

Greenfield Development

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Glossary

Agglomeration Economies Savings made jointly by firms through clustering together in particular localities.

Foreign Direct Investment (FDI) Investment in operations abroad by firms which confers a degree of direct control over the foreign operations in question by the investing firms.

Greenfield Development A business investment by a firm which involves setting up an operation in a new location.

Industrial District/Cluster A localized concentration of industrial activities characterized by a high level of interaction between the firms carrying out these activities.

Multiplier Effects The stimulation of additional economic activity in a region arising from the establishment of a new business in that region.

Polarized Growth Tendency for economic growth to be spatially concentrated in growth poles/centers.

Spatial Division of Labor (Intrafirm) Location of different segments of a firm's production chain in different places/regions.

Technology Transfer The transfer of technological and/or organizational know-how between regions/countries.

Introduction: Defining Greenfield Development

The term greenfield development originally referred to economic activities (usually manufacturing plants) which were established on sites which had not previously been developed (except for agricultural purposes). Such sites contrasted with so-called brownfield sites which were, or had been, previously developed for industrial purposes, particularly involving old-generation industrial activities, such as coal mining, heavy industry, and dockland activities. As the term itself suggests, greenfield development in this context generally referred to establishing economic activities either in rural areas or, more typically, on the outskirts of towns and cities.

Over time, the use of the term was broadened to encompass any business investment by a firm which involves setting up an operation in a new location (whether urban or rural) rather than, for example, expanding or acquiring existing operations. This new activity may

involve a net addition to the firm's productive capacity, or simply a relocation of an existing activity from another site, or sometimes a rationalization of a number of existing activities at different sites. These different possibilities carry with them very different implications in terms of their local, regional, and national economic development impacts.

Analysis of patterns of greenfield development bring together two important areas of concern in economic geography – industrial location and regional development. Geographers have long been interested in analyzing patterns of industrial location – including the establishment of new industrial plants on greenfield sites – and the factors which influence how these patterns are shaped. Interregional variations in forms and levels of economic development and the processes producing these variations have also been a major focus of geographical enquiry. The stimulation of greenfield investments in manufacturing (and, increasingly, services) activities in less-developed regions has been an important feature of public policy in most advanced economies, and geographers have made an important contribution in terms of examining the nature, location, and economic impact of such investments.

Factors Influencing Greenfield Investment

Firms take a range of considerations into account in deciding whether to remain in and/or expand existing industrial plants or set up new plants in greenfield locations. Factors which may favor expanding production at existing locations include the prospects of obtaining economies of scale; the fact that it is usually cheaper to add capacity to an existing plant rather than build a new one from scratch; and the simpler management structures involved in keeping production under one roof.

The factors favoring establishment of new plants comprise a combination of the push-and-pull factors normally associated with migration behavior, the former prompting firms to move from existing sites and the latter attracting firms to new sites. Firms may be stimulated to relocate existing production where existing plants are characterized by high costs, labor-relations problems, and obsolescent technology. Alternatively, firms may choose to install additional production capacity at new sites where existing plants are constrained by lack of space, or where plant enlargement may create production-control difficulties, or problems in maintaining effective

communications with an enlarged workforce. Firms may also be attracted to new locations in order to exploit local market opportunities, to reduce operating costs, or to avail of favorable financial incentives, although set against these will be the costs of identifying appropriate locations for new investments and of operating in unfamiliar environments. The establishment of new branch plants in greenfield locations, accordingly, tends to be mainly confined to larger firms with appropriate resources and experience, especially where the new plants are outside the home region of the parent firms.

Greenfield Development and Regional Policy

Much of the early impetus behind greenfield development emanated from the desire of industrial firms to move out of the inner-city locations where most manufacturing industry established in the nineteenth and early twentieth centuries had been concentrated. Such relocation became increasingly common from the 1950s onward and was prompted by a variety of mutually supporting considerations:

- the growth of automobile transport meant that city centers were becoming increasingly congested and polluted;
- space for expansion was at a premium, especially in the light of changing technologies which favored single story over more traditional multistory industrial buildings;
- much of the traditional workforce had been removed from inner-city areas to new suburban housing projects;
- alternatively, new technologies created a desire to access new sources of labor; and
- substantial capital gains could be realized by selling off valuable central city sites and moving elsewhere.

Much of this relocation simply involved a move to nearby suburban areas where adequate supplies of land and labor were available and which were much more accessible to the motorized transport which was increasingly being used by industrial firms for deliveries of both inputs and outputs. However, in many advanced economies, these relocations involved interregional movements, particularly to declining industrial regions or peripheral rural regions where cheap labor and financial and other incentives were available. In Britain, by 1966, 10% of the manufacturing workforce were employed in plants which had moved from one region to another, or in entirely new plants owned by firms headquartered outside the regions in which the plants were located. In France, between 1954 and 1982, industrial employment grew by 368 000 in the underdeveloped west and southwest regions, while falling by

275 000 in the Paris region. These forms of industrial movement were one element of the new spatial divisions of labor which were being created within large manufacturing firms, whereby different segments of these firms' production chains came to be located in different places (depending on such factors as access to resources and level of production complexity), with administrative and research and development functions being located at different places again.

Relocations of existing manufacturing activities were particularly common in the clothing industry which, facing increasing competitive pressures from new technologies (e.g., synthetic fibers) and new production locations overseas, sought to cut costs by moving production to cheap labor sources. Thus, there was a spectacular movement of the US clothing industry from its original base in New England to the southern states; while in the UK, there was also a significant movement of the cotton and woollen textile industries from their original bases in Lancashire and West Yorkshire to peripheral rural areas.

This interregional movement of branch plants was not confined to declining traditional sectors. Many of the new consumer industries of the twentieth century (such as electrical and electronic products) also from an early stage began to set up production plants – mainly in final assembly – in areas where cheap (and mainly female) labor was available, particularly where this was accompanied by government location incentives, such as financial grants, tax concessions, labor subsidies, and the availability of serviced sites. Indeed, the attraction of branch plants through such incentives became the standard formula for the new regional development policies which were commonly introduced in advanced economies during the recessionary 1930s and then extended in the decades after World War II.

Thus, in Ireland, substantial grants were introduced in 1952 to encourage the establishment of manufacturing plants in the underdeveloped western part of the country; while in Italy, substantial funding was made available in the 1960s to encourage industrial firms based in the prosperous northwest to set up branch plants in the very poor southern part of the country.

Virtually from the beginning, therefore, regional development policies in advanced economies became strongly associated with the attraction of inward branch-plant investment to greenfield sites within lagging regions. The logic involved in these policies was simple (if not, indeed, simplistic): manufacturing industry was seen as the essential driver of economic development in advanced industrial economies; in regions where traditional industries were in decline, the formula was to replace these industries with modern industries which were emerging elsewhere. In peripheral rural regions which had no previous experience of industrialization, this was seen as evidence of a lack of indigenous natural or

entrepreneurial resources, in which case the introduction of manufacturing employment from outside the region was seen as the most direct route to raising average living standards to the levels prevailing elsewhere.

Transnational Corporations and Greenfield Development

Up to the 1960s, regional development policy was largely focused on inducing interregional industrial movement within national economies. With the rapid growth in foreign direct investment (FDI) by transnational corporations (TNCs) from that decade on, regional policy became increasingly focused on attracting the branch plants being set up by these corporations in various parts of the world. Such investments are attractive for a number of reasons. Driven by the forces of globalization, the absolute volume of mobile FDI has expanded enormously over the last 30 years. Being inherently footloose, such investment is amenable to being attracted to locations which can provide an appropriate package of attractions. TNCs tend to be to the forefront of technological innovation, so their production plants are in little danger of suffering obsolescence and might, indeed, function as sources of technology transfer to local businesses. Also, some TNC branch plants are very substantial operations which can bring substantial employment benefits to host locations. In addition, new production and communications technologies and new organizational structures have enhanced the ability of TNC branch plants to perform effectively in noncore locations, and have widened the range of possible functions which can be moved to such locations.

An important consequence of the latter point is the growing tendency on the part of TNCs to include service activities in the portfolio of projects potentially available for location in lagging regions. These include data processing, telephone call centers, and back-office administrative functions. In the aftermath of the creation of the Single European Market in 1993, many TNCs have been restructuring their European operations, one of the results of which is the rationalization of back-office functions into fewer 'pan-European' centers which, thanks to the proliferation of new information and communications technologies, have in many cases been set up in peripheral regions where cheap labor and investment incentives are available.

Locational Patterns of Greenfield Investments

The locational patterns associated with greenfield investments in lagging regions have been quite diverse. When regional policy first became a major issue in the advanced

economies in the 1960s, it was strongly influenced by theories of polarized growth which were prevalent at that time, and which argued for the concentration of new developments in what was hoped would become self-sustaining growth poles or centers. However, political problems quickly fell in the way of attempts to implement such policies. The main problem was related to the idea that, in order to achieve sustainability, growth centers would have to reach a certain minimum size in order to generate substantial agglomeration economies. This in turn implied that the number of centers selected would have to be small. This predictably generated a negative reaction from the majority of urban centers in lagging regions which were not designated as growth centers under this policy. Thus, in southern Italy, a growth-center policy introduced in the 1960s became increasingly diluted under local political pressure until eventually so many towns had been designated for development that the policy became meaningless.

In Ireland, by contrast, a proposed growth-center policy was rejected by the government in the late 1960s (again, mainly in response to political protest) and, instead, a very ambitious program of industrial dispersal was introduced in the 1970s. Ireland's accession to the European Economic Community in 1973 was accompanied by a major acceleration of inward investment, and the government set out to distribute this investment as widely as possible throughout the country. The main methods used to achieve this objective were an extensive program of advance (ready-built) factory construction combined with spatially variable grants to guide industrial projects to particular locations. This policy worked quite well for a while, and by 1980, virtually every town in Ireland of any size had acquired at least one significant industrial project, most of them foreign owned. However, the policy ran into difficulties in the recessionary 1980s when industrial contractions and closures became quite common without an adequate flow of replacement projects.

It is possible that widespread dispersal could have materialized even without the government's advance factory and variable grant measures. There was growing evidence in the 1970s of corporate branch plants actively seeking out locations in previously unindustrialized areas rather than in established urban centers. Apart from lower site and service costs, a key factor in this locational avoidance was the desire to access labor with no previous industrial experience and, in particular, no contact with trade unions. This had been made possible by the deskilling of manufacturing work (especially through the development of assembly-line technology), which meant it could be performed effectively with minimal training.

Subsequently, a desire to avoid competition for workers became another important reason for firms to set up greenfield operations in small rural towns. This has been a key feature of the clusters of component suppliers

which have developed around the set of Japanese automobile assembly plants which were established in the American Midwest in the 1980s and 1990s. These suppliers are mainly located within 4 h driving time from their focal assembly plants, and in most cases are also located individually in small towns about 100 km apart so they do not form overlapping commuting zones.

In declining urban-industrial regions with high population densities, spatial concentration of new industrial plants was the norm more or less from the beginning of regional industrial policy. In former coal mining and heavy industrial areas, with their derelict and blighted landscapes, the typical approach was to provide serviced sites on industrial estates or parks located in previously undeveloped green areas, frequently adjacent to main road routes. In Britain, this was frequently done in conjunction with the many new towns built after World War II to resettle people who had been living close to the now-closed or greatly reduced mines and smelters. The idea was that these towns would be self-contained units, with adequate employment provided in adjacent industrial estates, so that inhabitants would not have to commute long distances to find work.

Economic Impact of Greenfield Development

In general it can be said that the economic development impacts of greenfield investments in lagging regions have been disappointing. Frequently, the benefits of such investments are of the static variety (involving a once-off increase in output, employment, and wage payments) with few long-term dynamic effects, such as technology and know-how transfer, creation of local linkages, and spawning of spin-off firms. There has been limited creation of local linkages as branch plants have typically sourced their inputs from outside the region, frequently from affiliate units of the same corporation. Technology transfer has been constrained by the low skill levels in branch plants, the fact that, typically, they involve only a single stage of the overall production chain, and their low use of local suppliers. Surpluses generated have been mostly transferred out of the region rather than being reinvested locally.

Even consumer-multiplier effects have been constrained by the low pay levels in many branch plants, which in turn is linked to the high levels of female employment in these plants. Policies which were designed to attract replacement jobs for those lost by the menfolk in the coal mines, the steel mills, and the shipyards instead had the effect of attracting jobs in such areas as clothing and electrical assembly targeted at women workers whose inferior social position meant they could be paid much lower wages.

Greenfield developments which have little economic interaction with the wider regional economy in which

they are located are termed enclave developments. Even where branch plants do develop linkages with local firms or institutions (which becomes more likely the longer the branch plant is located in the region), sometimes the firms or institutions (e.g., training agencies) in question can become heavily dependent on the branch plant, due to the absence of alternative clients in the region. This may lead to the creation of an extended enclave embracing the initial branch plant and the local suppliers who are largely or entirely dependent on that branch plant. Ultimately, the entire region may become dangerously dependent for its welfare on a single major branch plant whose long-term stability will always be in doubt (a situation referred to as regional capture).

Regional Implications of New Trends in Transnational Investment

Recent changes in the nature and organization of transnational investment carry with them varying implications for the prospects of TNC branch plants developing increasing linkages with the regional economies in which they are located. There has been a growing trend for many TNCs to confer greater functional autonomy on subsidiaries, in order to enhance their flexibility and learning capabilities. In theory, this should allow subsidiaries to make greater use of local suppliers and other local resources such as research institutions. However, the fact is that many peripheral regions lack the technological capability to support the sophisticated supplier or research base which TNC subsidiaries require, and the general view is that this type of subsidiary development is only likely to occur where subsidiaries are located in already advanced regions. Indeed, it has been suggested that low-tech subsidiaries may be closed down altogether (especially in the light of increasing outsourcing by TNCs of routine forms of production) or relocated to central regions for the precise reason of enhancing their learning capabilities.

A second major recent trend as regards transnational investment has particularly serious implications for those regions which seen, in inward greenfield investment, their route to a prosperous future. This refers to the fact that the great acceleration in global FDI, which has occurred since the early 1990s, has mainly involved mergers and acquisitions (M&As) rather than establishment of new activities in greenfield locations. M&As rarely entail a net addition to production and employment and, in fact, are more likely to lead to job losses as they normally involve some degree of rationalization of the operations which have been merged or acquired. Furthermore, M&As are more likely to involve activities which are already located or headquartered in central regions.

Even when the focus is confined to new investments in productive facilities (as opposed to mergers and

takeovers of existing facilities), recent trends do not favor greenfield investments in new locations. This is because a growing proportion of such investments (up to one-half in some West European countries at the end of the 1990s) consists of repeat investments in existing facilities. This reflects the fact that, after up to 50 years of transnational investment inflows, the stock of foreign subsidiaries has both built up and matured in many regions, such as Ireland, Central Scotland, and South Wales. As a result, a growing proportion of new FDI is being devoted to the replacement of equipment in established branch plants, the expansion of existing lines of production at these plants, and/or additions to their product lines or range of functions. Of particular importance in this respect is an increasing tendency toward co-location of process/product development with manufacturing production in order to facilitate quicker and more hands-on feedback (previously these two functions tended to be spatially separated, with process/product development carried out in specialized research units). This trend could spell danger for less-sophisticated production activities in low-tech countries/regions as production may be moved to where development staff are available.

Alternative Scenarios

Despite these trends, which, for the most part, tend to favor investment in subsidiaries located in more advanced regions, international competition for inward investment continues to grow as more and more regions come forward seeking to attract mobile FDI as a means of achieving economic development. China has achieved particular success in this respect, due to both the large and rapidly growing size of the domestic market and the availability of very cheap labor for export-oriented branch plants. In Central and Eastern Europe (the so-called CEE countries), various states, as part of their transition to private enterprise following the collapse of central planning in the late 1980s, have been seeking to maximize inflows of capital from abroad. Initially, the main focus was on attracting investment to take over existing brownfield plants (mainly inefficient state-owned enterprises undergoing privatization), but in the late 1990s the emphasis switched to the attraction of new greenfield plants. The increasing intensity of competition for inward investment has meant a growing tendency for regions to outbid each other in making concessions and offers to potential investors. This has created fears of a race to the bottom as localities sacrifice tax revenues, proper planning, environmental concerns, workers' rights, and working standards to entice desperately needed projects, but at the cost of an erosion of local living standards or life quality.

The low operating costs which are the main attraction for potential inward investors offered by China and

Eastern Europe are considerably offset by lower productivity levels and, in any case, provide a poor foundation for sustainable long-term investment. The type of branch-plant industrialization stimulated by low costs and financial incentives rarely generates the kinds of interfirm synergies upon which self-sustaining growth is based. The economic success of prosperous central regions tends to be built around complexes of interdependent firms in particular sectors, with some of these firms involved in export markets while drawing on inputs of equipment, materials, and services from specialized local suppliers. The broad base of such industrial clusters and the inherent dynamics arising from interaction between exporting firms and their suppliers can provide a much more secure foundation for sustainability than the narrow base normally associated with branch-plant industrialization, which typically involves the creation of few linkages with the remainder of the regional economy.

See also: Agglomeration; Economies, Branch Plant; Embeddedness; Foreign Direct Investment; Industrial Districts; Industrial Location; Industrial Restructuring; Regional Development Models; Spatial Division of Labor.

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