evidence is the difficulty in measuring effective tax rates at the regional or city level, particularly when effective tax rates can vary substantially across different industries and organisations, even within the same region or urban area. The limited amount of evidence militates against drawing strong conclusions about the practical importance of taxes and subsidies to foreign

investors. Furthermore, what evidence is available tends to be inconclusive. Specifically, there is no consistent evidence that fiscal concessions to foreign investors in the form of lower taxes and/or direct or indirect subsidies promote increased FDI in the longer run

It might be the case that an individual province or city might gain a location advantage by lowering corporate taxes and/or extending fiscal benefits to foreign investors. However, the advantage is likely to be short lived, given the likelihood that other provinces or cities will offer comparable fiscal benefits to foreign investors. Moreover, improvements in infrastructure may be less easy for other jurisdictions to duplicate. So tax reductions that come at the expense of maintaining and expanding public infrastructure could be a relatively ineffective policy instrument to attract FDI for any province or city.

Government subsidies to foreign investors will increase inward foreign direct investment, at the margin, presuming that they are not matched by other governments. Given the existence of spillover benefits to FDI, targeting subsidies to potential foreign investors would seem to be an advisable policy, however extending such subsidies is not necessarily an element of best practice. For one thing, if subsidies are linked to investing in 'have not' locations, the spillover benefits to the host economy are likely to be severely compromised. In addition, the fiscal burden of significant investment subsidies implies either that taxes must be increased to pay for the subsidies or that government expenditures in other areas, including possible expenditure expenditures on public services, must be reduced. Therefore in the longer term, subsidies cannot compensate for an inability to anchor firms in a country. On balance, national, but particularly sub national, units might be more effective in attracting FDI and in leveraging the benefits of FDI and outward FDI, by emphasising governance and infrastructure improvements (particularly the use of Clusters), rather than fiscal subsidies to foreign investors.

### Overall Conclusions

In the Far East (in particular China) investment protection and foreign ownership restrictions are lessening the attractiveness of these locations as places to invest research and development activities.

There is a growing literature regarding the emerging benefits of re-shoring and mainly relates to the ambition of reducing the current uncertainties and costs of international supply chains.

Although openness at the national level to foreign investment and trade is essential, active promotion is best carried out at the sub regional level, specifically targeting local clusters.

The use of taxation/subsidies at the regional level is at best short termist, as there are few restrictions to competing regions to prevent them duplicating the same offering.

#### 4.1.2 Impact of Spillovers/technology transfer

Few empirical studies focus on what determines the quality of the investment –i.e. whether there are productivity spillovers – rather than on what determines the size of those investments. The table below assesses the impact of the following variables on technology transfer/productivity spillovers:

Variable	Impact
Geographic density	Strong positive
Education and skill level	Weakly positive
R&D	Strongly positive

Blomstrom and Kokko (2009) identify four ways how technology might be diffused (spillovers) from foreign affiliates to other firms in the host economy:

Method of Diffusion	Explanation
Demonstration imitation effect;	– Occurs if there are arm's length relationships between MNCs and domestic firms and domestic firms learn superior production technologies and other knowledge from MNC's. The most important forms are imitation of managerial and organisational innovation and imitation of technology.
Competition effect	Is when competition from MNCs force domestic rivals to update production technologies and techniques to export spillovers.
Foreign linkage effect;	This relates to export spillovers. Domestic firms can learn to export from MNCs
Training effect	Occurs if there are movements of highly skilled personnel from MNCs to domestic firms, these employees may take with them knowledge which may be usefully applied in the domestic firm

Not all spillovers are positive as FDI can generate negative externalities when foreign subsidiaries with superior technology force domestic firms to exit. These negative externalities are an aspect of competition effect and are also called crowding out effect or business stealing effect

Gorg and Greenaway (2009) have introduced two new (sub) types of FDI spillovers related to the training effect:

- Direct spillovers through complementary workers; and



- indirect mechanism when workers move and transfer technology between foreign and domestic firms.

Gorg and Greenaway highlight that the absorptive capacity of domestic firms is a key factor determining whether they benefit from FDI spillovers and that spillovers benefit companies in close proximity to foreign owned affiliates. The absorptive capacity of host economies is related to technological activities and the availability of skilled labour. They also noted that what little work has been completed on trade related investment measures has failed to establish a direct link between such measures and the transfer of useful technologies to domestically owned firms.

Knowledge spillovers are difficult to measure. Krugman (1991:53) maintained: “knowledge flows...leaves no paper trail which they may be measured and tracked.” The approach to FDI spillovers adopted in the empirical literature largely avoids the question of how technology spillovers actually takes place and focuses on the simpler issue of the whether the presence and magnitude of MNCs affect productivity in domestic firms.

Overviews of literature on FDI spillovers mostly identify three types of analysis:

Type of Analysis	Critique
Case study analysis	In interpreting the case study results one should be careful and aware that they rarely offer quantitative information and are not easily generalised (Smarzynska, 2003)
Industry level analyses	For a long time, empirical research on FDI spillovers was dominated by industry level studies, most of which show a positive correlation between foreign presence and sectoral productivity (Smarzynska, 2003). The downside of sectoral studies is the difficulty in establishing the direction of causality. A positive association may result from the tendency of MNCs to locate in high productivity industries rather than by genuine productivity spillovers. It may also be a result of FDI inflows forcing less productive domestic firms to exit and/or MNCs increasing their share of host county market, both of which would raise average productivity in the industry.
Firm level analyses	Firm level panel data analysis focuses on whether the productivity of domestic firms is correlated with the extent of foreign presence in their sector or region. Gorg and Strobl (2010) argue that panels, using firm level data are the most appropriate estimation method because they look at: <ul style="list-style-type: none"> <li>- development of domestic firms' productivity over a longer period of time, rather than relying on one data point; and</li> <li>- spillovers, after controlling for other factors</li> </ul>

Methodological improvements of FDI spillovers' analysis brought in the analysis by recent literature

Issue	Major Findings	Study
Technology/knowledge versus productivity spillovers	In measuring the technological spillovers from FDI most studies resort to second best solution, i.e. to the indirect measuring of technological spillovers as reflected in the productivity growth- measuring productivity spillovers and not technological spillovers.  Technological/knowledge spillovers should be measured by innovation and not productivity growth.	Damijan, Jaklic and Rojec (2006)
Aggregate/sectoral versus firm level studies	The higher the level of aggregation, the stronger the evidence for externalities and learning effects. Micro data can capture heterogeneity across firms while aggregate level studies cannot control for this.	Keller (2004)
Cross-sectional versus panel data	Cross sectional studies may overstate the spillover effects because they do not allow for the time-invariant firm or sector specific effects. Panel data allow to control for such factors	Gorg and Strobl (2010)
Shape of relationship between FDI spillovers and technological/productivity growth of domestic firms	There is a U- shaped relationship between foreign presence and spillovers, competition effect dominates when foreign presence is small, positive externalities appear as foreign presence increases	Barrios, Gorg and Strobl (2009)
More and better data	Proper measure of linkages between foreign affiliates and domestic firms is the ratio of the value of inputs bought locally to the total number of workers hired by a MNC.	Kellar and Yeaple (2009)

Knell and Rojec (2011) state that empirical analysis of knowledge spillovers from FDI offer mixed results, the reasons for the lack of evidence and the developments are of a substantive and of a methodological nature.

The main substantive reasons relate to:

- the fact that in a number of cases there are really no (or even negative) spillovers because MNCs are efficient in preventing leakages;
- No or deficient consideration of firm heterogeneity in the econometric models;
- Concentration on horizontal (intra-industry) spillovers; and

- The fact that often the necessary preconditions for spillovers are lacking in the host countries.

Recent econometric literature has introduced a number of additional determinants of FDI spillovers, which help overcome the aforementioned deficiencies, including:

- Firm heterogeneity;
- Differentiation between vertical (inter-industry) and horizontal (intra-industry) spillovers; and
- Host country absorptive capacity for knowledge spillovers.

Castellani and Zanfei (2005) on firm heterogeneity state 'not every MNC is a good source of externality and not every domestic firm is equally well placed to benefit from multinational activity'. Studies that further disaggregate data into more homogenous groups of firms and plants, find more encouraging results. The literature offers the following sources of firm heterogeneity which may explain variability in FDI (knowledge) spillovers:

- Geographical distance (proximity) between foreign subsidiaries and domestic firms;
- Time/dynamic dimension of FDI, the issue of time lags in which spillovers realise;
- Heterogeneity of foreign subsidiaries with issues like domestic versus export market oriented subsidiaries, acquisitions versus greenfield FDI, impact of local equity participation on FDI spillovers; and
- Heterogeneity of domestic firms, which defines their absorptive capacity, reflected in the level of technological development, R&D and innovation activity, human capital capacity, productivity level and/or export propensity.

Apart from great variety of firm heterogeneity sources, the main developments in the literature are differentiation between vertical and horizontal spillovers and bringing host country absorption capacity into the analysis. As far as the former is concerned, the overwhelming conclusion is that horizontal spillovers are less likely to take place than vertical spillovers. Therefore, empirical studies should differentiate between horizontal and vertical spillovers and within vertical spillovers between backward and forward linkages induced by foreign affiliates.

The primary focus on empirical studies of FDI quality or spillover benefits is the absorptive capacity of host country firms. The level of research and development activity in the host country or among host country firms is the most frequently specified measure of absorptive capacity. The findings are unequivocal: R&D activity is positively related to spillover efficiency benefits from FDI. It is certainly possible to interpret measures of R&D activity as broad indicators of scientific and technical activity in the host economy, since R&D activity is highly correlated with other indicators, such as patenting activity and employment rates for scientists and engineers. In fact a number of studies specify absorptive capacity using other variables besides R&D attractiveness. In particular, measures of the education and skill level of the domestic workforce, as well as the export orientation of the host country workforce have been used.

The need to have adequate absorption capacity to be able to benefit from knowledge spillovers is not recognised only on the firm but also on the host country level. In the literature, host country's absorptive capacity is defined in a rather diversified way, from very broad, as the overall development level of a country's economy, technology, institutions, investment and business climate, to much more

specific measures, such as the level of technological development, the level of human capital or the level of infrastructure.

## Conclusion

The economic benefits of FDI and outward FDI primarily derive from two phenomena:

- Increased specialisation of production in the economy; and
- Spillover efficiency benefits to the host or home economy.

Gorg and Greenaway (2009) have introduced two new (sub) types of FDI spillovers related to the training effect:

- Direct spillovers through complementary workers; and
- Indirect mechanism when workers move and transfer technology between foreign and domestic firms.

Gorg and Greenaway highlight that the absorptive capacity of domestic firms is a key factor determining whether they benefit from FDI spillovers and that spillovers benefit companies in close proximity to foreign owned affiliates.

The research has identified the following difficulties in measuring knowledge spillovers, including:

- the fact that in a number of cases there are really no (or even negative) spillovers because MNCs are efficient in preventing leakages;
- No or deficient consideration of firm heterogeneity in the econometric models;
- Concentration on horizontal (intra-industry) spillovers; and
- The fact that often the necessary preconditions for spillovers are lacking in the host countries.

Recent econometric literature has introduced a number of additional determinants of FDI spillovers, which help overcome the aforementioned deficiencies, including:

- Firm heterogeneity;
- Differentiation between vertical (inter-industry) and horizontal (intra-industry) spillovers; and
- Host country absorptive capacity for knowledge spillovers.

#### 4.1.1 Tax structures

In recent years there has been a renewed interest in taxation of corporate investment. From the point of view of economic efficiency, tax systems should ideally be as 'neutral' as possible in terms of economic choices. From this perspective, and in an international context, similar investments should not face markedly different effective levels of taxation purely because they are undertaken in different countries. Therefore, the size of effective tax rate differentials and the dispersion of effective tax rates deserve careful attention in order to analyse the role of taxes for investment decisions.

Given the relatively few studies that link host and home country tax structures to FDI and outward FDI, most studies focus on the corporate tax rate. Moran (2005) concludes that tax considerations have become more important influences on the location decisions of multinational companies since 1990. He also asserts that multinational companies have become more responsive to tax concessions and other investment incentives.

Hong and Smart (2009) discuss the multinationalization of corporate investment (such as Google and Amazon) that in recent years has given rise to a number of international tax avoidance schemes that may be eroding tax revenues in industrialized countries, but which may also reduce tax burdens on mobile capital and so facilitate investment. Both the welfare effects of and the optimal response to international tax planning are therefore ambiguous.

Notwithstanding extensive discussions in the popular business media about the important influence of taxes on the investment decisions of multinational companies, hard statistical evidence on the linkages between taxes and direct investment decisions is limited and the available results do not necessarily tell a consistent story. This conclusion is consistent with Blonigen's interpretation of the available evidence. He argues that the linkage is uncertain because the way in which parent companies reduce double taxation on their multinational companies can have different implications for foreign direct investment activities. More generally, it is difficult to measure the precise incidence of corporate income taxes.

Becker et al (2012) assess the relative importance of quality and quantity effects of corporate taxation on foreign direct investment. Quantity is affected if corporate taxes reduce the equilibrium stock of foreign capital in a given country. Quality effects arise if taxes decrease the extent to which investment contributes to the corporate tax base and the capital intensity of production. Taxes do not only affect the quantity of (inbound) FDI but also its quality, i.e. the degree to which FDI creates jobs and how it contributes to tax revenue in the host country.

For purposes of illustration, consider the following example. A multinational firm sets up two new affiliates, one in Ireland, the other in Spain. The two investment projects are equal in terms of quantity, i.e. the amounts of capital invested in each country are identical. However, due to the low Irish corporate tax rate, the highly profitable financing department is located in Ireland while the industrial assembly lines, with low profitability and a large payroll, which is deductible from the corporate tax base, are located in Spain. How are these investments to be evaluated in welfare terms? According to the conventional quantity-based success indicator, both countries were equally successful in attracting FDI. However, the investment in Ireland boosts the Irish corporate tax base while the investment located in Spain only marginally adds to the Spanish corporate tax base. It increases labour income in Spain, though, and boosts Spanish payroll tax revenue. Thus, the Spanish and the Irish investment are equal in quantity but very different in quality. Both investment characteristics, quantity and quality,

are potentially affected by the level of corporate tax rates (Ireland attracts the profitable investment, Spain the labour-intensive one).

From 1990 to 2000, Germany increased its stock of foreign held capital by about 520% (source: OECD) and performed much better in attracting foreign FDI than the UK (115%), France (205%), the US (180%) or Japan (410%). The standard way of reading these figures is that Germany attracted FDI despite its relatively high tax rates (before the tax reform in 2001, the corporate tax rates in Germany were between 52 and 58% and thus among the highest throughout the developed world). Our results suggest that these large inflows of capital were of minor quality in the profitability dimension but of higher quality in terms of generating labour income. Evaluated for the year 2000, the findings indicate that the profitability of German investment would have been by 18% higher and the payroll intensity by 22% lower if Germany had reduced its tax to the average of other EU countries.

Haufler and Runkel (2012) developed the concept of 'Thin Capitalization': this is when a company's capital is made up of a much greater proportion of debt than equity, i.e. its gearing, or leverage, is too high. Even where countries' corporate laws permit companies to be thinly capitalised, revenue authorities in those countries will often limit the amount that a company can claim as a tax deduction on interest, particularly when it receives loans at non-commercial rates (e.g. from connected parties). However, some countries simply disallow interest deductions above a certain level from all sources when the company is considered to be too highly geared under applicable tax regulations.

Some tax authorities limit the applicability of thin capitalisation rules to corporate groups with foreign entities to avoid "tax leakage" to other jurisdictions. The United States "earnings stripping" rules are an example. Hong Kong protects tax revenue by prohibiting payors from claiming tax deductions for interest paid to foreign entities, thus eliminating the possibility of using thin capitalisation to shift income to a lower-tax jurisdiction

This paper has introduced a model where countries compete for mobile and immobile capital through both statutory tax rates and thin capitalization rules that limit the tax-deductibility of internal debt flows within MNEs. For the symmetric case, and starting from a tax competition equilibrium with inefficiently low tax rates and inefficiently lax thin capitalization rules, it has shown that a coordinated policy of tightening thin capitalization rules will benefit both countries, even though it induces them to compete more aggressively via statutory tax rates.

Lawless (2011) looks at how complexity of the tax system affects FDI. Fulfilling tax requirements can be time-consuming, and this implies a cost for more complex tax systems. Alternatively, complexity may provide opportunities to reduce the overall tax bill. We find that measures of tax complexity have a significant inhibiting effect on the presence of FDI for a country pair, but have little impact on the level of FDI flows. A 10% reduction in tax complexity is comparable to a one percentage point reduction in effective corporate tax rates.

Tax policies are, perhaps, the most controversial aspect of best practices. Popular opinion, as well as anecdotal evidence suggests that lowering tax rates should encourage increased investment, including investment by foreigners. However, difficulties in accurately measuring effective tax rates, particularly at the sub national level and for specific industries and companies, limit rigorous empirical examination of the relationship between tax rates and foreign investment. Furthermore, since taxes help fund the provision of public goods and since the supply of public goods encourages investment, the full impact of lowering tax rates might be to discourage investment (particularly at the regional level), if the supply of public goods is diminished as a consequence. Finally, the literature clearly cites

that there are clear competitive benefits related to tax simplification, in that it has the potential to attract emerging companies who are interested in growth and investment (rather than those simply seeking a tax haven) and provides a 'business friendly impression' by decreasing the restrictions to business. Although not specifically related to taxation policy, there is a growing body of evidence related to 'perceived business friendliness of countries' and how this is best exploited.

## Conclusion

Taxes do not only affect the quantity of (inbound) FDI but also its quality, i.e. the degree to which FDI creates jobs and how it contributes to tax revenue in the host country.

Tax policies are, perhaps, the most controversial aspect of best practices. Popular opinion, as well as anecdotal evidence suggests that lowering tax rates should encourage increased investment, including investment by foreigners. However, difficulties in accurately measuring effective tax rates, particularly at the sub national level and for specific industries and companies, limit rigorous empirical examination of the relationship between tax rates and foreign investment.

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A 10% reduction in tax complexity is comparable to a one percentage point reduction in effective corporate tax rates.





## 5 BENCHMARKING EXPERIENCE

### Summary

This section reviews the emerging literature related to FDI in Germany and the Republic of Ireland and highlights a number of emerging themes/commonalities of approach, including:

- Tax simplification/Tax Reduction;
- Gravity of Cross Border R&D Expenditure – the liability of foreign-ness and the ability to network
- Cluster Development/Smart Specialisation – the use of clusters to attract FDI and the development of an all encompassing Innovation Strategy rather than economic development strategy; and
- International Knowledge Transfer and Commercialisation – the use of Higher and Further Education as a means to attract foreign direct investment.

The interim findings workshop identified the need to undertake a review of emerging literature on Foreign Direct Investment into two countries:

- Germany; and
- Republic of Ireland.

At first glance, there seems little of obvious comparison between the two countries (Germany perceived as a Core economy dependent on indigenous High tech investment and the Republic of Ireland as a peripheral economy reliant on Foreign Direct Investment). However, a number of commonalities have begun to emerge:

- Tax simplification;
- Gravity of Cross Border R&D Expenditure;
- Cluster Development;
- Development of Smart Specialisation; and
- International Knowledge Transfer and Commercialisation.

### 5.1 Tax Simplification

The table below discusses the implications of tax simplification on FDI and outward FDI:

#### Main Findings

The continued centre piece of Ireland's economic development strategy is the attraction and retention of foreign direct investment (mainly high tech US companies). Low levels of corporation tax continue to be of prime importance to the Irish Government, as it attracts financially sophisticated companies and indicates a more laissez faire approach to regulatory control. This is substantiated in a recent article in *The Economist* (Jan 5<sup>th</sup> – Fitter yet fragile), states that:

*“ Helped by a low corporate tax rate of 12.5%, Ireland continues to attract foreign direct investment (FDI), especially from American firms and particularly in pharmaceuticals, information technology and financial services. The number of new FDI projects in 2012 has been similar to that in 2011, itself the highest for a decade.*

*The foreign presence is now a towering one, so much so that Irish exports actually exceed the value of GDP. The contribution from net trade – exports less imports – has more than offset falls in domestic demand, which remains traumatised by excessive debt (households owe 209% of disposable income)."*

Although Germany continues to have higher effective tax rates than the average of the old EU15 it has a lower effective tax burden than in Japan, Canada and the USA, and therefore indicates a desire by the Government for greater transparency and tax reduction.

Sources:

Berry et al (2010),  
 Elschner and Vanborren (2009)

## 5.2 Gravity of Cross Border R&D Expenditure

The table below discusses the gravity model in relation to Cross Border research and development:

Main Findings
<p>The liability of foreignness – cultural proximity is conducive to R&amp;D efforts of foreign affiliates as lower cultural barriers improve market knowledge and the understanding of customer needs and facilitate communication and the exchange of information and knowledge across borders (particularly amongst monoglot English speakers). Until recently, German inward investment primarily came from its 'near neighbours', however the active promotion of its research and development capability has attracted investment from the UK, USA and the Far East.</p> <p>Ireland on the other hand continues to utilise its shared language affinities with North America who continue to favour it as their choice location in Europe for the location of headquarters and R&amp;D functions.</p> <p>There is an emerging literature related to the development of a cluster related approach to the attraction of R&amp;D in both Germany and the Republic of Ireland.</p>
<p>Sources:                      Leithner, Dachs and Stehrer (2012)</p>

## 5.3 Cluster Development

The table below discusses the implications on FDI and outward FDI of Cluster Development:

Main Findings
<p>It is well understood that certain industries have a tendency to cluster in particular locations, with the objective of gaining from the benefits (agglomeration economies) of being in close proximity to companies delivering the same goods or services or co-location with companies within their supply chain. These benefits (or positive externalities) are typically categorized as being either pecuniary or technological. Positive pecuniary (financial savings) externalities often relate to the presence of a</p>

specialized labour market (potentially providing a pool of trained labour, thereby lowering training budgets and/or recruitment of staff) or connected to forward and backward linkages (supply chain). These forward and backward linkages relate to the local sourcing of materials and/or services and bring with them reduced transportation and coordination (locating suppliers) costs. Technological externalities mainly relate to knowledge spillovers, which are viewed as the primary benefit of the cluster (Maskell et al., 1998).

There is no consistent evidence to suggest that host governments can gain larger FDI spillover benefits by requiring foreign owned affiliates to enter partnerships or joint venture arrangements with domestically owned firms or to commit to activities that they would not otherwise find profitable. In short the policy implications for the quality of FDI are roughly consistent with those for the magnitude of FDI. Namely, the focus of government policies should be on ensuring the efficient provisions of public goods such as education and physical infrastructure and on promoting the technological capabilities of private firms and non profit institutions, such as universities, that contribute indirectly to bolstering the absorptive capacity of domestic organisations

We note that the spillover efficiency benefits of FDI are larger when related industrial activities are near each other. Indeed, the literature suggests that as activities become more spread out, technological spillovers tend to decline dramatically. Therefore deliberate efforts on the part of policy makers to 'spread out' industrial activity geographically, particularly activities characterised as science and technology intensive, are likely to weaken society's overall technological capabilities

In broad terms, best FDI practices can be seen as 'framework' policies. That is, they contribute to an increased production capacity of the national or local economy. It is less clear from the available evidence that policies targeted specifically at foreign investors can fit the description of best practices. For example, financial subsidies to foreign investors might attract some FDI, at the margin; however, the impact of those subsidies seems to weaken over time. Moreover, if the subsidies, intentionally or unintentionally, encourage investment outside concentrated 'centres of excellence' the spillover benefits to domestically owned firms are likely to be negligible. However, foreign investment promotion agencies can be effective instruments to encourage inward direct investment, particularly if they focus on mitigating administrative costs and delays that confront foreign investors.

The Republic of Ireland, in common with Germany, has continued to focus its FDI activities on clear cluster initiatives. This is highlighted in the paper on Tight Clusters or Loose Networks which examines the situation in which foreign direct investment is initially attracted to a region as a result of public policy initiatives rather than the existence of sophisticated local capabilities, however through time and the concept of cumulative causation, the clusters are strengthened and 'anchor' the company to the country. Giblin and Ryan (2012), in common with Driffield (2010) compares the importance of clusters both as a means of attracting FDI and also sustaining clusters. In short, the attraction of high tech FDI can add to the vitality of R&Di of existing clusters and bring spillover benefits to both indigenous and FDI companies

Sources: Giblin and Ryan (2012)

Driffield (2010)

## 5.4 Smart Specialisation

The table below discusses the implications on FDI and outward FDI of Smart Specialisation:

Major Findings
<p>Although the German Cluster Campaign is still utilised, there has been a movement away from the strict sectoral approach, towards Smart Specialisation. In Germany this is a combination of specific sectoral assistance and continued access to more generic interventions (i.e. for bespoke sector specific interventions, companies can go to Max Planck Centres for fundamental research, the Fraunhofer Institutes for Applied research and Sectoral incubators/network groups for direct assistance). The basis of the approach is the belief that support for innovation is fundamental to all economic development and the aim is to encourage shared learning and collaboration across key sectors. The Smart Specialisation approach is being utilised as a key tool in attracting inward investment of high tech companies.</p> <p>Emerging literature in the Republic of Ireland has also highlighted the move by the Irish Government from a standard 'siloes' approach to clusters to that of Smart Specialisation. The Economist Report of 5th January 2013, highlighted one obvious problem of a reliance on clusters:</p> <p><i>"Ireland's success in attracting global drugs firms – pharmaceuticals made up half of goods exports in 2011 – means that it is being affected by the 'patent cliff', the expiry of patents on many blockbuster drugs. In 2011 the value of Irish pharmaceutical exports rose by almost 7%, but in the first ten months of 2012 it fell by 3% compared with the same period a year earlier."</i></p> <p>However, this is not just a problem for Irish Clusters.</p>

## 5.5 International Knowledge Transfer and Commercialisation.

The table below discusses the implications on FDI and outward FDI of International Knowledge Transfer and Commercialisation:

<p>There is an emerging body of evidence to assert that bodies such as the Fraunhofer Society (which is formed from a number of semi autonomous applied research institutions jointly run by industry and universities across Germany has a number of international offices in the USA, UK Japan, China, Indonesia, Russia and the United Arab Emirates) is using its international presence for the following purposes:</p> <ul style="list-style-type: none"> <li>• Advance the level of scientific and engineering knowledge and exploit the innovation potential of competing centres of excellence through local presence and involvement;</li> <li>• Penetrate new markets for research services;</li> <li>• Offer wider opportunities for staff development , both in terms of scientific knowledge and an opportunity to encounter other management styles and business cultures, including foreign language and social skills; and</li> <li>• Continue improvement of problem solving skills through a wider range of projects often based on other market needs and customer requirements.</li> </ul>
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The Fraunhofer approach has been designed to be a conduit for both German companies to gain access to foreign markets (and to avail of collaborative research opportunities in other jurisdictions without the need for a formal presence) and for foreign companies to familiarise themselves with German research and development and develop ties with German companies, thereby offsetting the liability of foreignness cited earlier in the study.

## Conclusion

A number of often recommended public policies to attract FDI can be identified in the literature. They include the following six policies:

- Establish and maintain legal and regulatory regimes that protect property rights, create transparent and fair rules of law and minimise the transaction cost burdens and other unwanted consequences of regulation;
- Reduce corporate tax rates or tax simplification
- Weaken or eliminate regulatory review processes applying to foreign investors;
- Eliminate limitations on foreign ownership levels in sensitive industrial sectors;
- The active promotion of a flexible innovation agenda through the use of cluster development and smart specialisation; and
- Development of out of country research capability to encourage external collaboration.

## 6 METHODOLOGY FOR ASSESSMENT OF ECONOMIC IMPACT

### Summary

The following section identifies the key criteria for assessing economic impact. The Section then uses the approved methodology for assessing economic impact to benchmark Scotland's performance against that of other UK regions and devolved administrations.

The following approach of assessing economic impact of FDI was developed and delivered by OCO Global for UK Trade and Investment (UKTI) and informed the OCO Global Presentation to Scottish Enterprise discussed (and agreed) in the interim findings workshop.

### 6.1 Theoretical Framework

OCO Global reviewed the economic impact assessment of the following organisations across Europe and North America and have concluded that each conforms to the same standard approach:

- UKTI;
- Scottish Enterprise;
- Enterprise Ireland;
- Invest in France;
- Invest in Sweden;
- Florida State; and
- Missouri State.

The benchmarking identified that the following indicators should be addressed

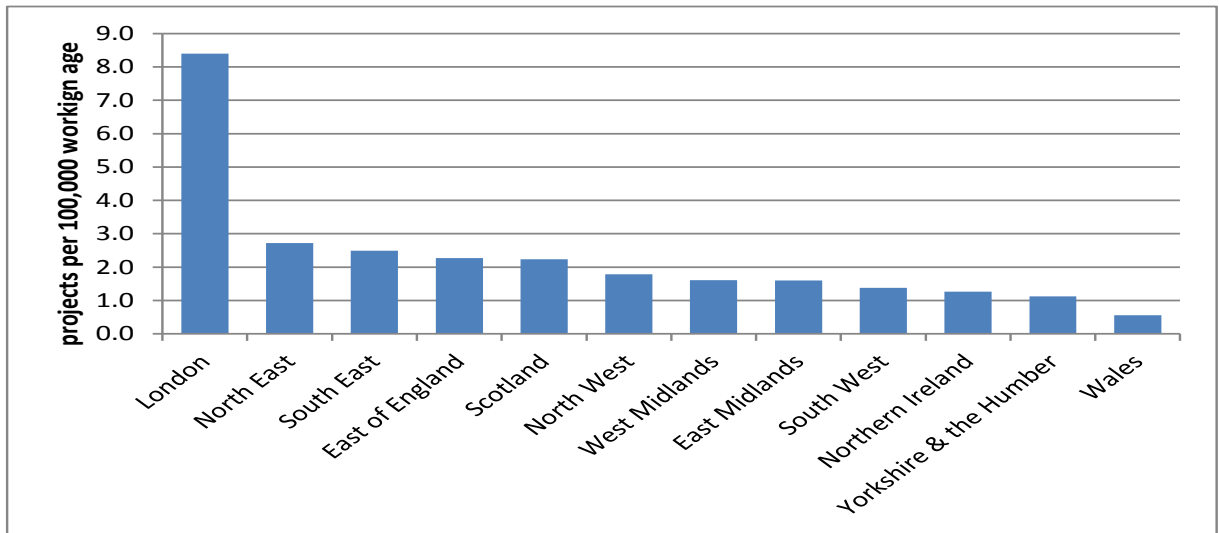
- The average wages of investment jobs relative to the sector/regional average wage;
- The expected productivity of the investment relative to regional/sectoral productivity;
- Cost per job (if supported);
- Impact on Gross Value Added;
- Skills level of jobs created/safeguarded;
- Assessment of investment/improvements in the regional skills base;
- Assessment of impact on Research and Development; and
- Conclusion on direct and wider economic impacts by region (to include multiplier effects).

However, data availability is a significant constraining factor.

### 6.2 Application of Approach

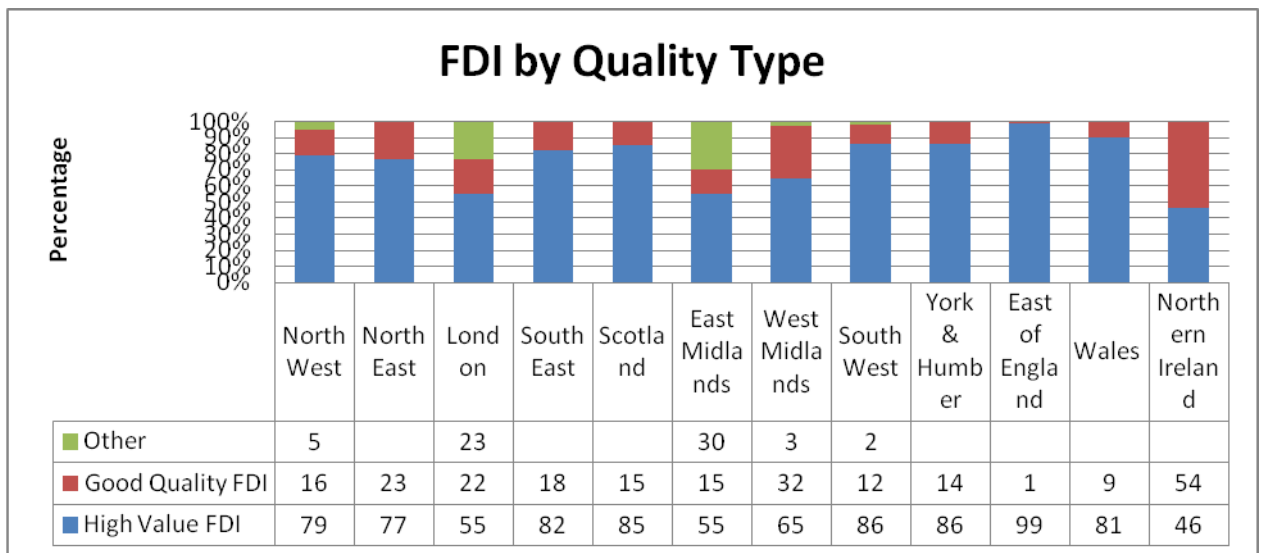
Since May 2011, PA Consulting, OCO Global and the British Chambers of Commerce have been delivery partners to UKTI in the national delivery model. In the year to March 2012, over 1,000 successes were recorded, generating circa 65,000 jobs. The geographic spread of projects highlights the continuing attractiveness of London

The table below illustrates the number of FDI projects per 100,000 working age people:



Source: OCO Global

The table below illustrates the Project by Quality Type:



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Quality of FDI is a key metric to collect in order to understand performance. A lack of agreed definition of 'quality' often constrains this analysis.

The value added of 36 sectors was assessed, covering all the main sectors for 'greenfield' FDI. The value added of FDI sectors was evaluated across four main categories:

- R&D intensity;
- Salary levels;
- Productivity; and
- Export Orientation.



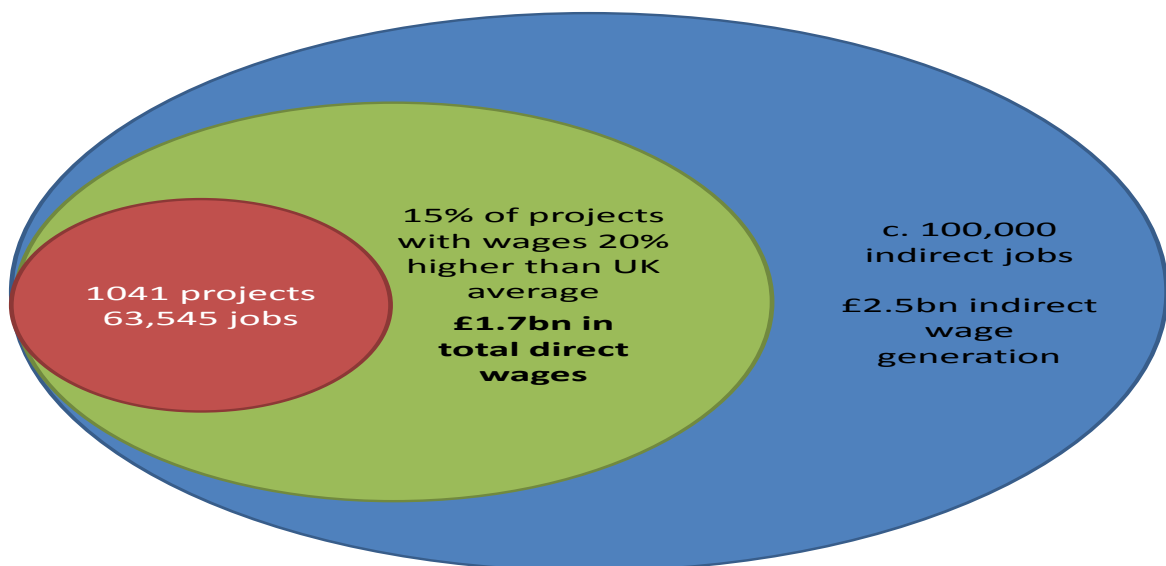
The value added of FDI into the UK was used as the basis for analysis. The 36 sectors were classified into 3 levels of value added based on the four aforementioned variables and placed in the table below:

Term	Definition
High Value FDI	Pharmaceuticals, telecom, software and IT services, non automotive transport OEM (mainly boat and train manufacturing), minerals, aerospace, biotechnology and electronic components, business machines and equipment, chemicals, financial services, coal, oil and natural gas, automotive OEM, creative industries, engines and turbines, space defence
Good Quality FDI	Industrial machinery and equipment, food and beverages, automotive components, medical devices and renewable energy.
Other	Plastics and rubber, consumer electronics, healthcare, paper, printing and packaging, building and construction materials, ceramics and glass, business and professional services, real estate, transportation, warehousing and storage, consumer products, metals, leisure and entertainment, wood products, textiles and hotels and tourism

Source: f DI Intelligence (2012)

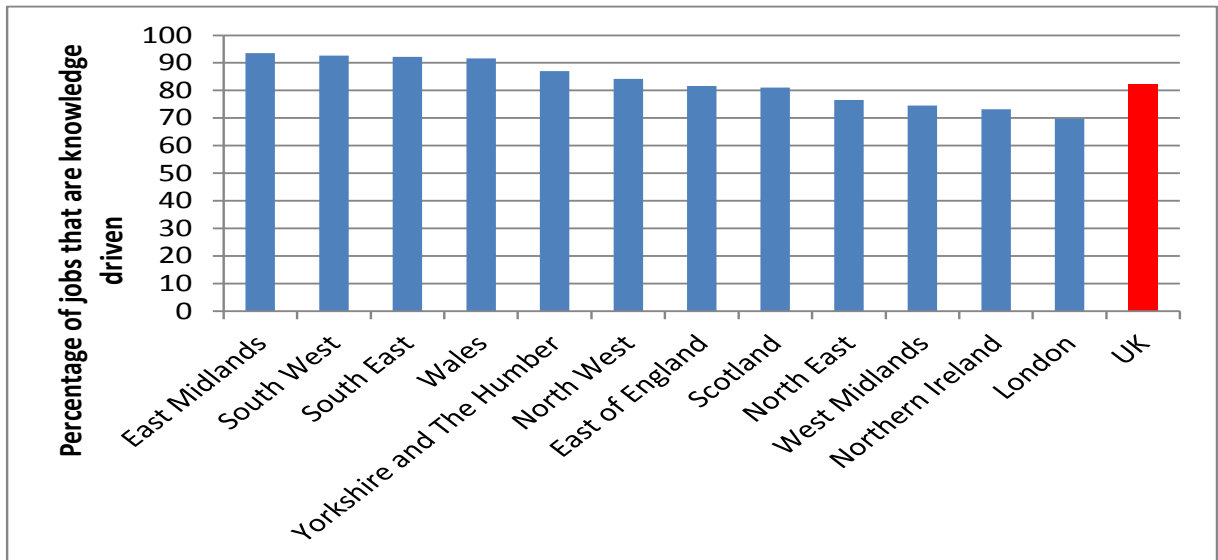
The impact of FDI goes far beyond the immediate job creation/safeguarding. The wages generated from these jobs are used to generate further positive impacts within the economy and there are further benefits in terms of skills impacts.

Wage impacts are measured by applying average regional/sectoral levels to FDI statistics. The table below illustrates the overall economic impact of the 65,000 jobs generated:



In addition to direct benefits, Inward Investment typically brings about spillovers on technology from production techniques, training opportunities for the workforce and management ideas brought into the region/country. Furthermore, increased competition with domestic firms may have a generally positive effect on industrial productivity.

The table below illustrates the percentage of jobs that are knowledge driven:



While the number of FDI projects and jobs created are easily calculated and reported, much less is known about the GVA impact of these projects.

OCO are developing a GVA assessment of UKTI's annual performance for 2011/12 and projecting GVA from FDI until 2020. Sectoral GVA per employee from the National Statistics Annual Business Survey form the basis of calculations.

Latest estimates from the Office for National Statistics suggest that in 2009, foreign owned companies in the UK contributed £239 billion to UK GVA. This equates to 26% of total GVA, up from 15% since 1998.

OCO's estimates calculate GVA of circa £7.5billion from projects announced in 2011/12. The impact is largest from the USA, estimated at £1.4billion, reflecting the fact that over 330 projects and close to 40,000 jobs were sourced from the USA in 2011/12.

The GVA impact is greater for safeguarded jobs – these projects account for approximately 57% of the total GVA impact.

The table below identifies the GVA impact by source market:

	All Sectors		
Country	New (£m)	Safeguarded (£m)	Total (£m)
USA	935.00	480.98	1,415.98
Italy	95.51	91.74	187.25
China	86.14	43.58	129.72
Japan	224.18	260.09	484.27
India	153.40	511.12	664.51
Germany	110.78	179.16	289.95
France	432.27	377.89	810.16
Canada	28.42	61.42	89.84
Switzerland	126.44	70.11	196.55
Australia	92.99	19.89	112.88
Spain	137.99	4.48	142.46
Netherlands	169.34	177.73	347.07
Rest of World	598.74	2,020.35	2,619.08
<b>Total</b>	<b>3,191.18</b>	<b>4,298.54</b>	<b>7,489.72</b>

Source: OCO Global

## Conclusions

- Governments and Agencies are keen to demonstrate the benefits of FDI;
- The Theoretical framework for impact assessments is similar to accepted evaluation guidance;
- Asking the right questions at 'landing stage' is key to determining likely impact;
- Counting the number of projects and expected jobs has traditionally been enough detail for reporting performance;
- With increased competition for public finances, OCO sense a greater appetite to consider wages, additionality, GVA and spillover impacts of FDI to evidence continued resourcing; and
- However, this approach does not presently address the issues of related to capturing the wider knowledge spillover effects

## 7 CONCLUSIONS

### 7.1 Terms of Reference

The original terms of reference anticipated that the study would focus on the following areas of interest:

- A general assessment of the current state of the literature on inward investment and outward FDI placing this in the context of the previous research undertaken for SDI;
- New trends or factors emerging in inward investment and outward FDI not covered in previous research;
- Factors affecting an inward investment decision at the macro level (e.g. skills availability);
- Factors affecting an inward investment decision at the micro level (e.g. corporate strategy);
- Identifying and analysing the themes important in investment decisions;
- Reviewing literature on impact assessments, including:
  - The quantitative and qualitative effects of inward investment and outward FDI;
  - Looking at both the 'what' (i.e quantitative) and the 'how' (qualitative) aspects;
  - Analysis of the factors driving inward investment economic impacts;
  - Analysis of the methodologies used in economic impact assessments; and
  - How public sector support in this area is monitored and evaluated.

However, following discussions with Scottish Enterprise at the Project Initiation Meeting a revised methodology was agreed which called for the delivery of An Interim Findings Workshop. This workshop was held in the RSM Tenon Office in Belfast on 25 October 2012 and the following points were noted:

- Recognition of the continuing validity of a significant proportion of the Harris and Li Literature Review;
- Emerging trends which the Steering group wished to be further investigated included:
  - Links between absorptive capacity (for innovation), spillovers and FDI;
  - Internationalisation and Clustering;
  - Tax Simplification; and
  - Rationale/Impact of Re-Shoring.
- Emerging best practice in Germany and Republic of Ireland; and
- Confirmation of the OCO Global/UKTI approach to impact assessment.

The following section identifies the key conclusions against each of the points raised in the Interim Findings Workshop:

### 7.2 Commentary on the Existing Proposition (Harris and Li Literature Review)

Drawing reliance on the Internationalisation Evidence Review undertaken by Scottish Enterprise in 2009, the table below assesses the key findings of that earlier study and identifies a number of emerging themes developed since 2009 (and reflecting changing economic priorities and strengths):

Key Issue	Emerging Literature
Internationalisation Model	There has been no significant emerging literature related to this topic.
Determinants of Internationalisation	Recent research by Steven Globerman and Victor Zitian Chen has identified a number of additional determinants of internationalisation, are discussed in Section 4.1 and include openness to foreign investment and trade and the impact of taxation
Impact of Internationalisation	There has been increased analysis as to the impact of knowledge spillovers as a result of exporting on productivity and are discussed in Section 4.1.2. These mainly relate to suggested improvements in spillover measurement and the awareness of both the impact of indigenous absorptive capacity and the determination of Multinational Corporations to prevent technology transfer on the level of spillovers.
Models of Outward FDI	There has been increased analysis as to the impact of knowledge spillovers as a result of exporting on productivity and are discussed in Section 4.1.2. These mainly relate to suggested improvements in spillover measurement and the awareness of both the impact of indigenous absorptive capacity and the determination of Multinational Corporations to prevent technology transfer on the level of spillovers.
Exporting/outward FDI	There has been increased analysis as to the impact of knowledge spillovers as a result of exporting on productivity and are discussed in Section 4.1.2.
Impacts of Outward FDI	Due to the rise of the Far Eastern Markets, there has been a significant increase in analysis as to the impact of transportation costs and technology poaching (particularly in recent American literature). The implications of this are discussed in Section 4.1.1 and mainly relate to re-shoring of activity.
Key Market Failures	<p>We have reviewed the emerging literature and conclude that the range of market failures has remained the same, however there has been an increase in importance of the following four:</p> <ul style="list-style-type: none"> <li>• Financial barriers;</li> <li>• Appropriability failures;</li> <li>• Institutional Failure Network</li> <li>• Systemic Failure – bounded rationale and path dependency.</li> </ul> <p>Although the generic definitions of these four failures has remained</p>

	constant, the rise of Far Eastern economies has led to an increase in the discussion of their impacts. The implications of this are discussed in Section 4.1.1.
Internationalisation, Innovation and Knowledge Spillovers	There has been significant additional analysis in terms of knowledge spillover effects and are discussed in Section 4.1.2.

In summary the review of the Harris and Li Study informed the discussion at the Interim Findings Workshop held on 25 October, the outputs of which are discussed in the following sections.

### 7.3 Emerging trends

In line with the recommendations of the Interim Findings Workshop, the following section identifies the emerging trends under each of the following headings:

- Links between absorptive capacity (for innovation), spillovers and FDI;
- Internationalisation and Clustering;
- Tax Simplification; and
- Rationale/Impact of Re-Shoring.

#### 7.3.1 Links between absorptive capacity (for innovation), spillovers and FDI;

The emerging trends in the literature review focused on the identification and capture of new knowledge spillovers and the link between absorptive capacity and spillovers from FDI.

Blomstrom and Kokko (2009) identified four ways as to how technology might be diffused (spillovers) from foreign affiliates to other firms, including:

Method of Diffusion	Explanation
Demonstration – imitation effect;	Occurs if there are arm’s length relationships between MNCs and domestic firms and domestic firms learn superior production technologies and other knowledge from MNC’s. The most important forms are imitation of managerial and organisational innovation and imitation of technology.
Competition effect	Is when competition from MNCs force domestic rivals to update production technologies and techniques to export spillovers.
Foreign linkage effect;	This relates to export spillovers. Domestic firms can learn to export from MNCs
Training effect	Occurs if there are movements of highly skilled personnel from MNCs to domestic firms, these employees may take with them knowledge which may

	be usefully applied in the domestic firm
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However in the interim, Gorg and Greenaway (2009) have introduced two new (sub) types of FDI spillovers related to the training effect:

- Direct spillovers through complementary workers; and
- Indirect mechanism when workers move and transfer technology between foreign and domestic firms.

Gorg and Greenaway also highlighted that the absorptive capacity of domestic firms is a key factor determining whether they benefit from FDI spillovers and that spillovers predominantly benefit companies in close proximity to foreign owned affiliates. The absorptive capacity of host economies is related to technological activities and the availability of skilled labour. They also noted that what little work has been completed on trade related investment measures has failed to establish a direct link between such measures and the transfer of useful technologies to domestically owned firms.

Knell and Rojec (2011) state that empirical analysis of knowledge spillovers from FDI offer mixed results, the reason for the lack of evidence are of both a substantive and methodological nature.

The main substantive reasons relate to:

- The fact that in a number of cases there are really no (or even negative) spillovers because MNCs are efficient in preventing leakages;
- No or deficient consideration of firm heterogeneity in econometric models;
- Concentration on horizontal (intra-industry) spillovers; and
- The fact that often the necessary preconditions for spillovers are lacking in the host countries.

Recent econometric literature has introduced a number of additional determinants of FDI spillovers, which help overcome the aforementioned deficiencies, including:

- Firm heterogeneity;
- Differentiation between vertical (inter-industry) and horizontal (intra industry) spillovers; and
- Host country absorptive capacity for knowledge spillovers.

In summary, although the methodology for the capture of FDI spillovers is emerging, the actual ability to develop spillovers is constrained by two key variables:

- The absorptive capacity of indigenous firms (conditional on their proximity/interaction with FDI investments and their own technical sophistication); and
- The ability of the MNC to contain leakages of knowledge (i.e protection of Intellectual property and/or key staff).

### 7.3.2 Internationalisation and Clustering;

The emerging literature has identified a positive relationship between internationalisation and clustering, with sub national authorities taking the lead in the promotion of their clusters as a means of both attracting and retaining foreign direct investment. Evidence from the Far East, including the Du, Lu & Tao Study (2008) states that host countries with stronger public institutions and higher horizontal



and vertical agglomerations tend to attract more foreign investments, particularly the build-up of strong business clusters and well established public and educational institutions.

As will be noted in the Benchmarking exercise, successful countries cannot just rely upon the traditional 'silo' approach of cluster development to attract and retain FDI, rather they have to incorporate a flexible approach which promotes interconnectedness (and knowledge transfer) between FDI and indigenous companies through either vertical (supply chain) or horizontal (mainly research sharing) linkages.

### 7.3.3 Tax Simplification

Tax simplification/reduction (and analysis of the impact of subsidies) is an area of considerable academic interest. However, there is a paucity of evidence as it is difficult to measure effective tax (and impact of subsidies) rates between countries, never mind at the regional or city level.

Government subsidies to foreign investors will increase inward foreign direct investment, at the margin, presuming that they are not matched by other governments. Given the existence of spillover benefits to FDI, targeting subsidies to potential foreign investors would seem to be an advisable policy, however extending such subsidies is not necessarily an element of best practice. For one thing, if subsidies are linked to investing in 'have not' locations, the spillover benefits to the host economy are likely to be severely compromised. In addition, the fiscal burden of significant investment subsidies implies either that taxes must be increased to pay for the subsidies or that government expenditures in other areas, including possible expenditure expenditures on public services, must be reduced. Therefore in the longer term, subsidies cannot compensate for an inability to anchor firms in a country. On balance, national, but particularly sub national, units might be more effective in attracting FDI and in leveraging the benefits of FDI and outward FDI, by emphasising governance and infrastructure improvements (particularly the use of Clusters), rather than fiscal subsidies to foreign investors.

Popular opinion, as well as anecdotal evidence suggests that lowering tax rates should encourage increased investment. However, difficulties in accurately measuring effective tax rates, particularly at the sub national level and for specific industries and companies, limit rigorous empirical examination of the relationship between tax rates and foreign investment. Furthermore, since taxes help fund the provision of public goods and since the supply of public goods encourages investment, the full impact of lowering tax rates might be to discourage investment (particularly at the regional level), if the supply of public goods is diminished as a consequence. Finally, the literature clearly cites that there are clear competitive benefits related to tax simplification, in that it has the potential to attract emerging companies who are interested in growth and investment (rather than those simply seeking a tax haven) and provides a 'business friendly impression' by decreasing the restrictions to business. Although not specifically related to taxation policy, there is a growing body of evidence related to 'perceived business friendliness of countries' and how this is best exploited.

### 7.3.4 Rationale/Impact of Re-Shoring.

The recent recession has instigated a significant economic realignment in the terms of trade between East and West. Where once China and much of the Far East was guaranteed to have an absolute cost advantage against locations in Europe and North America, these 'costs' have increased.

A number of American reports have cited an increased reticence on the part of American companies to locate 'high tech functions in the Far East. This trend has been further compounded by other financial factors encouraging 'Reshoring' which is highlighted in the table below:

Factor	Strategy
Transportation/Energy	Rising transportation fuel prices have made long supply chains costlier and will further favour local production if this trend persists as expected.
Talent	The gap in higher education/training between the US and some emerging economies has narrowed, but the US workforce will likely remain competitive for the foreseeable future.
Currency	The depreciation of Western currencies have helped make the US (and much of Europe) a lower cost option for exports for some countries. Local production for local markets can help hedge currency volatility.
Labour Costs	Wages in China and other low cost economies are forecast to keep rising, yet the US (and Europe) wage premium is still expected to be relatively high through 2016.
Availability of Capital	As banks resume tightening of credit standards, companies are re-adjusting their appetite for tying up credit in their supply chain
Demand	GDP per capita in the US and Europe is expected to continue to dwarf that of emerging markets through 2016, boding well for manufacturers wishing to sell to these markets.

In addition, to these 'financial costs' a number of countries are increasing barriers through investment protectionism and foreign ownership restrictions which have a negative impact on FDI. This is particularly true in the Far East, where recent research by PWC (2012) has identified the enhanced use of the following interventions aimed at technology transfer:

- Government procurement focused on forced technology transfer: In 2007 China rolled out its indigenous innovation product accreditation scheme – a list of products invented and produced in China that would receive preferences in Chinese government procurement. To be eligible for preferences, products would have to contain Chinese proprietary intellectual property rights;
- Market access Tied to Forced Transfer Technology – In the catalogue for the Guidance of Foreign Investment Industries joint ventures with foreign firms have to be approved and technology transfer agreements reached within joint venture contracts must also be submitted for approval; and

- **Weak and discriminatory Patent System.** The global patent system means that companies that file inventions first have protection from copying. The Chinese patent system is designed to get around this restriction. Under the Chinese patent system, it is extremely easy for a Chinese firm to be granted utility model and design patents. In 2009 these patents constituted approximately three quarters of Chinese patents issued to Chinese owned firms.

The combination of a 'reduced cost structure' and increased barriers to entry into Far Eastern markets according to the literature is enhancing the attractiveness of Europe and North America as locations to invest in and thereby shorten supply chains and service local markets in these two established economic zones.

## **7.4 Emerging best practice in Germany and Republic of Ireland.**

At first glance, there seems little of obvious comparison between Germany and the Republic of Ireland (Germany perceived as a Core economy dependent on indigenous High tech investment and the Republic of Ireland as a peripheral economy reliant on Foreign Direct Investment), however the review of literature identified a number of commonalities including:

- A drive towards tax simplification;
- A move towards a more flexible approach to cluster development 'Smart Specialisation' which also has implications for FDI support interventions; and
- The active promotion of in country research capabilities, which also aim to overcome the 'liability of foreignness'.

### **7.4.1 Drive towards tax simplification**

The continued centre piece of Ireland's economic development strategy is the attraction and retention of foreign direct investment (mainly high tech US companies). Low levels of corporation tax continue to be of prime importance to the Irish Government, as it attracts financially sophisticated companies and indicates a more laissez faire approach to regulatory control.

Although Germany continues to have higher effective tax rates than the average of the old EU15 it has a lower effective tax burden than in Japan, Canada and the USA, and therefore indicates a desire by the Government for greater transparency and tax reduction.

### **7.4.2 Cluster Development/Smart Specialisation**

It is well understood that certain industries have a tendency to cluster in particular locations, gaining from agglomeration economies. These externalities are typically categorized as either technological or pecuniary, according to the mode by which the external benefits are appropriated. Pecuniary externalities related to the presence of a specialized labour market or connected to forward and backward linkages generated by the local market for intermediate goods, are considered to be more sensitive to geographical distance than technological externalities. Equally recent contributions to the economic literature also emphasize localized knowledge externalities as a primary source of regional development (Maskell et al., 1998). This is linked to an in-depth analysis of the local and global components in the process of knowledge creation.

The Republic of Ireland, in common with Germany, has continued to focus its FDI activities on clear cluster initiatives. This is highlighted in the paper on Tight Clusters or Loose Networks which examines the situation in which foreign direct investment is initially attracted to a region as a result of public policy initiatives rather than the existence of sophisticated local capabilities, however through time and the concept of cumulative causation, the clusters are strengthened and 'anchor' the company to the country. Giblin and Ryan (2012), in common with Driffield (2010) compares the importance of clusters both as a means of attracting FDI and also sustaining clusters. In short, the attraction of high tech FDI can add to the vitality of R&Di of existing clusters and bring spillover benefits to both indigenous and FDI companies.

Although the German Cluster Campaign is still utilised, there has been a movement away from the strict sectoral approach, towards Smart Specialisation. In Germany this is a combination of specific sectoral assistance and continued access to more generic interventions (i.e. for bespoke sector specific interventions, companies can go to Max Planck Centres for fundamental research, the Fraunhofer Institutes for Applied research and Sectoral incubators/network groups for direct assistance). The basis of the approach is the belief that support for innovation is fundamental to all economic development and the aim is to encourage shared learning and collaboration across key sectors. The Smart Specialisation approach is being utilised as a key tool in attracting inward investment of high tech companies.

Emerging literature in the Republic of Ireland has also highlighted the move by the Irish Government from a standard 'siloes' approach to clusters to that of Smart Specialisation.

#### **7.4.3 Promotion of in country research capabilities and the 'liability of foreignness'.**

The liability of foreignness – cultural proximity is conducive to R&D efforts of foreign affiliates as lower cultural barriers improve market knowledge and the understanding of customer needs and facilitate communication and the exchange of information and knowledge across borders (particularly amongst monoglot English speakers). Until recently, German inward investment primarily came from its 'near neighbours', however the active promotion of its research and development capability has attracted investment from the UK, USA and the Far East.

Ireland on the other hand continues to utilise its shared language affinities with North America who continue to favour it as their choice location in Europe for the location of headquarters and R&D functions. There is an emerging literature related to the development of a cluster related approach to the attraction of R&D in both Germany and the Republic of Ireland.

There is an emerging body of evidence to assert that bodies such as the Fraunhofer Society (which is formed from a number of semi autonomous applied research institutions jointly run by industry and universities across Germany has a number of international offices in the USA, UK Japan, China, Indonesia, Russia and the United Arab Emirates) is using its international presence for the following purposes:

- Advance the level of scientific and engineering knowledge and exploit the innovation potential of competing centres of excellence through local presence and involvement;
- Penetrate new markets for research services;
- Offer wider opportunities for staff development , both in terms of scientific knowledge and an opportunity to encounter other management styles and business cultures, including foreign language and social skills; and

- Continue improvement of problem solving skills through a wider range of projects often based on other market needs and customer requirements.

The Fraunhofer approach has been designed to be a conduit for both German companies to gain access to foreign markets (and to avail of collaborative research opportunities in other jurisdictions without the need for a formal presence) and for foreign companies to familiarise themselves with German research and development and develop ties with German companies, thereby offsetting the liability of foreignness cited earlier in the study.

### Conclusion

A number of often recommended public policies to attract FDI can be identified in the literature. They include the following six policies:

- Establish and maintain legal and regulatory regimes that protect property rights, create transparent and fair rules of law and minimise the transaction cost burdens and other unwanted consequences of regulation;
- Reduce corporate tax rates or tax simplification
- Weaken or eliminate regulatory review processes applying to foreign investors;
- Eliminate limitations on foreign ownership levels in sensitive industrial sectors;
- The active promotion of a flexible innovation agenda through the use of cluster development and smart specialisation; and
- Development of out of country research capability to encourage external collaboration.

## 7.5 Methodology for the assessment of Economic Impact

OCO Global reviewed the economic impact assessment of the following organisations across Europe and North America and have concluded that each conforms to the same standard approach:

- UKTI;
- Scottish Enterprise;
- Enterprise Ireland;
- Invest in France;
- Invest in Sweden;
- Florida State; and
- Missouri State.

The benchmarking identified that the following indicators should be addressed

- The average wages of investment jobs relative to the sector/regional average wage;
- The expected productivity of the investment relative to regional/sectoral productivity;
- Cost per job (if supported);
- Impact on Gross Value Added;
- Skills level of jobs created/safeguarded;

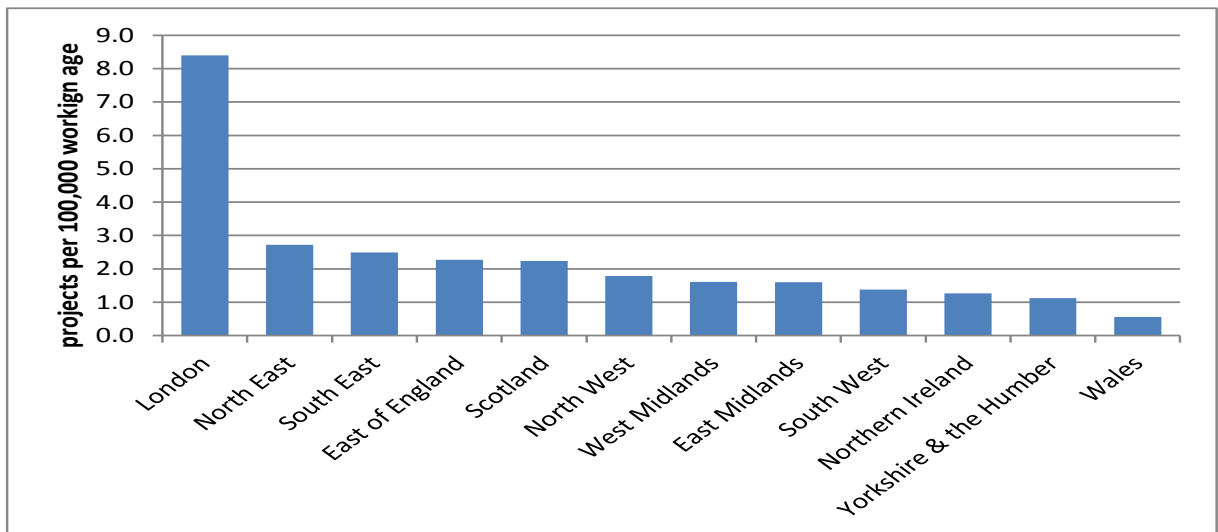
- Assessment of investment/improvements in the regional skills base;
- Assessment of impact on Research and Development; and
- Conclusion on direct and wider economic impacts by region (to include multiplier effects).

However, data availability is a significant constraining factor.

## 7.6 Application of Approach

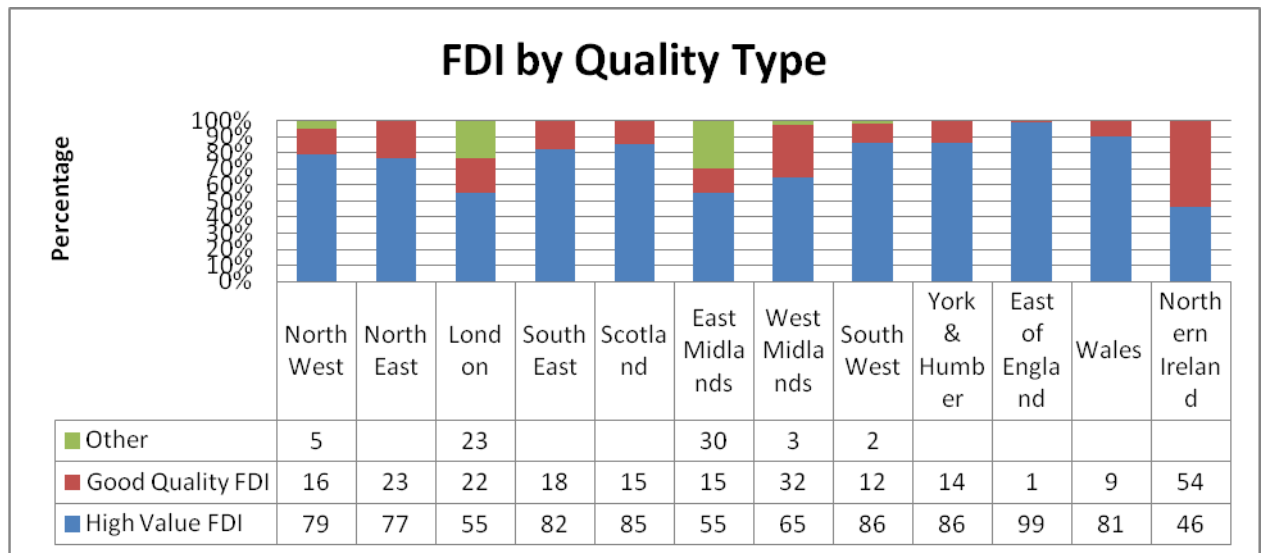
Since May 2011, PA Consulting, OCO Global and the British Chambers of Commerce have been delivery partners to UKTI in the national delivery model. In the year to March 2012, over 1,000 successes were recorded, generating circa 65,000 jobs. The geographic spread of projects highlights the continuing attractiveness of London

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Source: OCO Global

The table below illustrates the Project by Quality Type:



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The value added of 36 sectors was assessed, covering all the main sectors for ‘greenfield’ FDI. The value added of FDI sectors was evaluated across four main categories:

- R&D intensity;
- Salary levels;
- Productivity; and
- Export Orientation.

The value added of FDI into the UK was used as the basis for analysis. The 36 sectors were classified into 3 levels of value added based on the four aforementioned variables and placed in the table below:

Term	Definition
High Value FDI	Pharmaceuticals, telecom, software and IT services, non automotive transport OEM (mainly boat and train manufacturing), minerals, aerospace, biotechnology and electronic components, business machines and equipment, chemicals, financial services, coal, oil and natural gas, automotive OEM, creative industries, engines and turbines, space defence
Good Quality FDI	Industrial machinery and equipment, food and beverages, automotive components, medical devices and renewable energy.
Other	Plastics and rubber, consumer electronics, healthcare, paper, printing and packaging, building and construction materials, ceramics and glass, business and professional services, real estate, transportation,

	warehousing and storage, consumer products, metals, leisure and entertainment, wood products, textiles and hotels and tourism
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Source: f DI Intelligence (2012)

The table below provides a summary of the findings of the Impact Section:

Conclusions
<ul style="list-style-type: none"> <li>• Governments and Agencies are keen to demonstrate the benefits of FDI;</li> <li>• The Theoretical framework for impact assessments is similar to accepted evaluation guidance;</li> <li>• Asking the right questions at 'landing stage' is key to determining likely impact;</li> <li>• Counting the number of projects and expected jobs has traditionally been enough detail for reporting performance;</li> <li>• With increased competition for public finances, OCO sense a greater appetite to consider wages, additionality, GVA and spillover impacts of FDI to evidence continued resourcing; and</li> <li>• However, this approach does not presently address the issues of related to capturing the wider knowledge spillover effects</li> </ul>

## 7.7 Overall Conclusion

The literature review reflects the emerging realities of the post financial crisis world, where Global FDI fell by 16% in 2008 and in 2009 worldwide output contracted for the first time in 60 years, FDI declined a further 40%.

Although there has been a world-wide contraction, the Crisis has led to a realignment in the terms of trade between East and West and this is reflected in the academic literature which has emerged over the last three years, including:

- A heavy orientation on the emerging priorities for China and the Far East; and
- The continuing underperformance of Western economies and the implications on World Trade.

However, the literature review has identified a number of issues which may be pertinent to SE/SDI, including:

- Opportunities for re-shoring of activities;
- Identification and measurement of spillover effects;
- Mainstreaming of 'Smart Specialisation Approaches' into the attraction and retention of FDI;
- Implications of tax simplification rather than tax reduction at the regional level; and
- Innovative use of Universities/Research Centres (Fraunhofer Model) to develop working relationships with business.





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## 8 PRESENTATIONS

### 8.1 RSM Tenon Presentation



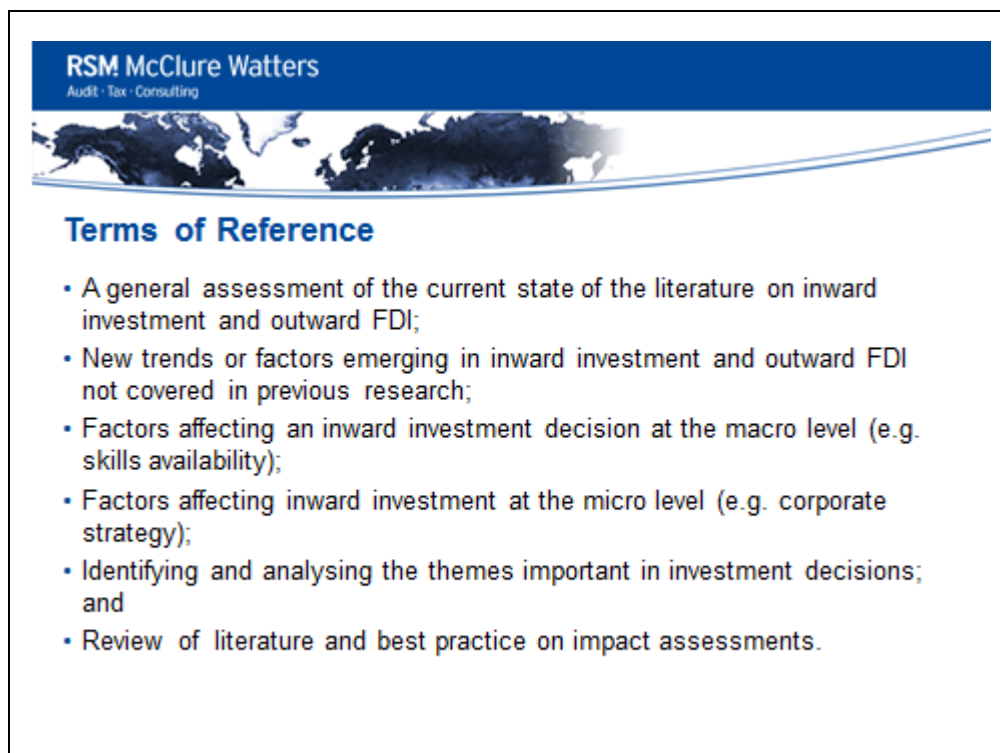
RSM McClure Watters  
Audit · Tax · Consulting

Global reach  
local understanding

**Keith Wilson**

**Inward Investment Research Consultancy**

The slide features a blue header with the RSM McClure Watters logo and tagline. Below the header is a world map graphic. The text 'Global reach local understanding' is positioned to the right of the map. The name 'Keith Wilson' and his role 'Inward Investment Research Consultancy' are centered on the slide.



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**Terms of Reference**

- A general assessment of the current state of the literature on inward investment and outward FDI;
- New trends or factors emerging in inward investment and outward FDI not covered in previous research;
- Factors affecting an inward investment decision at the macro level (e.g. skills availability);
- Factors affecting inward investment at the micro level (e.g. corporate strategy);
- Identifying and analysing the themes important in investment decisions; and
- Review of literature and best practice on impact assessments.

The slide features a blue header with the RSM McClure Watters logo and tagline. Below the header is a world map graphic. The title 'Terms of Reference' is centered above a bulleted list of six items.

**RSM McClure Watters**

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**Methodology**

- Review of SDI Study – identification of key academic contributors and principal journals;
- University based research – Ingenta Journals. Focusing was achieved by:
  - Removing papers in languages other than English;
  - Restricting publications to those since 2005; and
  - Removing letters, editorials, comments and other non-research records.
- Activities still to be undertaken:
  - Interviews with SE staff; and
  - Follow up interviews with academics.

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**List of Journals Reviewed**

- Scottish Journal of Political Economy
- Economica
- Bulletin of Economic Research
- Economic Geography
- Cambridge Journal of Economics
- Journal of International Business Studies
- The Journal of Internationalisation
- Applied Economic Letter
- Urban Studies
- Regional Studies
- Journal of Management
- International Review of Economics and Finance
- European Journal of Interdisciplinary Studies

5 February 2013

4



## General Assessment of the Literature

- Production Cycle Theory;
- The Theory of Exchange Rates on Imperfect Markets; and
- The Eclectic Paradigm of Dunning.

However, literature is increasingly being dominated by role of China and the CIVETS.

Consensus opinion is:

- FDI better for middle to upper income band countries, due to:
  - Greater likelihood of positive spinouts in countries with strong protection of IP and absorptive capacity; and
  - Lower upfront costs, ensure quicker payback period, however greater chance of branch plant closure.
- FDI is still the expensive option for market entry.



## Global Trend in FDI

- Global FDI fell by 16% in 2008 and in 2009 worldwide output contracted for the first time in 60 years, FDI declined a further 40%;
- During 2010 levels stagnated just above \$1trillion. Possible reasons are:
  - Global financial crisis has led to liquidity constraints;
  - the traditional strong link between economic growth and FDI flows means that the world slowdown has further decreased the appetite of TNCs for new investment abroad; and
  - the crisis has probably fostered a more cautious attitude among managers, resulting in a move away from high-risk projects FDI projects.

## Patterns in Foreign Direct Investment

- Emerging ODI agenda within BRICS and also need to attract 'higher tech' investment, concerns of losses to lower cost countries and increasingly Reshoring.
- Recognition in China's 12<sup>th</sup> Five Year Plan of:
  - Continuing absorptive incapacity of both Clusters and companies;
  - Need for continued Government procurement/Market Access focused on forced technology transfer; and
  - Overseas investments have increased from 5.5 billion to \$65 billion in seven years to 2011, increasing percentage (starting from low level) of investment in overseas branch plans.
- Change in roles between EU/USA, BRICs and CIVETS necessitates a change of focus and review of corporate culture (Fraunhofer Approach).

5 February 2013

7


## Patterns in Foreign Direct Investment

- Tax simplification and reduction schemes to the fore - A 10% reduction in tax complexity is comparable to a one percentage point reduction in effective corporate tax rates;
- The UK's ability to control its exchange rates continues to be a significant attractor, with Euro exchange rate volatility continuing to discourage investment;
- Number of advanced economies promoting skills attraction programmes, including: Finland, Sweden, Canada and Germany, to sustain indigenous companies. In addition, Finland and Sweden seeking to diversify their economy by attracting high tech FDI; and
- North American and European economies being proactive in support to manufacturing – wider innovation support agenda may attract 'technology sourcing' multinationals.

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8

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## Patterns in Foreign Direct Investment

Outward investment by knowledge providers:

- Number of European research Institutions (most notably Fraunhofer Institutes) developing overseas research centres for two reasons:
  - ‘sell’ research and development proposition to established clusters; and
  - Identify relevant development partners in target market for collaboration rather than in country investment.
- Use of Fraunhofer approach builds the essential trust for collaboration.

Move to localisation:

- Impact of escalating energy and transportation costs – Reshoring effect;
- Impact of technological changes such 3D printers; and
- Impact of Japanese Tsunami on JIT strategies.

5 February 2013 9

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## Patterns in Foreign Direct Investment

- High Growth Agenda:
  - Significant evidence that many internationalisation programmes are now being tagged under High Growth Support; and
  - High Growth and Innovation Support is becoming increasingly cross sectoral and breaking down of existing cluster approach, greater emphasis on local supply chain involvement.
- At same time, literature is identifying that positive externalities/ learning spillovers are highly localised/spatially dependent – a tight sub regional focus; and
- Possible concern that Smart Specialisation and its increased complexity may offset positive spillovers from Foreign Direct Investment.

5 February 2013 10




### Preliminary Conclusions -Portfolio of Support

- Literature review did not identify any significant innovation in the type of support being offered. Scottish offering continues to be robust, except for tax issue;
- However, three trends have been recognised for which support might need to be considered:
  - Localised spill over benefits (need for physical agglomeration and proximity to Knowledge providers) signposting to increasing complex innovation support network;
  - Enhanced use of Government procurement policy (started in US and being adapted elsewhere) to support Innovation Agenda and encourage collaboration; and
  - Identification of companies/plants in BRICs who are 'ripe' for reshoring.

## 8.2 OCO Global Presentation



CONTENTS. OCO | 

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**Introduction to OCO**

**Setting the scene**

- Global Motors Driving FDI landscape
- Emerging Market Growth
- Changing Talent Landscape
- The Green Agenda
- Evolving Communications
- Hubs and Hotspots

**The Impact of FDI**

- Theoretical Framework
- Regional Performance in the UK
- Economic Impact
- Wider Impact

**Towards a GVA Impact Assessment**


- Overview
- Historical Performance
- GVA Impact of FDI 2011/12

**Conclusion**

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**Introduction to OCO** OCO | 

- OCO Global is a specialist advisory firm providing economic development solutions to Governments and Economic Development Organisations (EDOs) worldwide.
- Since our inception in 2001, we have become a recognised authority in foreign investment.
- We have four offices - Belfast, London, Paris and New York – and have worked successfully with leading organisations such as UK Trade and Investment, Invest in Sweden Agency, Enterprise Ireland, Invest Hong Kong, Board of Investment Thailand Invest in France, and the States of Missouri and Florida.
- Specialists in investment promotion strategy, business intelligence, proposition marketing, organisation development and investor targeting services.

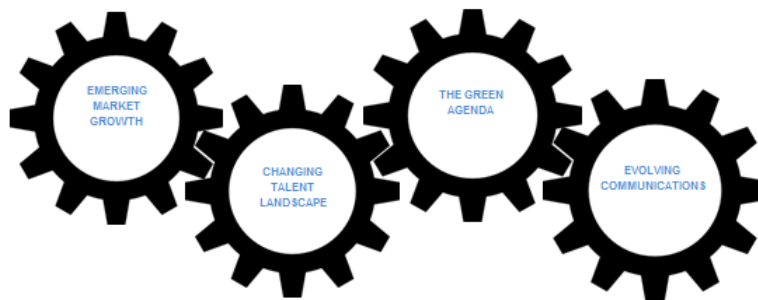
**Direct Experience in more than 50 countries**





### Global Motors Driving the FDI Landscape

A global, sustainable recovery is far from certain and while investor confidence has broadly been on the rise over the past couple of years, a number of issues ranging from the eurozone crisis to the ongoing instabilities in the Middle East means that the recovery remains tentative and investor outlook still remains broadly cautiously optimistic. There are four enduring global motors however that we believe are shaping tomorrow's global economic landscape and which will therefore have an important bearing on the future FDI landscape.



## Emerging Market Growth



By 2020, it's predicted that the four founding BRIC markets could account for nearly 50% of all global GDP growth.

Latin America is set to grow considerably over the coming decade. In 2011, Brazil overtook the UK as the world's sixth largest economy and it's predicted that it will be larger than all European economies by 2020. Other markets in the region are also demonstrating high growth potential, including Peru, Colombia, Ecuador and Chile.

Meanwhile, in Africa, GDP growth is set to far outpace population growth between now and 2020, according to the UN Population Division, while more than 50% of the continent's households are set to have discretionary spending power by 2020.

In terms of FDI, developing and transition economies attracted a slightly higher proportion of global inflows than developed economies in 2011, while they accounted for 27% of global outflows, up from 12% in 2000 and 15% in 2007.



## Changing Talent Landscape



The vast majority of the world's leading universities remain in the USA and Europe. They continue to attract young budding talent from all over the world, yet many top graduates are now seeking career opportunities back home, especially in emerging markets.

Emerging markets are also a massive driving force behind the global talent pool of tomorrow: India has seen a surge of interest from foreign universities in setting up campuses in the country, as have states like Qatar in the Middle East.

By 2020, the number of Chinese university students is expected to exceed 35 million – that's greater than Canada's entire population at present.



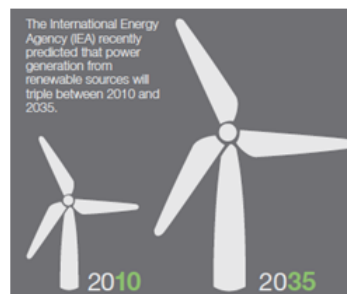
## The Green Agenda



Clean technology will increasingly drive both governmental and corporate growth agendas as customers, clients, consumers, citizens and employees increasingly seek energy-efficient products and sustainable sources of energy.

The International Energy Agency (IEA) recently predicted that power generation from renewable sources will triple between 2010 and 2035. Meanwhile, an estimated 75% of multinational corporations expect their clean tech spending to increase by 2015, according to a survey by Ernst & Young.

FDI in the alternative energy sector has also been on the rise: in 2011, an estimated total of 34,869 jobs were created in the sector globally as a result of FDI, compared with 21,621 in 2010, representing a 61% increase. Project numbers in this sector also increased over the two years, albeit at a slower rate of 22%.



## Evolving Communications



The world is increasingly mobile and social. The tablets and mobile PCs market is witnessing rapid growth, with the number of tablets sold globally growing from less than 20 million in 2010 to more than 63 million in 2011. By 2015, Gartner estimates that the number sold will have grown to more than 320 million.

Just as our business practices are becoming more mobile through tablets and smartphones, they're also becoming more social: Gartner has estimated that 20% of employees worldwide will use social networks as their main form of business communication as early as 2014.

FDI in the software and IT services sector has also seen significant growth, with the number of projects rising by 19% between 2010-11. It is also currently one of the largest high-growth FDI sectors, with more than 3,100 projects recorded globally in 2011.





Theoretical Framework



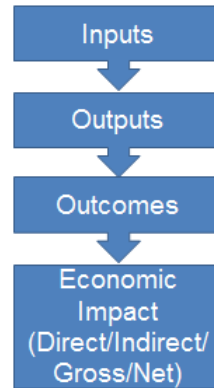
The theoretical framework for measuring the economic impact of FDI is no different from assessing the economic impact of other initiatives or interventions.

Ideally, the following indicators are assessed:

- The average wages of investment jobs relative to the sector/regional average wage
- The expected productivity of the investment relative to regional/sectoral productivity
- Cost per job (if supported)
- Impact on GVA
- Skills level of jobs created/safeguarded
- Assessment of investment/improvements in the regional skills base
- Assessment of impact on R&D
- Conclusion on direct and wider economic impacts by region (to include multiplier effects)

But.....

**DATA AVAILABILITY IS A SIGNIFICANT  
 CONSTRAINING FACTOR**

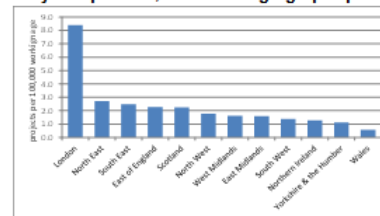


Regional Performance in the UK

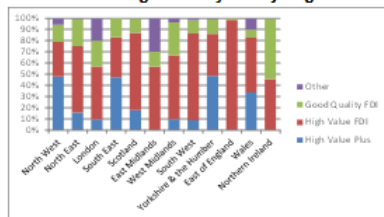


Since May 2011, PA Consulting, OCO Global and the British Chambers of Commerce have been delivery partners to UKTI in the national delivery model. In the year to March 2012, over 1,000 successes were recorded, generating c.65,000 jobs. The geographic spread of projects highlights the attractiveness of London.

Projects per 100,000 working age people



New and Safeguarded jobs by region

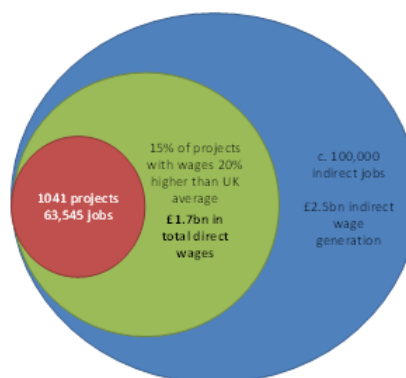


'Quality' of FDI is a key metric to collect in order to understand performance. A lack of agreed definition of 'quality' often constrains this analysis.

Economic Impact



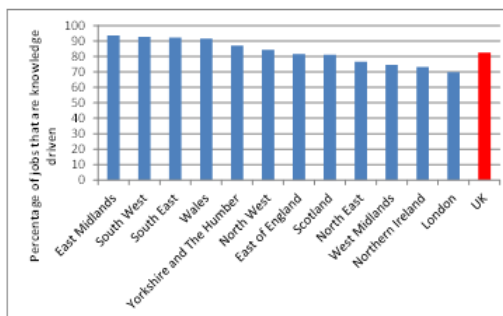
- The impact of FDI goes far beyond the immediate job creation/safeguarding. The wages generated from these jobs are used to generate further positive impacts within the economy and there are further benefits in terms of skills impacts.
- Wage impacts are measured by applying average regional/sectoral wage levels to FDI statistics

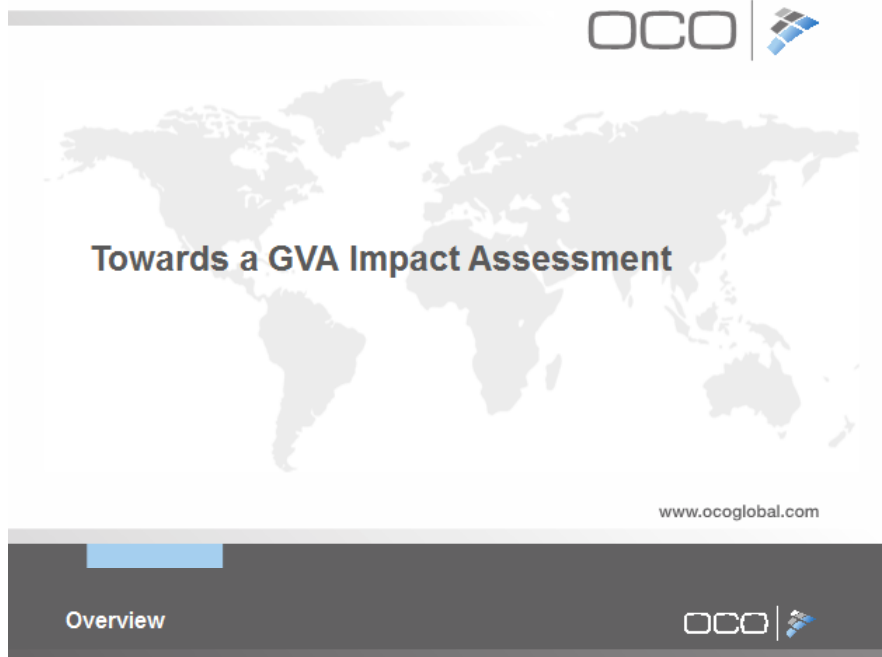



Wider Impact



- In addition to direct benefits, inward investment typically brings about spill overs in technology from new production techniques, training opportunities for the workforce and management ideas brought into the country. Furthermore, increased competition with domestic firms may have a generally positive effect on industrial productivity.
- Measuring this impact comes back to the issue around defining 'quality' noted earlier.






OCO | 

**Towards a GVA Impact Assessment**

www.ocoglobal.com

Overview 

While the number of FDI projects and jobs created are easily calculated and reported, much less is known about the GVA impact of these projects

OCO are developing a GVA assessment of UKTI's annual performance for 2011/12 and projecting GVA from FDI until 2020

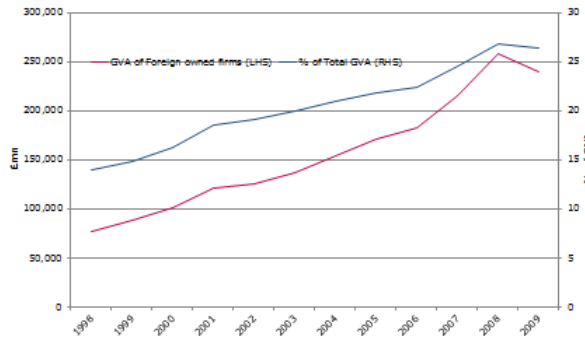
Sectoral GVA per employee from the National Statistics Annual Business Survey form the basis of calculations



Historical performance



- Latest estimates from the Office for National Statistics suggest that in 2009, foreign owned companies in the UK contributed £239bn to UK GVA. This equates to 26% of total GVA, up from 15% since 1998.



Source: Annual Business Inquiry, Office for National Statistics

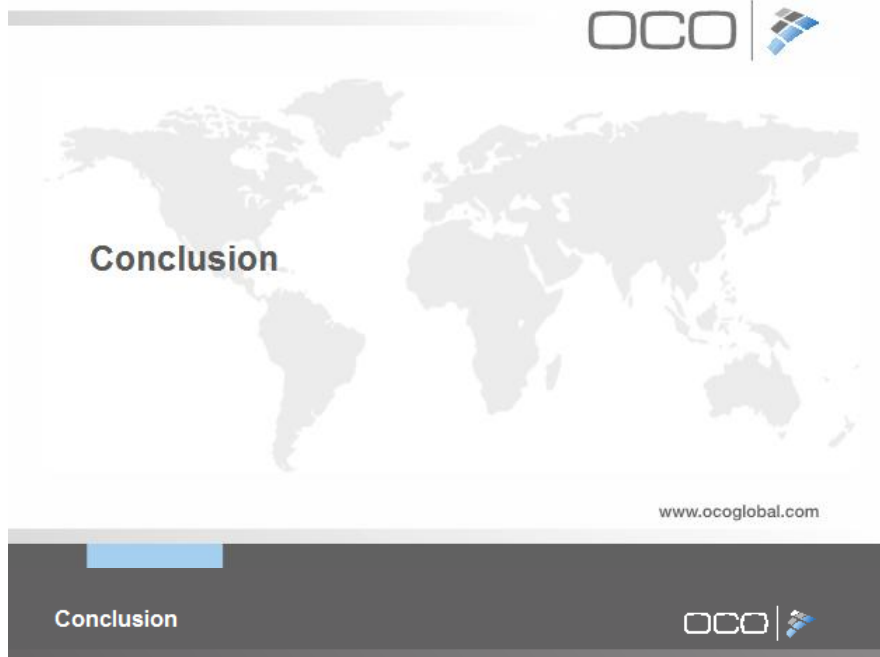
GVA Impact of FDI 2011/12



- OCO's estimates calculate GVA of c.£7.5bn from projects announced in 2011/12
- The impact is largest from the USA, estimated at £1.4bn, reflecting the fact that over 330 projects and close to 40,000 jobs were sourced from the USA in 2011/12
- The GVA impact is greater for safeguarded jobs – these projects account for approximately 57% of the total GVA impact.

GVA Impact by source market

Country	All sectors		
	New (£m)	Safeguarded (£m)	Total (£m)
USA	935.00	480.98	1,415.98
Italy	95.51	91.74	187.25
China	86.14	43.58	129.72
Japan	224.18	260.09	484.27
India	153.40	511.12	664.51
Germany	110.78	179.16	289.95
France	432.27	377.89	810.16
Canada	28.42	61.42	89.84
Switzerland	126.44	70.11	196.55
Australia	92.99	19.89	112.88
Spain	137.99	4.48	142.46
Netherlands	169.34	177.73	347.07
Rest of World	598.74	2,020.35	2,619.08
<b>Total</b>	<b>3,191.18</b>	<b>4,298.54</b>	<b>7,489.72</b>



The image shows a world map with the word "Conclusion" overlaid on the left side. In the top right corner, there is the OCO logo, which consists of the letters "OCO" followed by a stylized blue and white geometric icon. Below the map, the website address "www.ocoglobal.com" is visible. At the bottom of the slide, there is a dark grey footer bar containing the word "Conclusion" on the left and the OCO logo on the right.

- Governments and Agencies are keen to demonstrate the benefits of FDI
- The theoretical framework for impact assessments is similar to accepted evaluation guidance
- Asking the right questions at 'landing stage' is key to be determining likely impact
- Counting the number of projects and expected jobs has traditionally been enough detail for reporting performance
- With increased competition for public finances OCO sense a greater appetite to consider wages, additionality, GVA and spill over impacts of FDI to evidence continued resourcing.



## 9 GLOSSARY OF TERMS

Term	Definition
Absorptive Capacity	A firm's ability to recognize the value of new information, assimilate it, and apply it to commercial ends".
Agglomeration economies	The term economies of agglomeration is used in urban economics to describe the benefits that firms obtain when locating near each other ('agglomerating'). This concept relates to the idea of economies of scale and network effects. Simply put, as more firms in related industries cluster together, costs of production may decline significantly (firms have competing multiple suppliers, greater specialization and division of labor result). Even when multiple firms in the same sector (competitors) cluster, there may be advantages because that cluster attracts more suppliers and customers than a single firm could alone.
Effective Tax Rate	The effective tax rate for a corporation is the average rate at which its pre-tax profits are taxed.
Firm Heterogeneity	An economic model in which firms in an industry are not all the same, as for example a <a href="#">Melitz model</a> (With trade, only firms with productivity above some cutoff level are able to export. Due to <a href="#">Melitz (2003)</a> .)
Foreign Direct Investment	Foreign direct investment (FDI) is a direct investment into production or business in a country by a company in another country, either by buying a company in the target country or by expanding operations of an existing business in that country.
Knowledge Spillovers- vertical and horizontal	A knowledge spillover is a non-rival knowledge market externality that has a spillover effect of stimulating technological improvements in a neighbor through one's own innovation
R&Di	Research, development and innovation. This is a continuum of support from blue skies research, through applied research, to new product/service development and finally innovation (augmenting the product, process or service).
Re-shoring	Re-shoring" (sometimes "Backshoring") is offshoring that has been brought back to the home market.

Term	Definition
Smart specialisation	<p>Is a policy framework combining industrial innovation as well as educational policies (including their design, implementation and evaluation) in order to promote new growth opportunities based on innovation and knowledge. The smart specialisation approach thus aims to support innovation based economic growth strategies at different levels of government and policy making based on:</p> <ul style="list-style-type: none"><li>A more effective spending of public resources, concentrating on certain domains of knowledge or expertise;</li><li>The creation of synergies between public support mechanisms for R&amp;D and innovation, industrial promotion and training institutions;</li><li>The elimination of fragmentation and duplication of policy interventions that may result in a waste of public resources;</li><li>The identification of the strongest or promising domains for entrepreneurship and growth through a careful analysis of the existing capabilities, assets, competences, competitive advantages in a city, region or country; and</li><li>Mapping and benchmarking of cluster including analyses of the role and influence of key players.</li></ul>

