

Attracting international science and technology investments by firms

Rationale and objectives

International investments have grown rapidly in recent decades owing to the rapid rise of global value chains. Production processes have become increasingly fragmented, with goods and services produced in stages in different countries. Firms seek to optimise their production processes by locating the various production stages in different sites and countries on the basis of optimal location factors. While distribution, sales and production activities have led the way, science and technology (S&T) activities and R&D have also been increasingly located and/or relocated abroad.

A first reason for firms to invest in S&T abroad is to customise technologies developed in the home country to fit local conditions. In this case innovation and R&D are largely adaptive in nature. The motivations to decentralise this type of innovation are primarily demand-oriented and related to market proximity and the need to be close to “lead users” and to adapt products and processes to local conditions.

A second and more recent type of S&T investment abroad seeks to obtain access to foreign knowledge and technology. Innovation strategies increasingly rely on global sourcing to tap into new S&T trends worldwide and to develop new ideas that can be implemented around the world. This also explains the trend towards open innovation, whereby firms seek partners for collaboration on R&D and innovation. The location factors for these investments are more supply-driven and are affected by considerations such as the host country’s technological infrastructure, the presence of firms and institutions with benefits that investing firms can absorb, ready access to trained personnel, established links with universities or government institutions, and the existence of appropriate infrastructure for specific kinds of research.

Through their growing investments abroad, multinational enterprises (MNEs) play a major role in the internationalisation of R&D and innovation. While the majority of their investments in R&D are still concentrated close to MNE headquarters, foreign affiliates play an important role in organising their R&D and innovation activities on a worldwide scale. MNEs have become central actors in the global innovation process, and, as a result, “national” innovation activities in host countries are being significantly affected by MNEs’ international location decisions.

Attracting international investments in innovation is a policy priority not only in OECD countries, but also increasingly in the emerging economies, which consider these activities as leverage for their economic development. During the past decade, the latter have increasingly attracted international investment, including in S&T. Changes in the investment behaviour of MNEs largely reflect the changing landscape of innovation and the increasingly global supply of S&T resources and capabilities (see Chapter 1). China and India, for example, with their growing capacity for research and innovation, are now important players in these areas.

The increasing competition from emerging economies for international investments – in both labour-intensive and innovative activities – has raised concerns in some advanced economies about their own longer-term economic future. They question whether the relocation of major production and distribution investments by MNEs (including their own) may not result in a loss of higher value-added activities, such as R&D and innovation-related activities, to the emerging economies. Recent OECD work casts some doubts over this fear, as it did not find any evidence that the offshoring of manufacturing activities “pulls” R&D and innovation away from home countries in later stages. This does not mean that co-location between production and innovation does not matter; some support was found that after the decision to offshore R&D and innovation has been taken – irrespective of previous manufacturing offshoring – firms slightly prefer locations where they have already established manufacturing/distribution activities (De Backer et al., 2016).



There is increasing policy competition between countries to attract international investment by offering individual investors direct incentive packages (e.g. subsidies and tax breaks, including R&D tax credits). There is evidence suggesting that such incentives may divert investments from one country to another within a geographic region. While there is not yet conclusive evidence that competition to attract international investment has systemic negative effects, policy makers should remain vigilant about potential adverse consequences. Furthermore, spillovers from MNEs do not occur automatically, and complementary measures are therefore necessary to increase the absorptive capacity of domestic firms for the advanced technology of MNEs.

Major aspects and instruments

Innovation has become a key source of growth and competitiveness in OECD countries, and many countries are enacting policies to make themselves more attractive for investment in innovation. A country's attractiveness for international investment is directly determined by favourable location factors such as the size and growth of the domestic/regional market, the availability and skill level of the labour force, the presence of strong universities and research centres, etc.

Governments typically use a mix of policies to attract international S&T investments. These can be broadly categorised under traditional investment promotion policies (Table 1) on the one hand and innovation policies on the other. In general terms, the goal of investment promotion is to create a positive image of the country as an international investment location and that of innovation policy is to foster the innovation performance and outcomes of the host countries.

A successful innovation strategy encompasses several policy domains, with specific measures to attract international investments in innovation. Some national strategic STI plans are explicitly designed to attract foreign direct investment in STI (see the Policy profile on "National strategy for science, technology and innovation"). The Walloon Smart Specialisation Strategy provides a strategic framework for regional innovation and industrial policy and emphasises internationalisation as a top priority in its cluster approach to building new industrial value chains. Ireland's Innovation 2020 plan sets out its goal of becoming a global innovation leader and to increase international engagement in R&D and innovation. The Destination Italy Strategy sketches a coherent national policy to attract foreign investment and improve the competitiveness of Italian firms through 50 measures designed to reform a broad range of sectors, including research and higher education. The Russian Federation released its Innovation Development Strategy (2012-20) with a view to strengthening the integration of its universities into global education and research communities and ensuring the skills gained by graduates of Russian universities are of interest to foreign partners. The South African DST Strategic Plan (2011-16) aims to develop innovation capacity by building worldclass STI infrastructure and making South Africa a strategic international R&D and innovation partner.



Table 1. Investment promotion policies

Function	Objective	Activities
Image building	Create a positive image of the country as an attractive site for international investment	<ul style="list-style-type: none">• Advertising• Public relations events• Mass media campaigns abroad• Investor forums• Maintaining relationships with journalists and business partners• Developing the investment promotion agency (IPA) website
Investment targeting/generation	Create investment leads that target investment projects in specific sectors, development areas or companies	<ul style="list-style-type: none">• Identification of potential investors• Matchmaking• Direct mailing, telephone campaigns• Seminars for targeted investors
Provision of investment services	Pre-investment services Facilitate the international investor's arrival in the country; assist in analysing investment decisions	<ul style="list-style-type: none">• Information provision• One-stop shop registration/approval service• Sectoral analyses• Assistance in obtaining sites, suppliers, etc.
	Post-investment/after-care services Assist international investors in maintaining their business, facilitate re-investment decisions in the future	<ul style="list-style-type: none">• Legal or advisory support to on-going foreign investment projects• Dealing with bureaucracy
Policy advocacy	Improve the investment climate by establishing effective feedback between the international investor and the government	<ul style="list-style-type: none">• Surveys of the business sector• Participation in task forces• Policy and legal proposals to authorities• Lobbying


Source: Piontkivska and Segura (2003) in OECD (2008), *The Internationalisation of Business R&D: Evidence, Impacts and Implications*, <http://dx.doi.org/10.1787/9789264044050-en>.

To be effective, a more traditional approach to inward investment promotion has to be complemented by specific innovation policies. Because of the broad and pervasive character of innovation, countries draw on a broad range of policies and instruments. Major STI policy initiatives in this respect focus on building attractive ecosystems and offering favourable framework conditions for multinationals, on the one hand, and on reforming eligibility criteria to give foreign firms easier access to national support programmes (public R&D funding, tax incentives, etc.), on the other hand (see also the Policy profiles on “Cluster policy and smart specialisation”, “Strengthening education and skills for innovation”, “Labour market policies for the highly skilled”, “Financing of public research”, “Government financing of business R&D and innovation” and “Tax incentives for business R&D and innovation”, etc.)

International investors carefully study the strengths and weaknesses of the underlying determinants of the locations under consideration and typically look for a package of attractive location factors and sound economic fundamentals. The design and implementation of a country's innovation policy depends on the country's characteristics, in particular concerning innovation. There is no “one size fits all” optimal set of policies for all countries or regions.

Recent policy trends

Almost all governments have sought to attract international investments in high-technology industries in one form or another, as these are generally believed to bring greater benefits to host countries due to their large spillover effects. While differences exist across countries, industries commonly targeted are electronics and telecommunications, equipment, pharmaceuticals, aerospace, automotive (manufacturing) and business services and telecommunications (services). In recent years, in addition to this industry-based approach, countries are increasingly considering the growing international fragmentation of firms' value



chains, and are taking a more functional approach by prioritising innovation, S&T, R&D laboratories, headquarters and other decision centres.

Many countries and regions try to position themselves as attractive locations for S&T investments, often with strong marketing, publicity campaigns and network incentives. Recent examples are: the Austrian Global Incubator Network (since 2016), the Strategy for Promoting Investment in Croatia (2014-20), the German International Cooperation Action Plan (2014), the Extraordinary Plan to Promote Made in Italy Products and Attract Investment to Italy (2015-17), Essential Costa Rica (since 2013), SmartInvest in Lithuania (revised in 2015 for the period 2016-20), FDI Attraction Initiatives in Portugal and a programme for SME Internationalisation (2016-20) in Slovenia. National investment and export promotion agencies play a key role in these strategies by disseminating information, identifying and targeting prospective investors, and providing tailor-made investment services. A number of these programmes are developed in close co-operation with the business sector, such as the UK Trade & Investment's (UKTI) Investment Services Team, the Investment and Business Development Agency CzechInvest, and the Hungarian Investment and Trade Agency (HITA). In early 2015, Invest in France and the French Trade Commission, UBI France, have merged, creating Business France as the new national agency supporting international development of the French economy and facilitating international investment in France. In Turkey, a new Investment Support and Promotion Agency is currently in development to increase international awareness and to attract foreign R&D investments.

Croatia and Peru have established centres of excellence, while South Africa has preferred to enter into Memoranda of Understanding with MNEs that invest in domestic R&D facilities. Many countries (Australia, Chile, France, Indonesia, Ireland, Italy, Latvia, the Russian Federation, the Slovak Republic, Spain, Thailand, Turkey, etc.) offer new incentives, or have modified existing incentives, to invest in R&D and innovation, including tax incentives (see the Policy profile on "Tax incentives for R&D and innovation"). A major challenge for governments is to design policy instruments that are open to MNEs, but at the same time optimise the benefits to the domestic economy.

References and further reading

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