

## *Executive summary*

International investment has been an important driver of globalisation and has grown quickly over the last decades due to the rapid emergence of global value chains. Production processes have become increasingly fragmented as goods are produced sequentially in stages across different countries following the strong decline in communication and co-ordination costs. Firms seek to optimise the production process by locating their various production stages across different sites according to the most optimal location factors across countries. While distribution, sales and production activities were the first to lead the way, research and development (R&D) and decision-making activities have also become increasingly (re-)located internationally.

Multinational enterprises (MNEs) have become important economic actors in the global economy because of their large international investments and numerous affiliates abroad, enabling them to shift activities within their multinational network according to changing demand and cost conditions. MNEs also play a major role in the internationalisation of R&D and innovation with their growing investments in R&D abroad. While the majority of the R&D investments are still concentrated in home countries, often close to the MNEs' headquarters, foreign affiliates of MNEs play an important role within the multinational network when organising their R&D and innovation activities on a global scale.

Emerging economies have become increasingly attractive for international investments, including investments in innovative activities. Changes in the investment behaviour of MNEs reflect the changing landscape of innovation and the increasingly global supply of science and technology (S&T) resources and capabilities. China and India, for example, have taken their place as important players with a growing capacity for research and innovation. Consequently, industrialised countries are confronted with a growing competition from emerging economies not only at the low technology end of the value chain, but also increasingly in the more technology- and knowledge-intensive components.

The recent economic crisis has had a significant impact on international investments (in innovation) with major drops in investments abroad; several companies have put new investment projects on hold. Cost savings and consolidation have become a priority especially for investments in developed countries, at the expense of market entry which still seems to be important in large emerging countries.

Almost all governments currently target international investments in high-technology industries (reflecting an innovation industry approach) and in innovation and R&D (reflecting an innovation business function approach) as these investments are generally believed to bring greater benefits to host countries. While differences exist between countries, common industries ‘targeted’ are especially electronics-telecommunications, equipment, pharmaceuticals, aerospace, automobile (manufacturing) and business services and telecommunications (services). Countries are increasingly taking into account the growing international fragmentation of companies’ value chains and implementing a more functional approach by prioritising R&D laboratories, headquarters and other decision centres.

The attractiveness of a country for international investment is directly determined by the advantageous character of its location factors. The literature on attractiveness and location factors is large and diverse and has not resulted in many clear-cut policy implications. There is not a single theory of MNEs but a variety of models that all try to explain the location decisions of MNEs. Likewise, a variety of empirical models have discussed several heterogeneous location factors in explaining the pattern of MNEs across countries. But studies often differ in scope and methodology and discuss different countries, industries and firms and hence report (often) contradicting results.

International investors carefully study the underlying location determinants (strong and weak) of the alternative locations they consider and typically look for a package of attractive location factors which are based on sound economic fundamentals. There is, however, a large diversity among international investments and location determinants typically differ between industries, functional activities, entry modes, internationalisation motives, etc., which explains the need for a more differentiated analysis. Location decisions are in many cases the result of a lengthy and thorough decision process by MNEs because of the typically long-term character and the large investments involved in setting up an affiliate abroad, explaining the need for a stable policy and regulatory framework.

Location determinants in high-technology industries (industry approach of innovation) are the size of the market, the availability of high-quality resources such as scientific infrastructure and the supply of skilled labour, agglomeration effects arising from the proximate location of other companies and public knowledge centres. Cost considerations, including labour costs, appear to be more secondary than in other industries; instead, the quality of the location factors in the host country is much more important.

Looking at specific activities like R&D and headquarters (business function approach) offers complementary insights. Location decisions for more adaptive R&D facilities are primarily demand-oriented and hence related to market proximity, as it is important to be close to ‘lead users’ and to adapt products and processes to local conditions. Location factors for more innovative R&D investments are more supply-driven, consistent with the motivation of technology/knowledge sourcing: the host country’s technological infrastructure, the presence of other firms and institutions that may create benefits which investing firms can absorb, access to trained personnel, established links with universities or government institutions, the existence of appropriate infrastructure for specific kinds of research, etc. The importance of labour costs for R&D personnel remains ambiguous; while being of limited importance until some years ago, some evidence points to a growing importance, particularly in emerging economies.

Location determinants for headquarter services are the quality and diversity of business services and infrastructure, headquarter agglomeration effects, and levels of corporate taxes and wages. Agglomeration effects are observed to play a very important role, as MNEs prefer to locate their headquarters close to other firms/headquarters, preferably active in the same industry.

While falling transport and communication costs have resulted in lower co-ordination costs between activities within MNEs and hence in a lower need for activities to locate close to each other, co-location effects are nevertheless important for specific business functions. Vertical linkages and complementarities motivate MNEs to locate corporate activities together; production activities especially are drivers of functional co-location along the value chain, by attracting particularly distribution/logistics and R&D.

Attractiveness for international investments is a policy priority in most countries: developed countries hope that these new investments compensate for their decreasing comparative advantage in more labour-intensive activities, while emerging countries consider these activities as an important leverage for their economic development. The implementation of countries' active attractiveness policies for a rather limited supply of investments projects has resulted in increasing policy competition between countries. Policy makers should remain vigilant for the negative effects of such policy competition (e.g. bidding wars) and refrain from market-distorting behaviour.

Governments look for a coherent and efficient strategy based on the right mix of policies (reflecting the simultaneous importance of several location factors) and in direct relation to the characteristics of the host country. As such, there is no 'one size fits all' set of policies for all countries/regions as the optimal policy mix will depend on the industrial structure of countries, their innovation performance, their size and institutional organisation, the presence of MNEs, etc.

To attract international investments in innovation, governments need to implement a broad, horizontal strategy that is an explicit part of the country's broader economic/industrial policy. The horizontal character of attractiveness policies for innovation is directly related to the broad and pervasive character of innovation; a successful innovation strategy needs to act upon several policy domains, including specific measures to attract international investments in innovation. A major challenge for governments is to design policy instruments that are maximally open to MNEs but at the same time optimise the benefits to the local economy.

Attractiveness for innovation requires close co-ordination/integration of innovation policy and inward investment promotion policy. Innovation policy aims to foster the innovation performance and outcomes of host countries, while investment promotion attempts to create a positive image of the country as a location for international investment. Attractive marketing of the host country that is not based on strong economic fundamentals will, however, be rapidly perceived as non-credible by potential investors. By targeting specific types of investors, formulating marketing and information instruments and providing tailored services, investment promotion can result in better investment outcomes. Investment promotion agencies (IPA), typically in charge of these policies, should work closely together with other government ministries and agencies in charge of science, technology and innovation, industrial, trade, education and labour policy, etc.

As a result of the increasing policy competition, countries are sometimes willing to offer direct incentive packages (*e.g.* subsidies and taxes including R&D tax credits) to individual investors. There is some evidence suggesting that incentives may divert investments from one country to another within a geographic region. Nevertheless, countries should be very cautious in granting incentives to investors since spillovers from MNEs do not occur automatically and may trigger rent-seeking behaviour of investors. Complementary measures are often necessary to increase the absorptive capacity of domestic firms for the advanced technology of MNEs. Furthermore, while there is no systematic evidence of a ‘race to the bottom’, policy makers should remain vigilant about the negative effects of such policy competition.