SYNTHESIS REPORT

Part of the SSTC-DWTC programme for future-oriented, socio-economic research

Diensten voor Wetenschappelijke , Technische en Culturele aangelegenheden

Relocation, an element of industrial dynamics

a study about

relocation, innovation and employment

by the Universities of KUL and UCL and the Federal Planning Bureau.

Federal Planning Bureau

KUL Faculteit Economische en Toegepaste Economische Wetenschappen

UCL Institut de recherches économiques et sociales

Federal Planning Bureau, december 2000

Auteurs

prof. dr . Leo Sleuwaegen(KUL)
dr. Enrico Pennings(KUL)
Gerry Mommaerts(KUL)
dr. Bart Van den Cruyce(FPB)
Herman Van Sebroeck(FPB)

Statistische & Econometrische behandeling en assistentie

Prof. dr. Henri Sneessens (UCL, IRES)
dr. Shadman-Metha Fatemeh (UCL, IRES)
Stephane Rottier (UCL,IRES)
Patrick van Bunnen (UCL,RIDER)

Voorbereiding en encodering enquêtes

Paul Bernard (FPB), Herman Van Sebroeck (FPB)
Hilde Spinnewyn (FPB),Ysabel Nauwelaerts (KUL)
Vincent Lepage (UCL, Rider), Bernard Massuy (UCL, BASS),
Emile Berckmans (UCL,BASS),
Ann Declerck (NIS)

Taalkundige revisie eindrapport

Chantal Vandevoorde (FPB), Christel Castelain (FPB)

Secretariaat en lay-out

Adinda De Saeger, Brenda Breugelmans, Sylvie Daenen,
Marleen Vrancken, Rosa Van Den Bergh, Lisette Van Parys

Table of Contents

Preface

In the past few years the closures of some well-known companies attracted a lot of attention. These closures went often hand in hand with a transfer of activities abroad. They sometimes also led to considerable social tension. To better understand the process of relocation, the Federal Planning Bureau undertook a number of studies. Two books have been published on the subject, in 1994 and 1997. The research presented in this paper should be seen in the same line of studies. The past research by the FPB has been extensively used by other researchers. Proof of this is provided by the European Commission's report[1] on the competitiveness of European industry. It refers in detail to the Belgian relocation studies.

The start of the present research is found in the submission to a research project of the Department for scientific, technical and cultural affairs (DWTC / SSTC), called "Future-oriented, socio-economic research". The proposal of the study, which was made jointly by the FPB, the KUL and the UCL universities, bore the title: "Analysis of future expectations, with particular regard to employment, as a result of possible company relocations and analysis of the impact of innovation on the restructuring of the relocation process". In this long title, the words "employment", "innovation" and "future expectations" provide the main focus. An international jury approved the project, which included a study based on the latest theoretical developments and on a survey involving 3,000 companies. An advisory committee approved the final version of the scientific report in February 2000.

By way of introduction, it may be argued that the study takes a broader view of the issue of relocation. Relocation does not deserve the negative connotations hitherto associated with it. Although it sometimes involves negative social consequences, it also has positive effects and is often the least worst solution. The study made it possible to differentiate between relocation, size reduction and exit. Furthermore, the study clearly shows that relocation should be considered as a component of industrial dynamics.

This report contains a synthesis and the policy conclusions of the DWTC / SSTC-study on relocation, innovation and employment. The complete scientific report is available in dutch on the FPB's internet site (*www.plan.be* under *Other publications*).

1. COM (1999), no. 465

A. Introduction

The right of a private company to decide on how it produces its output and on its location, where it wishes to develop its activities, is one of the corner-stones of an economic market system. In a world of decentralised information this freedom of choice largely contributes to production efficiency. At least, those are the premises in this document, which never contests that freedom.

These premises imply that, if a relocation occurs, public authorities cannot take direct action. A relocation is defined as a transfer abroad of (a part of) the activities by a Belgian enterprise or its (foreign) mother company. This notion is approached empirically through data obtained in a survey involving 3,000 companies, and on the basis of data on companies having proceeded to collective layoffs. This first approach includes transfers which do not necessarily imply a loss of jobs in Belgium. The second approach is limited to relocations implying job losses in Belgium.

If public authorities cannot take direct action and if it is also not appropriate to create all kinds of obstacles (such as restrictions on capital exports, embargo on imports, ...), it is indeed important to be better able to predict relocations in order to avoid or, at least prepare for unpleasant social surprises in a better way. This is indeed desirable as relocations lead to job losses, especially in industry. During the period 1990-1995, about 15,000 jobs or 28% of the job losses in industry involved a relocation[1]. In the services sector this involved 2,340 jobs, or 6% of the jobs lost by collective layoffs. More recently, some other reloctions have had a large direct impact on employment.

Relocations are not spread proportionally over sectors and companies. They occur everywhere but certain sectors are struck harder than others, thereby changing the structure of the economy. At company level relocations occur more frequently in labour intensive, large, multinational and innovating companies. The link with innovation constitutes a very interesting paradox. We demonstrate that innovating companies show better performances as far as the growth of employment and (especially) of value added in Belgium is concerned. However, as these companies more often invest broad, they also more often transfer activities abroad through the same channel. Investments abroad by Belgian companies are not the only way of relocating. Relocations, such as that of Renault Vilvoorde, may also be organised by foreign mother companies. It appears that subcontracting abroad also often leads to transfers of production.

Relocation is still too one-sidedly seen as the transfer of activities to poor countries because of lower wage costs. However, this image does not represent reality! Most transfers of activities from and towards Belgium take place towards and from other EU-countries, and - more generally - other rich countries. Besides wage costs, access to the local market, tax benefits and know-how also play an important role.

1. See chapter 3

In this document relocations are explicitely situated within a larger context of globalisation. Globalisation not only concerns an increasing integration of the market and growing exports and imports but also an evolution in which production is increasingly organised on an international (especially European) scale. In that respect relocations are closely related to the reduction or stoppage of activities and businesses by multinational companies. The intention here is to save money by reducing the number of companies having a similar production in different countries.

This gives a more correct image of the significance of relocation. Within the group of multinational enterprises active in the European Economic Space a continuous rationalisation is taking place in which a diminishing number of companies are realising their value added. In this process production centers are scrapped in central areas like Belgium, but also in peripheral areas (like Southern Italy), and the activities are extended elsewhere. Besides the closing of businesses there are, however, also entries or extensions of branches of multinational companies (in new sectors or not), certainly in the central areas.

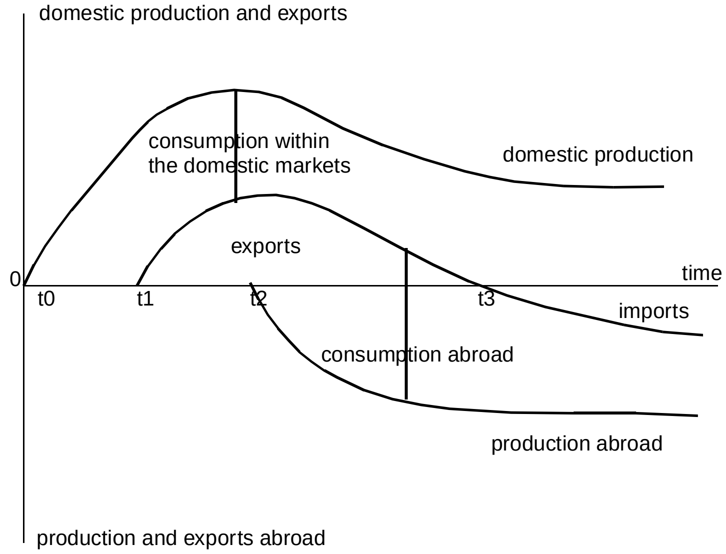
In this process a country or a region may be both winning and losing depending on entries, or precisely exits and reductions of companies prevail in employment or value added creation. In this document attention is paid to the factors slowing down relocation (such as fixed costs, uncertainty, ...). However, a policy aimed at attracting sufficient investment by multinational companies is a valuable alternative. New investments by multinational companies are important as they bring new technologies and other innovations. In general, young (even purely national) companies realise a higher growth of production and employment. This study confirms this often returning empirical result.

In this synthesis we first pay attention to the approach of relocation in the economic theory and the data sources used. The first result concerns the links, which can be empirically established, between relocations and respectively investments abroad, subcontracting from abroad and collective layoffs, as they result from the DWTC/SSTC-survey. Section E gives more details about the countries and the motives for investment, subcontracting and relocation. Then the social consequences of relocation and collective layoffs are treated. In section G we go further into the important role of foreign companies in rationalizations and relocations from and toward Belgium. Section H analyses the determining factors of the risk of relocation, stoppage and reduction, as they result from the econometric analysis. In section I we do the same for the determining factors of the growth of value added and employment in Belgian companies. Section J contains some conclusions.

B. Relocation in economic theory

Traditionally, the spatial distribution of activities is explained using a model of the product's life cycle. According to this model, activities are transferred to countries with lower wage costs at that stage of the product's life cycle where standardisation occurs. The figure below shows a classic product cycle for a company. The cycle begins with the product's design, followed by its entry into the market (t_0), expansion, export (t_1) and, finally, foreign investments which may lead to relocation. Production abroad is market-oriented at first, but production costs (including wage costs) play an ever increasing role as the production process undergoes standardization.

FIGURE 1 - Product life cycle



Source: Adapted using Neil Hood and Stephen Young (1979), "The Economics of Multinational Enterprise", Longman, London, p 61

By repeatedly bringing new products onto the market, companies from rich countries can avoid that their total activities in the homeland follow the eventual downward production trend for one particular product. The results of the survey confirm the importance of radical product innovations for the growth of value added (see furtheron).

However, the increased importance of scale advantages and greater spatial flexibility, resulting from globalization over the last 30 years, have led to a more complicated pattern of spatial activity distribution than the one represented in the earlier figure. Companies are thinking increasingly in terms of multinational networks that no longer duplicate activities in various countries, but integrate them across several countries. In today's global economy, this allows that both research and a part of production – via subcontracting, for example – take place either partially or totally in different countries. Relocation is inevitable in order to come to a global supply chain. Particularly multinational companies (MNCs) are taking advantage of this by concentrating their activities in a limited number of outlets.

This new explanation is important in the case of relocation out of Belgium. This appears from the fact that most relocations imply a transfer of activities to Belgium's neighbours, and from the importance of the "restructuring / globalization strategy" as the motive behind relocation. At the same time, this new explanation implies that relocation has increasingly become a two-way exchange between developed countries. Previously, it seemed to involve one-way traffic from developed markets to less developed countries in pursuit of cheaper production factors.

Spatial network integration therefore also signifies major opportunities for Belgium by virtue of the latter's central location and infrastructure. In this respect, Belgium may be used as a production and export platform in order to cover the broader European or world market. Outward relocation, size reduction and exit are "negative" restructuring processes, whereas inward relocation, growth and entry are "positive" adjustments.

The following table makes allowance for company-specific competitive advantages and also for Belgium's advantages in terms of its location. The table reveals that if the company has strong competitive advantages, but Belgium has a competitive disadvantage as a place of establishment, the company in question is a candidate for relocation. If, however, the company has no competitive advantage, it is probably doomed to close down. However, as long as Belgium provides strong establishment advantages for specific activities, it will attract foreign investors.

TABLE 1 - Industrial dynamics and international competitive advantages

		Transferable competitive advantages of Belgian companies (technology, marketing, organisation, etc..)	
		Weak	Strong
Advantages linked to location specific to Belgium	Strong	Entry of foreign companies	Creation and growth of Belgian companies
	Weak	Cessation	Relocation of (subsidiary) activities

C. Data used

Data on relocations were collected from different angles. We report here about the most important.

The first angle was a written inquiry from January 1997 involving 3,000 Belgian companies ("OSTC-inquiry"). Multinational companies represent 50% of this sample. These are companies with either a foreign parent or a foreign subsidiary. For each cell defined by a classification of size and sector, as many MNCs as non-MNCs were admitted to the sample. In that way maximum comparability between MNCs and non-MNCs was guaranteed. As there are actually fewer MNCs than other companies and MNCs are often large, industrial companies, the sample contained an overrepresentation of MNCs and large, industrial companies in proportion to the total population.

The inquiry contained questions on investment and subcontracting abroad, on the relocation of recent product and process innovations (i.e. in the past ten years) and on the replacement of production through imports. The inquiry also examined the importance and the nature of the innovations, realized by a company over the period 1990-1996, and the impact on employment of innovations and investments abroad. 466 Belgian companies have replied representing a response rate of 16%.

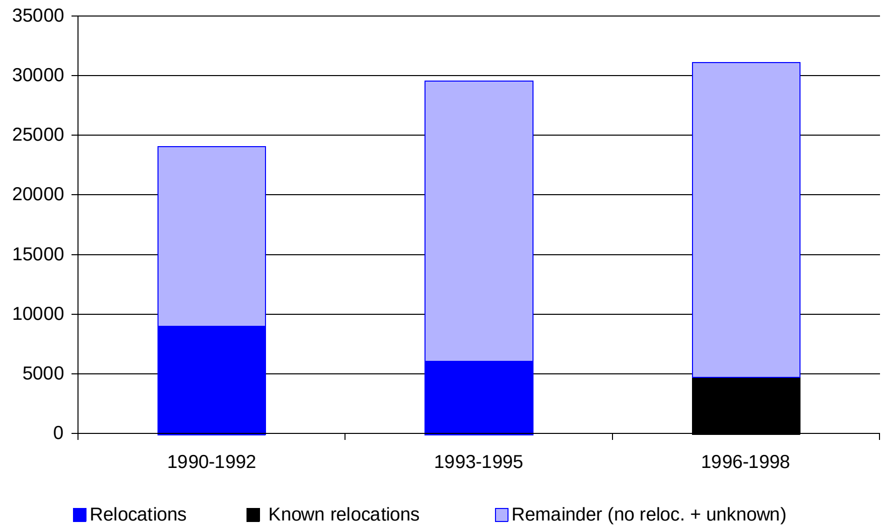
The transfer of activities, reported in the inquiry, does not automatically imply that the company suffered employment losses in Belgium. Another important point is that all respondents were invariably companies which still existed at the end of 1996. By its structure, the inquiry only provided information about *partial* relocations, i.e. those by companies still retaining a part of their activities in Belgium.

In order to gather data about cessations of activities, which did or did not result from relocation, we also used data about companies having proceeded to collective layoffs. All companies with at least 20 employees are obliged to report any dismissal, involving at least 10% of their staff, to the regional job agencies (VDAB, FOREM, BDAB), which, in turn, tranfer this information to the Federal Planning Bureau. Over the period 1990-1998, a total of 712 employers in Belgian industry resorted to collective layoffs, representing an overall employment loss of some 84,600 jobs. Figure 2 represents how these layoffs are spread over time.

The figures show that the Belgian industry has been undergoing major restructuring. Over the period 1990-1998, 15% of employers in industry with at least twenty employers implemented one or more rounds of collective layoffs. All in all, they affected 15% of jobs within this group of companies.

Important additional information about the causes of the collective layoffs and the link with relocation was obtained through an inquiry involving trade union representatives within companies having proceeded to collective layoff between 1990 and 1995. Taking the trade union inquiry as a basis, it was possible to determine that 28% of employment losses through collective layoffs in industry over the period 1990-1995 were due to relocation. In the service sectors, relocation was responsible for less than 10% of the collective layoffs[1].

FIGURE 2 - Employment losses as a result of collective layoffs in industry [2] [3]



Source: data on collective layoffs and trade union surveys

17% of collective layoffs in industry were due to relocations over the period 1990-1995. However, these collective layoffs involving relocation accounted for a 28% share of employment losses. The reason why this figure exceeds 17% is because relocations are more frequent in large and multinational companies.

1. One exception, however, is wholesale trade and trade brokering, in which relocations account for 25% of employment losses through collective layoffs.
2. Over the period 1996-1998, there were no survey data. As a result, employment loss resulting from relocations is probably underestimated there. The table only makes allowance for a number of known cases (such as Renault Vilvoorde, Levi Strauss and Boston Scientific).
3. 'Industry' refers to the manufacturing industry: NACE-BEL sectors 15 to 37.

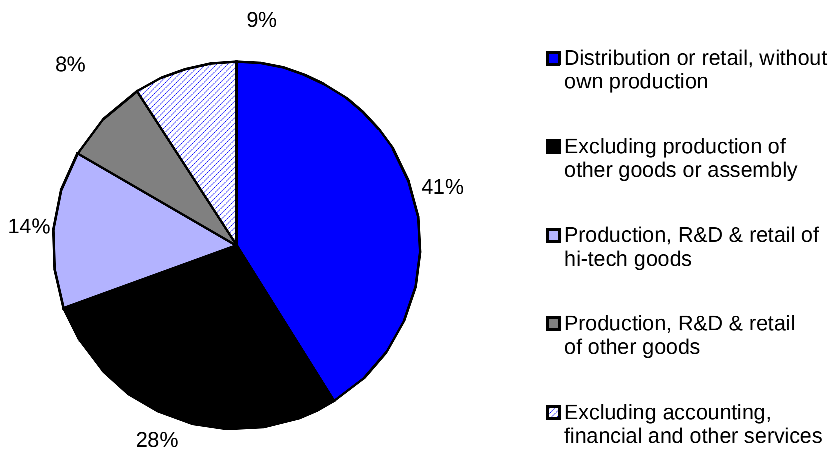
D. The channels for relocation: the role of investments abroad, foreign outsourcing and multinationals

The OSTC-inquiry made it possible to verify in what way activities are transferred abroad from Belgium. In the process, particular attention was paid to the role of direct investments abroad by Belgian companies, the influence of subcontracting from abroad and to the importance of being a part of a multinational group.

1. Cross-border investments

Cross-border investment means that a Belgian company holds more than a 10% capital stake in the creation of a subsidiary, or is making a major investment in existing foreign subsidiaries or outlets. This also covers the take-over of a company or a joint venture abroad. The foreign investments made by respondents to the OSTC-inquiry cover both services and industrial activities. The following figure represents the structure of these investments according to the nature of the activities invested in.

FIGURE 3 - Nature of the activities invested in abroad
(including 198 investments by 75 companies, 1990-1996)



Source: OSTC-inquiry

The figure shows that a significant proportion (41%) of the investments only applies to distribution or retail activities. 28%+8% is connected with the production of non high-tech goods, 14% on the production, R&D, and sales of high-tech goods.

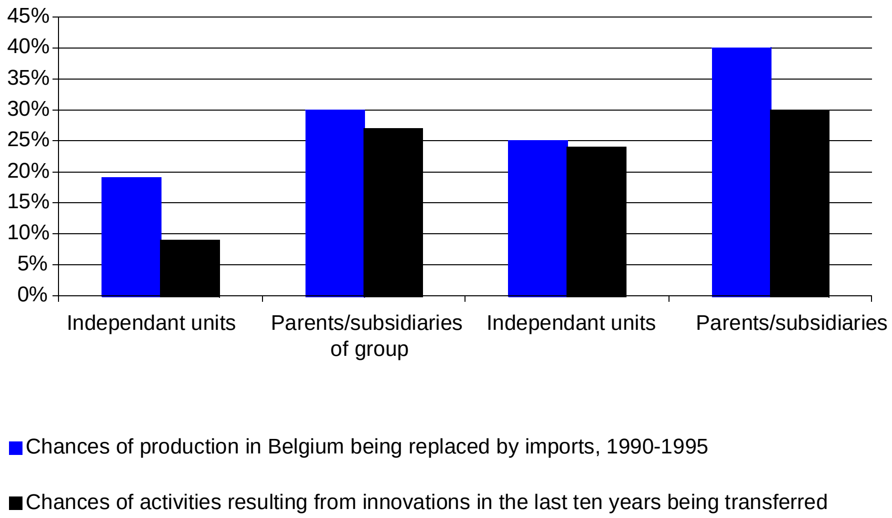
Investment abroad is not the same as relocation. An earlier investigation by the Federal Planning Bureau (1997) revealed that relocation occurred in 25% of the outlets or subsidiaries of Belgian companies with industrial activities abroad. The other 75% mainly involved expansions or a presence abroad required by the local nature of the market or materials.

The OSTC-inquiry approached relocation via a question concerning “the replacement of production through imports” and a question on the “transfer of innovations from the past ten years”. Figure 4 shows that both the probability of the replacement of production through imports as the probality of a transfer of innovations abroad is positively correlated with the existence of proper investments abroad as well as with multinational group membership.

In companies which do not belong to a group it is important wether the company has invested abroad. The chance of innovations being transferred then rises from 9% to 24%. In companies which make part of a group and are themselves authorized to invest abroad, such an investment makes that the chance of innovations being transferred abroad rises from 12% to 30% (not shown in the graph).

However, a Belgian company does not necessarily have to invest abroad itself in order to be able to proceed to a relocation. This investment may just as easily have been made by its Belgian or foreign owner. According to the OSTC-inquiry, among Belgian subsidiaries of industrial groups without any foreign investments of their own, 27% have seen their own innovations transferred abroad. Over the period 1990-1995, 30% replaced their own production in Belgium by imports from abroad.

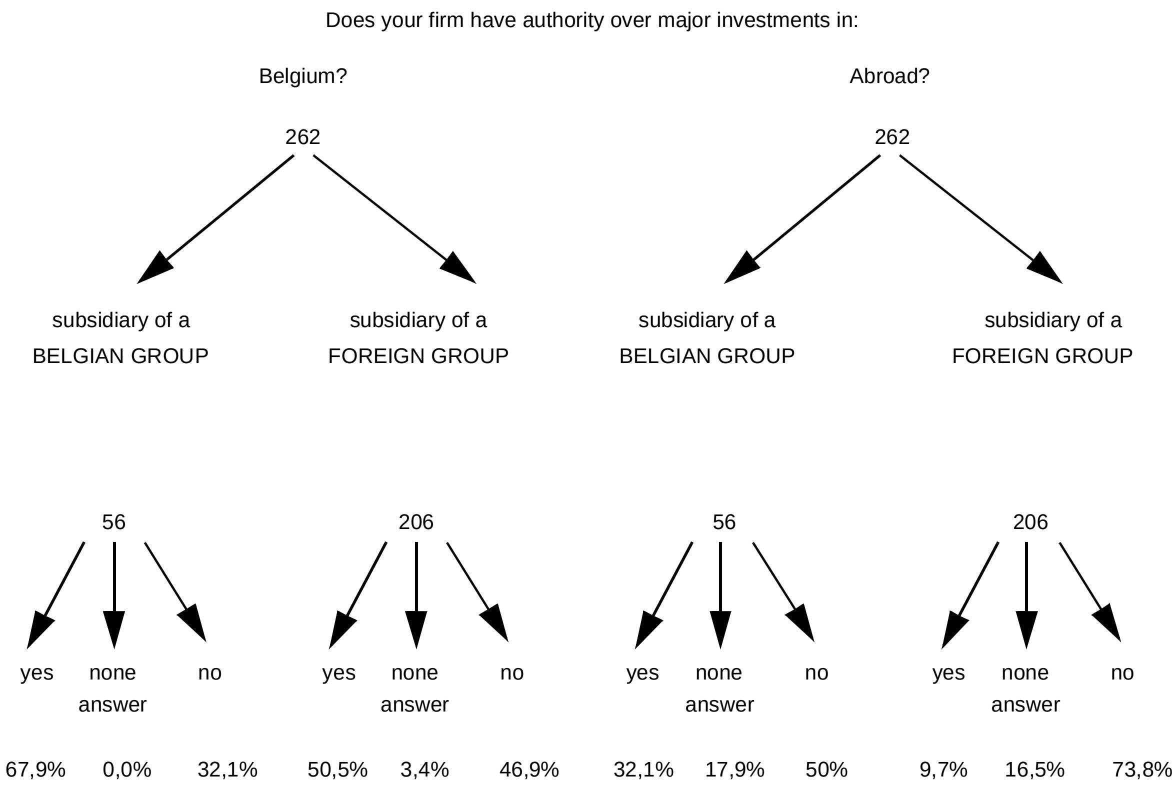
FIGURE 4 - Influence of belonging to a group and of investments abroad *(1990-1996)* on the transfer abroad of activities



Source: OSTC-inquiry

Significantly, 74% of the Belgian subsidiaries of foreign multinationals stated that they had no authority over major investments abroad. Furthermore, the inquiry shows that only 50,5% of these subsidiaries have authority over major investments in Belgium. This is important within the context of the whole location-anchoraging debate. In contrast to this, however, industrial companies which are a part of a multinational group grew faster in terms of value added and employment and were more innovative (see later comments).

FIGURE 5 - Power of decision held by *subsidiaries* over major investments *(management)*



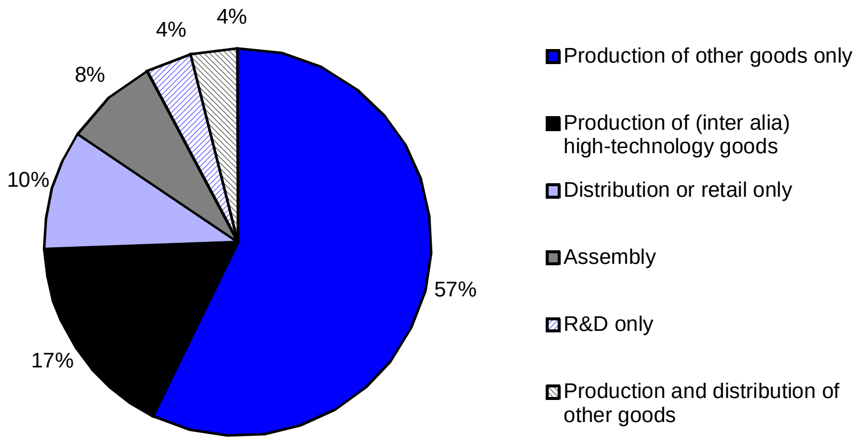
Source: OSTC-inquiry

Subsidiaries of groups (262 out of 466 respondents) are strongly represented in the OSTC-inquiry. 15% stated that they had invested abroad over the 1990-1996 period. In companies without group-membership, this figure is 21%. For group parent companies, the figure is 86%.

2. Subcontracting abroad

35% of the respondents prefer to be supplied from abroad over investing there themselves (27%). In the OSTC-inquiry, outsourcing meant the same as subcontracting activities to a foreign country, for both manufacturing and components. Over the period 1990-1996, subcontracting mainly related to the production of goods (high-tech as well as other).

FIGURE 6 - Nature of activities subcontracted over the period 1990-1996
(339 subcontractions by 116 Belgian companies – response rate to sub-question =70%)

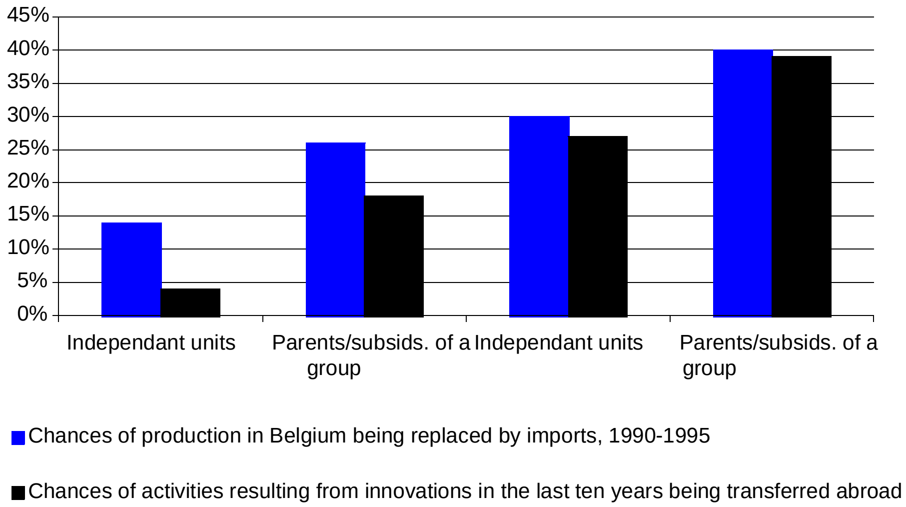


Source: OSTC-inquiry

The companies which subcontract from abroad, show a higher rate of partial relocations[1]. In the case of independent units in industry, subcontracting makes that the chances of production being replaced by imports rose from 14% to 30% over the period 1990-1995. In the case of subsidiaries or group parents, subcontracting increases this chance from 18% to 40%. A similar result applied to the transfer of innovations abroad over the ten years up until 1996. This chance increases from 4% in the case of independent units with no subcontracting to 39% in the case of the members of groups with subcontracting.

1. Full relocations were not included in the inquiry of 3,000 companies considering the fact that only companies still active in Belgium were questioned.

FIGURE 7 - Connection between belonging to a group and subcontracting from abroad and the transfer of part of the activities abroad



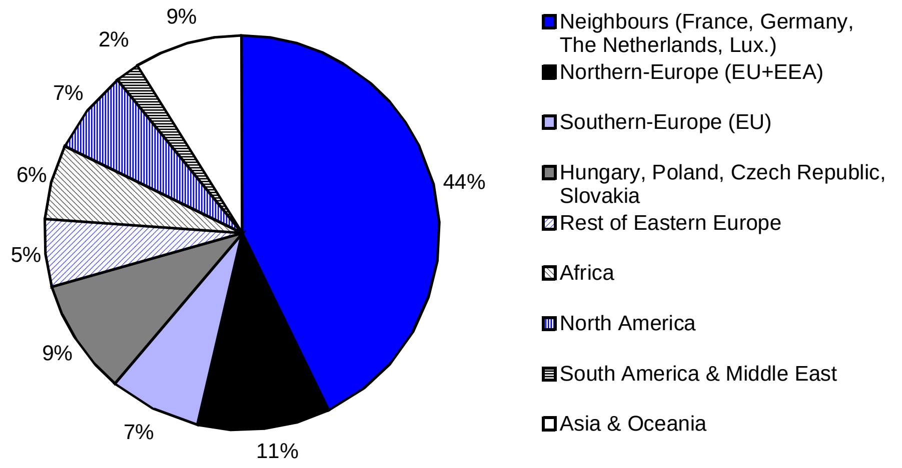
Source: OSTC-inquiry

E. Countries and Motives for investments abroad, subcontracting abroad and relocations involving collective layoffs in Belgium

1. Investments

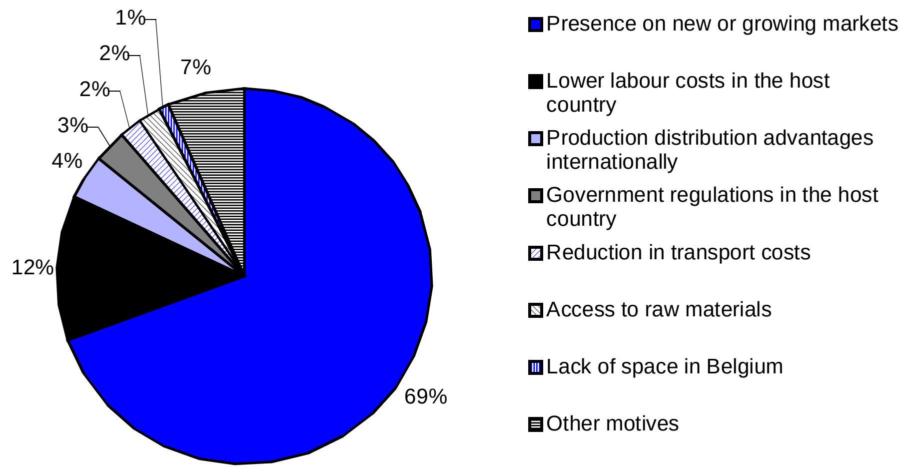
Belgian companies often invest in Europe (44% in Belgium's neighbour-countries). These investments are mainly aimed at enhancing access to local markets - the primary motive in 70% of cases. Wage costs come second. Only 12% of respondents with investments abroad cited wage costs as their primary motive.

FIGURE 8 - Countries invested in, 1990-1996



Source: OSTC-inquiry

FIGURE 9 - Main motives behind investing abroad for 105 Belgian companies

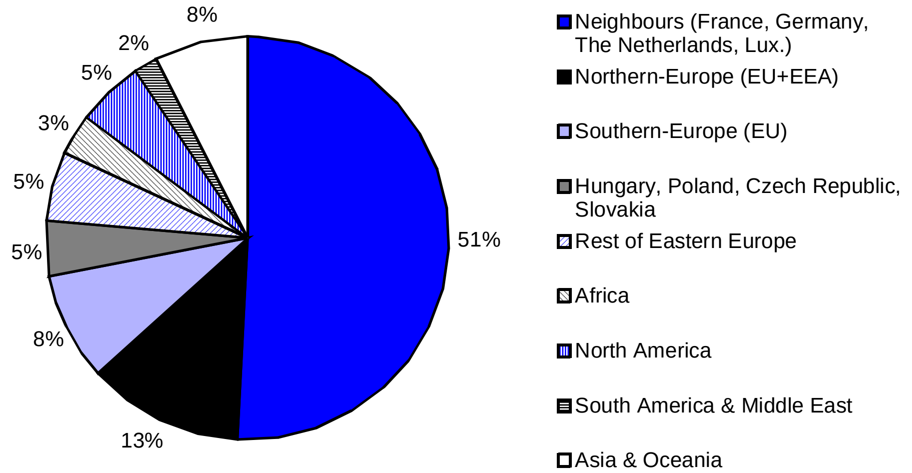


Source: OSTC-inquiry

2. Subcontracting

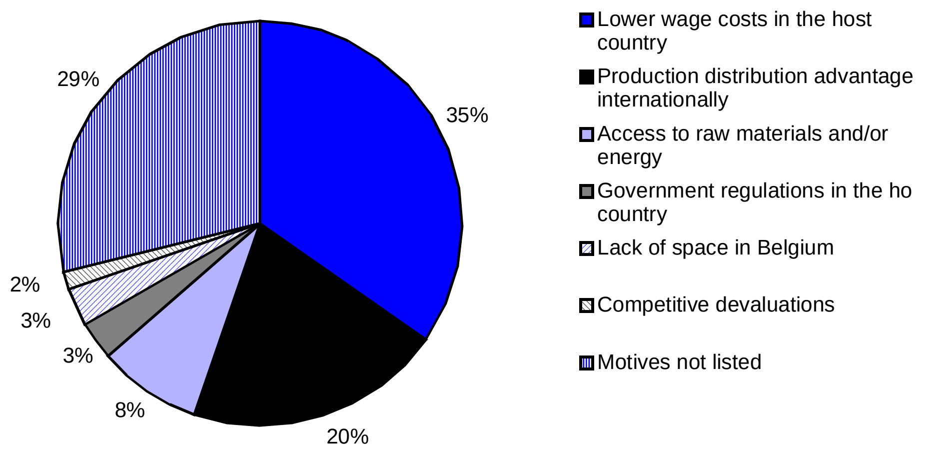
Although proximity to Belgium is more important for subcontracting than investments (51% of subcontracting comes from neighbouring countries), wage costs are the most significant factor behind subcontracting abroad. This is the primary motive for 35% of the respondents subcontracting in this way. 21% cite their primary motive as being "advantages of the international distribution of production". This confirms the theory that the organisation of production is being globalized (or "Europeanized").

FIGURE 10 - Host countries of the subcontracted activities, 1990-1996
(461 subcontracting contracts involving 159 Belgian companies – response rate to sub-question =96%)



Source: OSTC-inquiry

FIGURE 11 - Main motives behind subcontracting from abroad



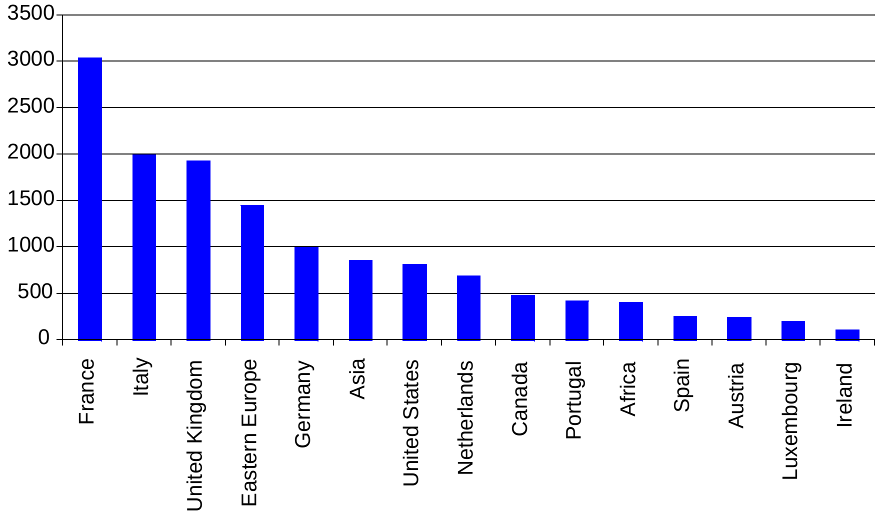
Source: OSTC-inquiry

3. Relocation with collective layoffs

The study also investigated the destination of relocations having led to collective layoffs in Belgium. With respect to relocations with collective layoffs in the industry over the period 1990-1995, the three leading countries were (in order) France, Italy, and the United Kingdom, followed by the countries of Eastern Europe.

This indicates that relocations fit in pattern of production reorganization across Europe. Wage costs play a role here, but so do other arguments such as advantages of scale, market access, subsidies and tax advantages. The significance of Belgium's neighbours as destinations for relocations is the most persuasive argument for the thesis that relocations from Belgium tend to fit in the framework of a redeployment of production (by MNCs) within the European Union.

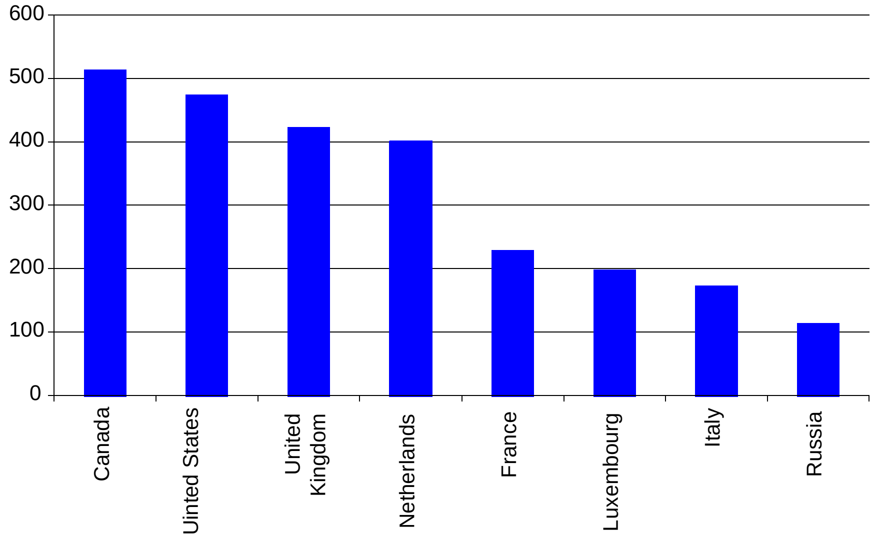
FIGURE 12 - Destination countries for relocations with collective layoffs in industry *(according to the number of jobs affected)*, **1990-1995**



Source: Inquiry involving trade union representatives

As far as relocation in services and trade are concerned, other countries are more significant. English-speaking countries and the Netherlands, which are highly deregulated, are relatively more significant in terms of the relocation of services. On the one hand, this points to a difference in specialization between countries and, on the other hand, to the fact that proximity to Belgium is of less significance for relocation in services. However, the number of employers in services and trade having proceeded to relocations with collective layoffs remained fairly small (28) over the period 1990-1995.

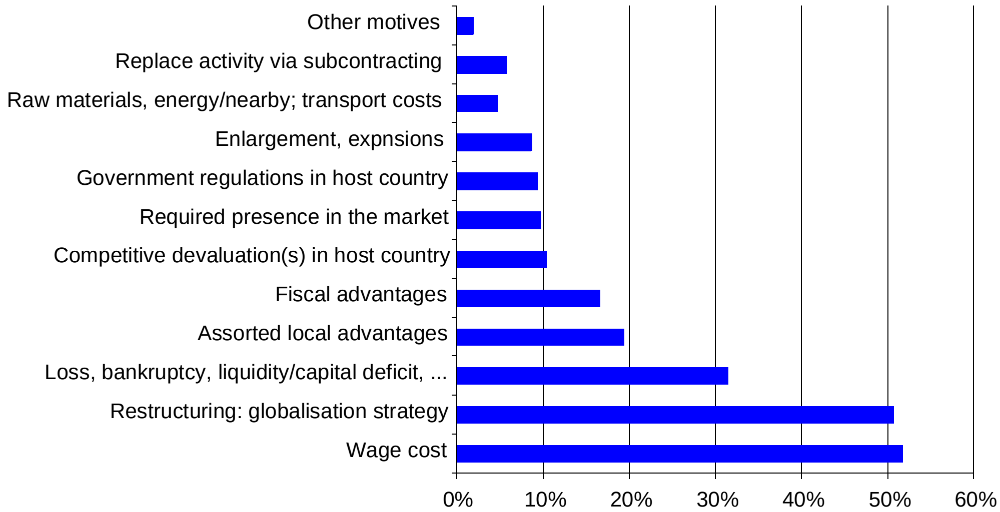
FIGURE 13 - Host countries for relocations with collective layoffs in trade and services *(according to the number of jobs affected)* **1990-1995**



Source: Inquiry involving trade union representatives

The figure below lists the most important motives behind relocations with collective layoffs. In 52% of the cases, high wage costs in Belgium are listed among the top three motives. However, "restructuring / globalization strategy" plays almost as big a role as wage costs.

FIGURE 14 - Motives behind collective layoffs with relocation



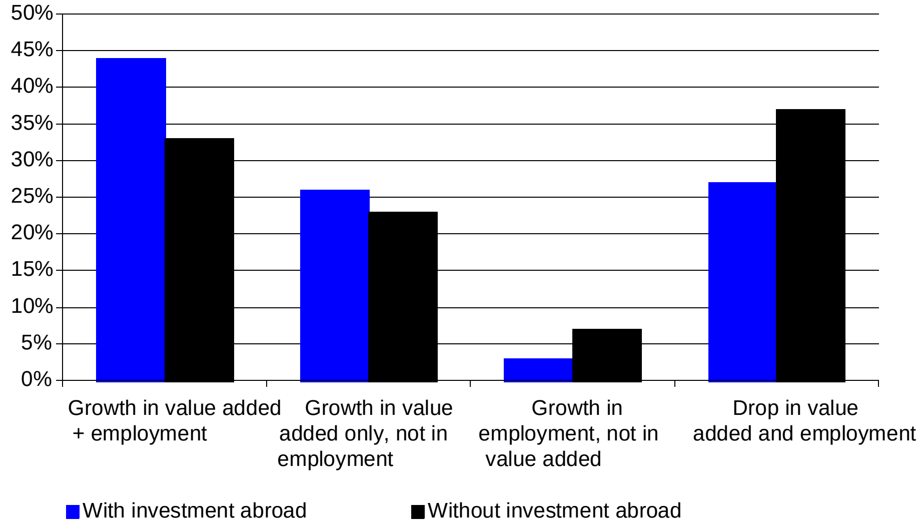
Source: Inquiry involving trade union representatives

F. Direct consequences of relocation, subcontracting and investments abroad

The positive link between subcontracting abroad, investments abroad and relocation should not be misinterpreted. Among the respondents to the OSTC-inquiry, neither companies subcontracting abroad nor companies having relocated activities, had smaller growths in turnover, value added or employment in Belgium. This was shown both by the assessments from respondents and by the correlation analyses carried out on the basis of actual variables.

Belgian companies with investments abroad registered a significantly *larger* growth in turnover, value added and employment in Belgium (see enclosed figure), while the chances of them making investments in Belgium were also greater. According to respondents, investments abroad result in both more exports and imports.

FIGURE 15 - Classification according to the growth in value added and employment over the period 1991-1995 by companies with and without investments abroad



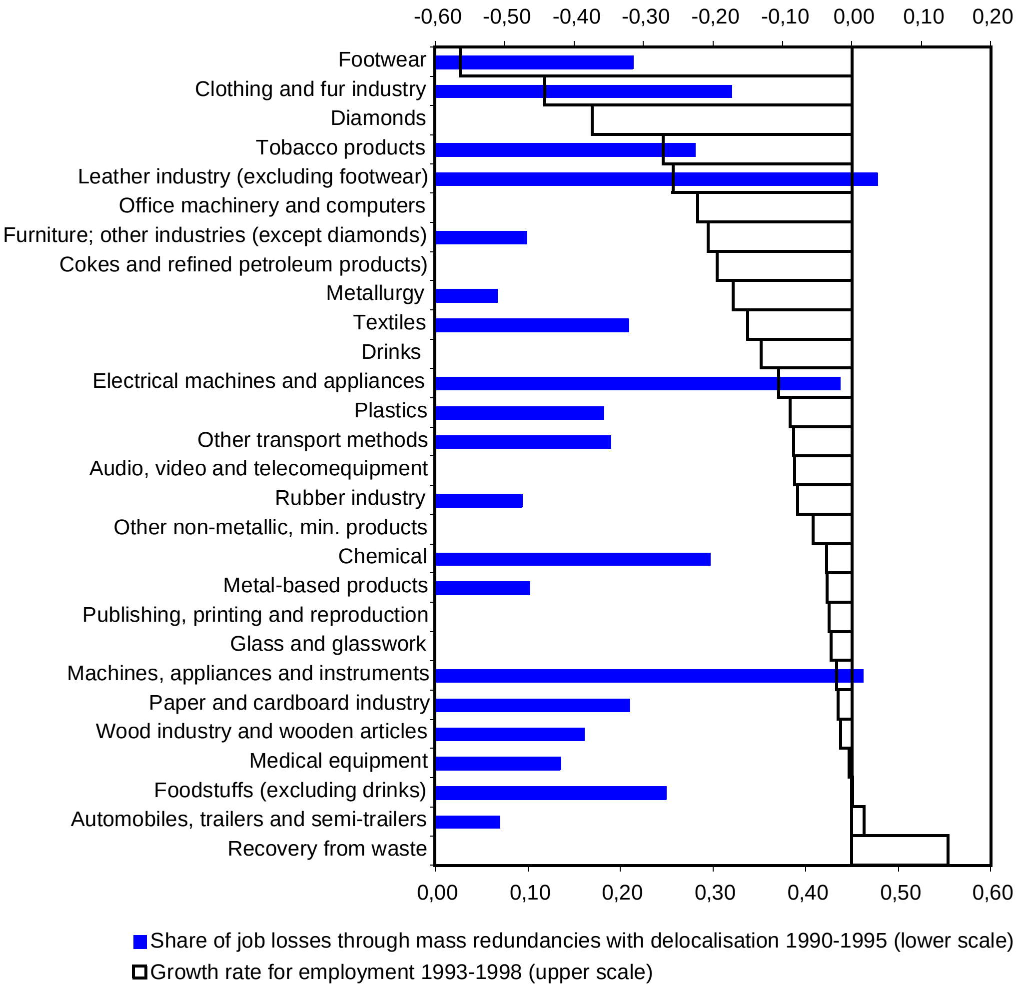
Source: OSTC-inquiry

In many companies transfers of activities abroad did not lead to net job losses in Belgium[1], or, at least no more than in comparable companies have not proceeded to relocations[2]. Via an increase in exports, investments abroad even have a positive net effect on production in Belgium[3] and in any event fit in with the strategy of a number of successful Belgian companies.

1. Although companies may possibly have replaced jobs for elementary school leavers by jobs for higher education graduates. For more details, see section J, point 5: the role of standards of education among personnel.
2. Virtually all industry branches experienced a drop in employment during the 1990s.
3. At least, that was the view held by the respondents to the OSTC-inquiry (see chapter 3).

That does not alter the fact that a number of relocations during the nineties, above all in industrial companies, did lead to employment losses in Belgium (this is far less the case in trade and services). A limited number of branches within the manufacturing industry experienced relatively heavy job losses over the period 1993-1998 on account of relocations and collective layoffs (see figure below). This applies to the leather industry, tobacco products, clothing and fur industry and the shoe industry.

FIGURE 16 - Employment growth over the period 1993-1999 versus the importance of relocation over the period 1990-1995 in companies with at least 20 employees

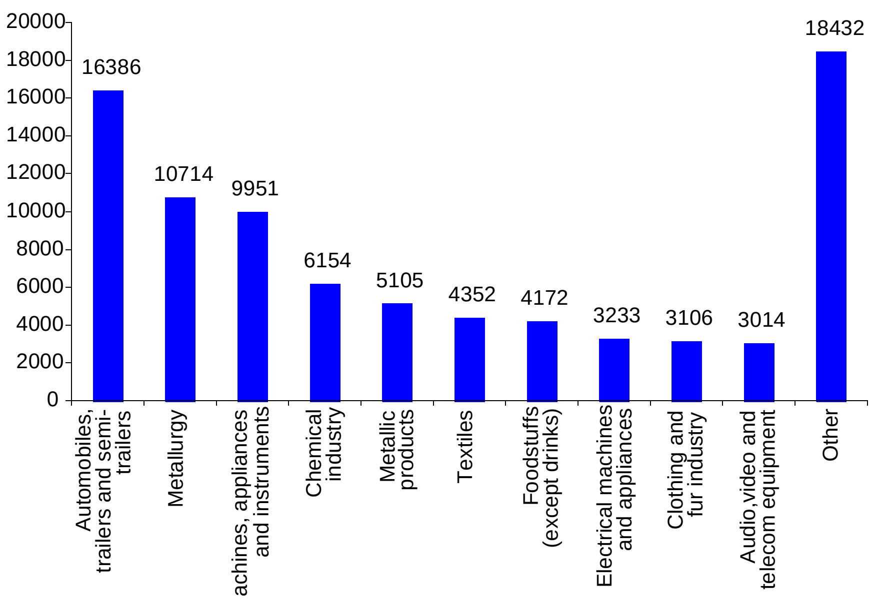


Source: survey involving trade union representatives and National Social Security Office data on companies with at least 20 employees

In other branches of industry, the net drop in employment is small despite relatively high collective layoffs, with or without relocation. Examples included car manufacturing and assembly and the manufacturing of machines, appliances and instruments. These two branches of industry account for a significant proportion of job losses resulting from collective layoffs within industry as a whole (see following figure). However, they show a less bad employment record than other branches of industry.

At company level, there is no difference in the impact on employment of collective layoffs with or without relocation. On average, collective layoffs lead to a one-third reduction in the number of employees in the company affected. This average includes cases in which collective layoffs directly resulted in an immediate cessation of all activities. Collective layoffs occur less frequently within small companies, although those which do occur tend to hit employment harder.

FIGURE 17 - Employment losses resulting from collective layoffs in branches of industry over the period 1990-1998 *(total: 84,619)*



Source: Data on collective layoffs (VDAB, FOREM, ORBEM). Foreign companies in Belgium and industrial dynamics

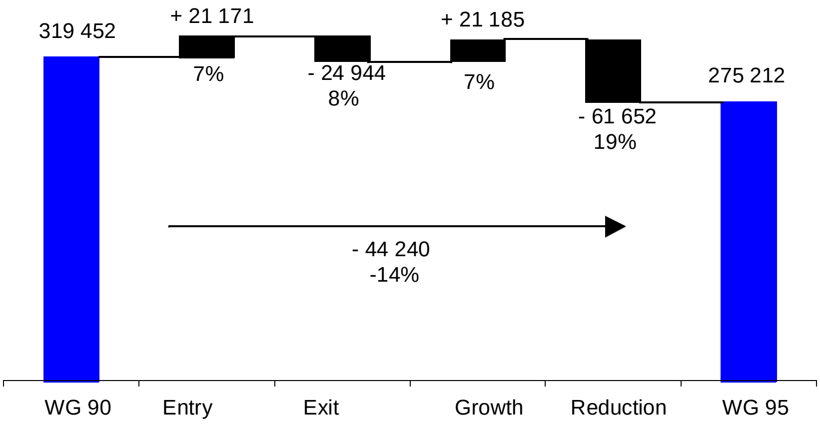
G. Foreign multinationals and the industrial dynamics in Belgium

For decades, numerous subsidiaries of foreign companies have been established in Belgium. Most companies hail from the United States, France, Germany and the Netherlands. Whereas American companies in particular set up new plants in the 1960s (‘green field’ investments), recently France and the Netherlands have been taking over Belgian companies in particular. Belgian industry over the period 1990-1996 underwent significant restructuring, during which company relocation, entry and exit, growth and size reduction occupied an important position.

The foreign influence within Belgian industry is still considerable. Foreign companies account for 36% of employment and for 49% of value added (1995). Nevertheless, foreign multinationals wiped out a large number of jobs over the period 1990-1995 (44,240 net). Alongside the fact that a number of foreign companies left Belgium, size reduction on the part of the remaining foreign multinationals helps to explain this. In order to remain globally competitive, these companies have to increase productivity. Large-scale automation, relocation of activities abroad and subcontracting abroad leave companies in a position to offset high labour costs in Belgium.

The modest entry of foreign MNCs, as presented in the figure below, suggests that Belgium's attraction for location of companies is shrinking. This loss of employment within foreign MNCs in Belgium underscores the finding that Belgium is not fully taking advantage of the development and further growth of global supply chains.

FIGURE 18 - Contribution of firm entry, exit, growth and size reduction to employment changes within foreign MNCS in Belgium, 1990-1995



Source: Calculation based on the Central Balance Sheet Office and the records of foreign MNCS (FPB, KUL)

Despite continued de-industrialization, industrial companies which do not belong to a foreign group managed to create a net 1,980 jobs between 1990 and 1995. This job creation, which is a modest total compared to the 44,240 jobs wiped out by foreign MNCs in Belgium, underscores the hypothesis that growth stems from domestic companies. Yet it is instantly apparent that positive growth on the part of Belgian companies is by far not enough to compensate for the loss of foreign company activities. However, the strong entry and the efficiency of Belgian companies, most specifically in R&D-intensive sectors, suggest stronger growth in the short term. Factors which determine growth are investigated in the next section.

H. Factors determining the chances of relocation, cessation and size reduction of activities

1. Relocation

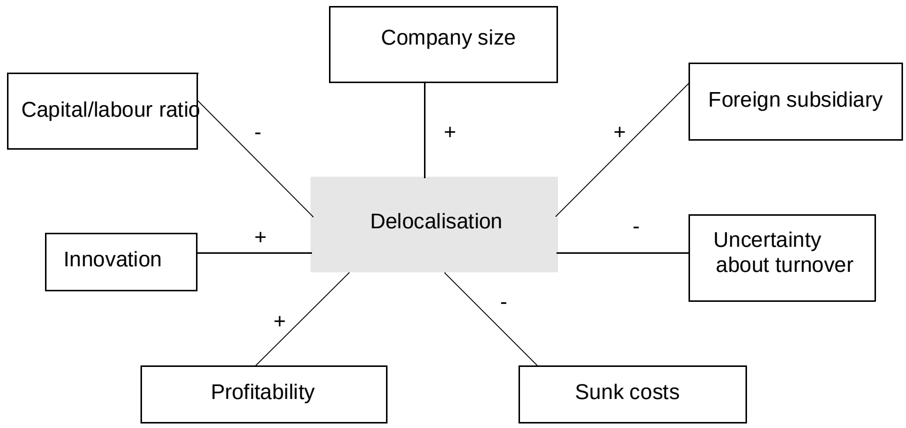
The study not only paid attention to the different forms of relocation and its consequences, but also to the factors which, especially at company level, influence the chances of relocation. An empirical study shows that the following factors increase the chances of a company relocating all or some of its activities:

- Size of companies and whether they (as a subsidiary or parent) belong to a multinational group.
- Combined product and process innovations (innovations requiring the implementation of new processes – a more radical form of innovating than mere process or production innovation). The greater frequency of (partial) relocations in the case of strongly innovating companies does not prevent industrial companies from registering better growth performances with these radical innovations (see later comments).
- Labour-intensive companies. Capital-intensive companies turn less often to relocation[1].
- Greater turnover variability. The greater the fluctuations in turnover, the greater the (optional) value of delaying relocation. A fall in sales can always be attributed to a temporary slump, making it better to continue biding one's time.
- Profitable companies appear more often to initiate relocations through investments abroad. If they carry out collective layoffs, this is more often because of relocation.
- Sectors with low "sunk costs" (fixed, non-recoverable costs) are more likely to embark on relocation.

The figure below reproduces these factors in graphic form.

1. The capital intensity of a company was measured by the ratio of stock of material fixed assets over employment.

FIGURE 19 - Empirical factors determining relocation



2. The determinants of Exit

Alongside factors determining relocation, the survey also investigated factors influencing the chances a company has of ceasing all its activities in Belgium. In that case, the term “exit” is used.

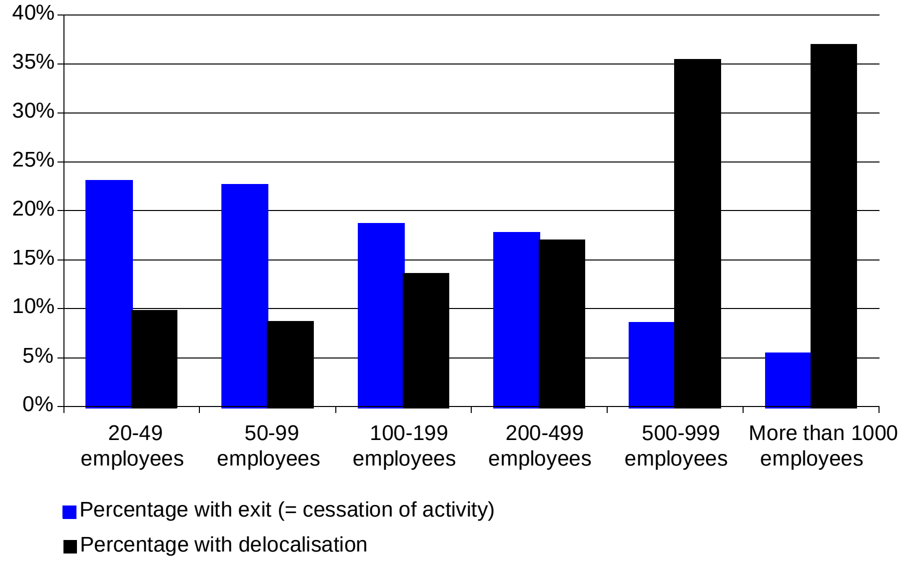
It was found that competition from imports has a positive influence on exit in open branches of industry[1], but that it increases the chances of exit especially in closed branches. A 10% rise in imports has the effect of increasing exit chances in open branches by 12.4% and by 20.6% in closed branches. An increase in exports reduces the chances of exit in closed branches. The investigation revealed that capital investment and strategic niches reduce exits in open sectors.

Estimates for industrial companies proceeding to collective layoffs show that the bigger and older a company is, the smaller the chances are that it will cease all its activities. The fact that a company resorted to relocations during the period 1990-1995 does not mean that there is a greater chance of closure. Within the same group with collective layoffs, capital-intensive companies also have better survival chances in Belgium.

The figure below illustrates one of the crucial results from this investigation. Whereas collective layoffs more often go hand in hand with relocation in the case of large companies, collective layoffs more often lead to the cessation of activities in Belgium in small companies.

1. These are sectors with relatively high imports and exports.

FIGURE 20 - Chances of cessation and relocation in the case of industrial companies that resorted to collective layoffs between 1990 and 1996, according to size category



Source: Data on collective layoffs, inquiry involving trade union representatives, Central Balance Sheet Office

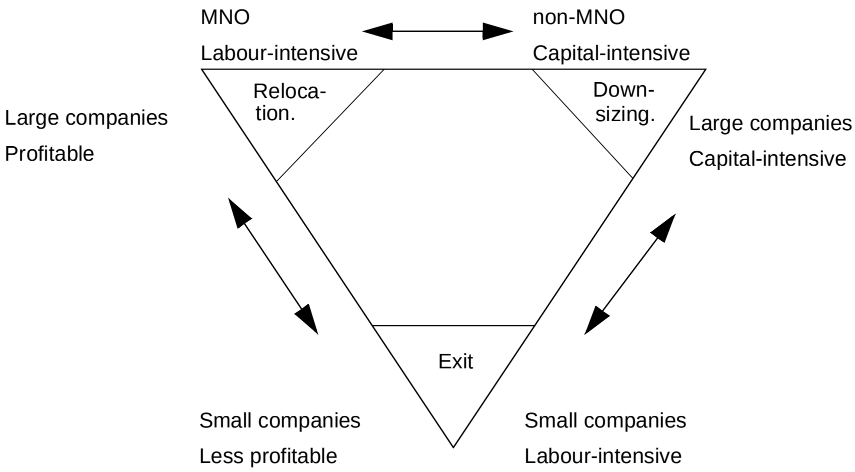
As shown elsewhere in this document, the exit of SMEs can also be caused by the transfer abroad of activities (replacing national production by imports). This study only speaks of a relocation if the transfer abroad is organised by the company itself or by its group. SMEs, which do not belong to a multinational group, are often not capable of organising such relocations.

3. A comparison between three forms of rationalisation: relocation, exit and downsizing

The figure below summarizes the results of the economic study of factors determining collective layoffs accompanied by relocation, cessetion (referred to as exit) and other collective layoffs, referred to as downsizing. The three possible types of collective layoffs (“relocation”, “exit” and “downsizing”) were treated as mutually exclusive alternatives, thus allowing paired comparisons of the determining factors.

Compared to straightforward cases of downsizing, relocation and exit primarily occur in less capital-intensive companies. In contrast with both (partial) relocation and downsizing, exit is more frequent in small companies. Especially multinational companies (MNCs) proceed to collective layoffs with relocation. Their network of outlets gives MNCs the strategic and spatial flexibility for integrating their network and, thus, for realizing scale advantages. The results also show that profitable companies are quicker to resort to relocation. However, collective layoffs within profitable companies rarely lead to a cessation of activities in Belgium.

FIGURE 21 - Characteristics of companies implementing collective layoffs with relocation, downsizing or exit



Relocation is not the most significant restructuring process. Indeed, it only occurs in 21% of the companies which have demanded one or more rounds of collective layoffs. The majority (79%) has proceeded to a reduction of employment (with exit or otherwise) without relocation. The high wage costs have forced companies to substitute labour by capital using methods that include large-scale automation.

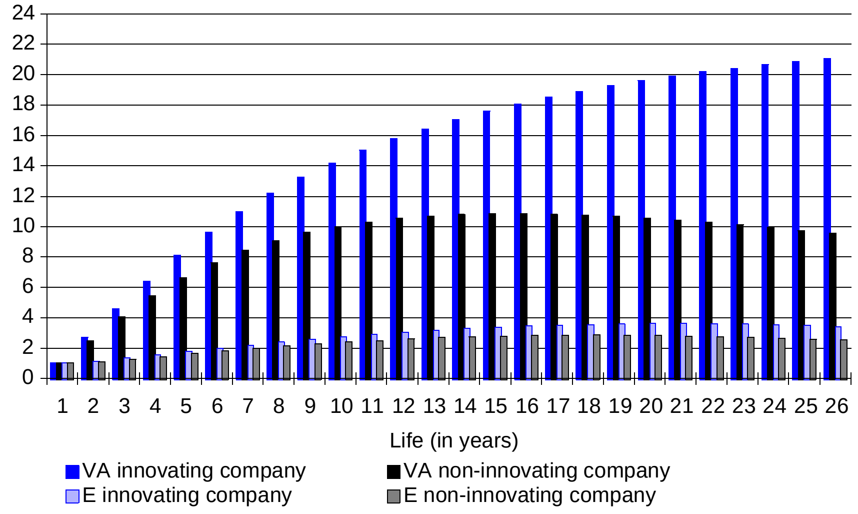
Opposite to this rationalisation, however, stand major, positive adjustment processes, such as entry and growth of existing companies. Over the period 1990-1995, entries primarily involved small, uninational companies. Remarkably, such entries now rather occur in R&D-intensive sectors. The factors that influence growth are treated in the next section.

I. Factors determining company growth in Belgium

1. The Company life cycle and the impact of innovation

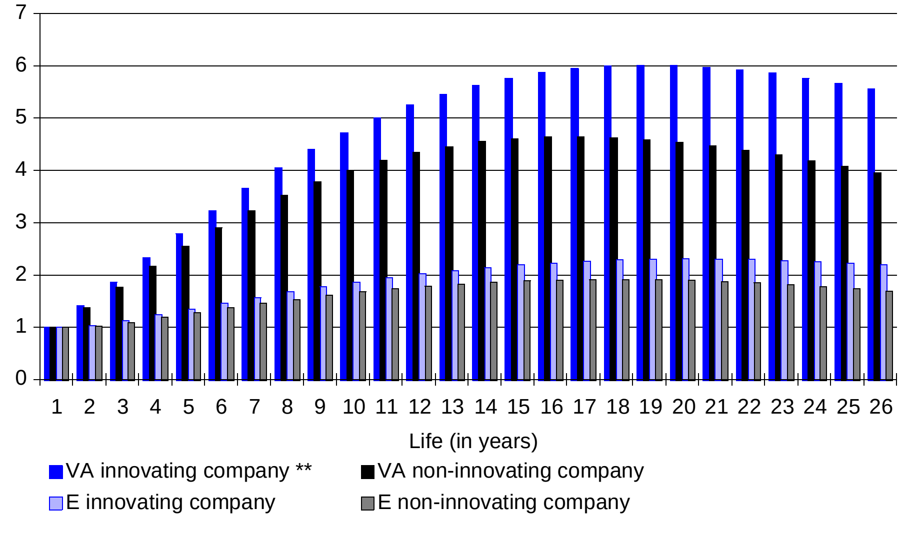
By using coefficients from a growth regression for value added and employment, it is possible to simulate the life cycle of companies in Belgium. The activities of companies from trade and industry experience the delaying, upward pattern that is to be expected from models for ‘learning’ companies. Moreover, young and small companies, both in manufacturing industry and trade, show a noticeably higher growth in value added and productivity. In the process, factors such as innovation, capital intensity and export behaviour have been kept steady. The next figures show the life cycle of firms as it was simulated.

FIGURE 22 - Time schedule of value added and employment in the case of intensively exporting industrial companies
(Starting year: E=50 persons, VA=32 million)



Source: simulation based on a growth regression (Central Balance Sheet Office + OSTC-inquiry figures)

FIGURE 23 - Time schedule of value added and employment in the case of industrial companies primarily imed at the domestic market
(Starting year: E=50 persons, VA=32 million)



Source: simulation based on a growth regression (Central Balance Sheet Office + OSTC-inquiry figures)

** Only those firms that realised *combined product- and procesinnovations* in the period 1990-1996 are considered as innovative. 47,3% of the industrial firms in the OSTC-inquiry realised such innovations.

In the case of non-innovating industrial companies, activity also *decreases* (in Belgium) after a certain life span. Value added achieves a high point between the 14th and 18th year in the case of industrial companies with no combined product and process innovations. In the case of industrial companies that have implemented such innovations, this top is not reached before the 20th year. In the case of innovating companies exporting more than 50% of their turnover, the top comes a good deal later than the life span on which we are able to comment: 26 years.

Over the period 1990-1996, 58.5% of respondents in manufacturing industry claimed to have achieved product-only innovations (i.e. new for Belgium), 53.1% claimed to have achieved process-only innovations, whereas 47.3% claimed to have achieved combined product and process innovations (i.e. new for Belgium). Combined product and process innovations are product innovation involving a technological or organisational modification. In order to be able to make the new product, it is necessary to change the production method. Such innovations are more radical than pure product innovations where the production process remains the same. Therefore, only industrial companies applying combined product and process innovations are considered as innovating companies.

Compared with non-innovating industrial companies, those applying combined product and process innovations registered an extra annual growth by 5.1% (standard margin of error: 1.5%) of value added and by 2% (standard margin of error: 0.8%) of employment over the period 1990-1996. The annual growth effect on value added of this radical form of innovating was considerably greater in the case of industrial companies, which are primarily aimed at exporting, than in companies that are mainly oriented towards the domestic market. 7.5% (standard error: 1.7%) compared to 3% (standard error: 1.7%).

Companies simply featuring product innovations which do not require new processes do not differ from non-innovating companies in terms of growth performances. Process-only innovations have a positive effect on growth in trade. In the case of intensively exporting industrial companies, they result in an extra 3.2% annual growth in employment.

2. Impact of capital intensity

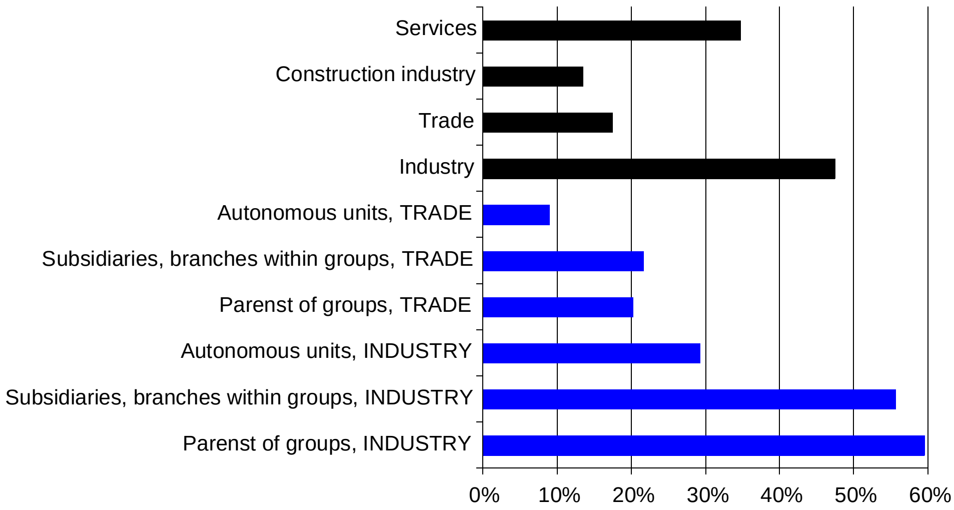
In accordance with the slackening effect on relocations of high capital intensity and high sunk costs, the survey reveals that capital-intensive companies register significantly better growth performances in Belgium. If only those companies that have carried out a collective layoff are taken into account, capital-intensive companies do not grow any faster. This indicates that the chance of collective layoffs is smaller in capital-intensive companies.

Within the same company, a *rise* in capital intensity always has a positive bearing on growth and survival chances. Such a rise in capital intensity indicates either new investments in material fixed assets or layoffs which lead to an improvement in the capital-labour ratio.

3. "Trade-off" between managerial autonomy and growth chances for industrial companies

Various results show the existence of a "trade-off" between managerial autonomy and growth chances for industrial companies. Autonomous units are less capital-intensive, less export-intensive and less inclined towards innovation (except for process innovations). For an industrial company, being part of a group (in Belgium, this almost always means being part of an international network of companies) probably means easier access to capital, innovation and export markets. Moreover, within the category of industrial companies having proceeded to collective layoffs, multinational companies show significantly greater employment growth compared to 'Belgium-only' companies. Such links were not found in the case of commercial enterprises.

FIGURE 24 - Frequency of combined product and process innovations in the case of respondents to the OSTC-inquiry, according to sector and membership of a group



Source: OSTC survey

4. Role of education standards among staff personnel

A positive correlation was found between standards of education among personnel and the chances of a company implementing combined product and process innovations. The figure for higher education graduates shows a positive correlation with the chances of combined product and process innovations, whereas the percentage of personnel educated to lower secondary level at best has a negative correlation with the chances of such innovations over the period 1990-1996.

Another sign of the importance of education among personnel in industry is provided by the rapid advance of the proportion of HE graduates employed in industry, even in proportion to other sectors. Over the period 1993-1998, industry's share of total employment for elementary or lower secondary school leavers fell from 65% to 57% for men and from 38% to 32% for women[1]. In contrast, industry's share of total employment for HE graduates *rose* over the same period from 13% to 16% for women and remained steady at 36% for men.

The general picture that is often sketched out regarding de-industrialization should therefore be tempered. Industry has gained in relative importance in terms of employment among graduates from higher education. Tertiarization over the period 1993-1998 in Belgium appears above all to have hit elementary school leavers. Industry undoubtedly has more and more need for HE graduates, for two reasons: to be able to manage ever more complex processes; and in order to implement innovations[2]. The increasing demands from industrial companies in Belgium for highly-qualified personnel is a new item that indicates both the vitality of a number of industrial companies and their need to innovate and manage complex processes.

J. Policy conclusions

The results of the investigation allow to draw a number of general conclusions with respect to the context, predictability and consequences of relocations and about factors determining the dynamics of companies (entry, growth, exit). Finaly, relevant policy proposals are formulated on the basis of this investigation.

1. Overall context and policy position

Activities are transferred abroad within the framework of production that is being organised increasingly on a European scale. The creation of the single market, the removal of trade-barriers with Eastern Europe and the lowering of transport costs have prompted many multinationals to review their production-chain over the past ten years. Central to this have been the achieving of scale advantages in the core business of companies and in the elimination of production duplication across several countries.

Instead of repeating each and every production link in various countries of the European Union, the number of outlets has been drastically reduced. Remaining outlets are specializing in a single production component. Non-core activities are subcontracted to other European companies. Total production is thus maintained or even increased, but with the number of employees falling and productivity rising.

1. These figures are taken from a random survey of the working population (NIS)
2. Part of this declaration is also dependent on the subcontracting of activities such as (industrial) cleaning and similar to specialist service companies.

This process is also visible in Belgium. Over the period 1990-1996, the number of industrial outlets of foreign multinationals dropped in Belgium. Their relevant employment also fell, whereas Belgian companies achieved net growth in industrial employment. Nevertheless, the number of foreign multinationals in the total figure for value added increased. The number of outlets of multinationals therefore fell, but their importance to the creation of value added increased. It can be demonstrated that relocations, either with or without collective layoffs, are more probable within multinational groups. Within such groups, there are already existing networks of foreign companies and contacts. This facilitates the transferring of production (and of innovations).

Consequently, sufficient attention should be paid at policy level to multinational companies already established in Belgium. Given the importance of these companies to industrial employment and value added creation, maintaining the activity of foreign MNCs has the same priority than attracting new foreign companies.

Most of the countries to which industrial activities are moved are not far-off, extremely low-wage countries. Over the period 1990-1995, relocations involving collective layoffs in Belgium above all headed for France, Italy, Great Britain and near Eastern Europe. Service activities above all moved to the Netherlands and to English-speaking countries.

Since it is unlikely that this process will come to an end in the short term, further relocations can be expected. These may affect larger and larger industrial units. However, relocation is not all one-way traffic. Nor are Belgian outlets always the ones to suffer most. Belgium's neighbours are being hit just as hard by this phenomenon. The situation has already triggered competition between the counties of the European Union in the form of subsidies and fiscal incentives.

Offering subsidies and fiscal incentives in order to retain or attract multinational outlets distorts competition and constitutes disloyal behaviour at the European level. If the European Union is unsuccessful in eliminating subsidies and fiscal regulations that falsify competition, it remains, of course, a second best solution at the national or the regional level. Nevertheless, a general fall in wage costs should be chosen over subsidies or fiscal regulations for individual companies. This is certainly the case for the many SMEs, whose chances of sustained growth are pivotal for any growth in Belgian employment. For high wage costs are an important motive behind relocations involving collective layoffs. In 51% of all collective layoffs with relocation, which cost a total of slightly more than 17,000 jobs over the period 1990-1995, wage costs in Belgium were one of three primary motives. Alongside wage costs, the importance of expanding a sustainable infrastructure further (ports, railways, cheap electricity and communications, etc.), sound framework conditions and stable and pro-active[1] regulations may also be cited. Moreover, these are location factors which can be influenced by the authorities.

1. Under pro-active regulations, the government indicates the framework conditions under which it is possible to work (in the case of social and fiscal regulations, protection against free competition, fair access to networks, energy and infrastructure, environmental and noise standards to be upheld, etc.), but companies are left with enough room to determine the relevant instruments themselves.

Although wage costs are, after production restructuring, the most important factor for relocation with collective layoffs and the subcontracting of activities to foreign companies, it is not the most important motive behind investments by Belgian companies abroad. These investments remain mainly geared to new markets for the companies. In view of the favourable growth performances in Belgium of companies with investments abroad, these investments are certainly part of their optimum growth strategy. Companies with investments abroad transfer innovations abroad more frequently. However, this merely reflects the fact that they also innovate more than other companies. As the study has shown, this is largely beneficial for the growth of their activities in Belgium.

2. Forecasting and preventing relocations and cessations

At the level of a single company, the chances of relocation (but not the precise moment) can be reasonably accurately determined. The first in line for relocations involving collective layoffs (with or without the closure of a number of outlets) are companies that belong to a multinational group and with a labour-intensive production process for the production of a heavily standardized item. Investments in material fixed assets and high variability in turnover[1] are factors that reduce the chances of relocations or cessations of activity.

However, relocations that do not result in a drop in total employment in the company in Belgium also often occur. Such (milder) relocations are more likely in companies returning high profits, with innovations in Belgium and investments abroad.

In smaller companies, companies with low profitability and companies that are not a part of an international group, relocation is less likely. In contrast, however, such companies have a greater chance of ceasing their activities without relocation. This investigation shows that cessations can often also be placed within the context of increased international competition. Therefore, a rise in imports leads to a bigger number of cessations in the corresponding sector.

The investigation of factors that determine the chances of relocation or cessation should not be confused with the investigation of instruments for avoiding employment losses. Being part of a multinational group or making direct investments abroad increase the chances of relocation, but should not be discouraged. Quite the opposite, in fact. Companies with investments abroad have experienced stronger employment growth in Belgium. Being part of a multinational group acts as a stimulus to innovation, capital intensity, export orientation and productivity growth on the part of industrial companies in Belgium.

1. The greater the variability in turnover, the greater the option-value to postpone relocations, since these often require investments in new production units.

The question is whether attempting to prevent relocations is a sound strategy. This is not the case if no alliances are made with foreign companies, or if there is no innovation. Such a strategy eventually leads to the simple rundown of production and the cessation of activities. Yet relocation can be avoided using instruments at the company level. This involves increasing the capital intensity of production (investments in machines and other assets) and switching to more innovative products of which the production processes are not yet fully standardized.

3. Innovation, international alliances and sustained growth of young companies as a motor for growth

Industrial companies that have implemented combined product and process innovations[1] have seen an average annual growth in value added over the period 1990-1996 that was 5% higher than in the case of non-innovating companies. Such innovations are important above all in the case of growth in industrial companies that export more than 50% of their turnover. They result in 7.5% extra growth in value added.

This indicates how hugely important innovation is for the growth of Belgian companies. The chances of a company implementing combined product and process innovations is positively linked to standards of education among its personnel and the amount it exports. Companies that are part of a (foreign or Belgian) group implement combined product and process innovations more often in Belgium.

It is also noticeable that growth in value added (but not in employment) in the case of industrial companies that belong to a group is greater than in the case of autonomous units of the same size and age. This is an extra advantage to set alongside the positive effects exerted already by more innovation, greater capital intensity and export orientation. Being part of a group (in the context of Belgian industry, almost always international) ensures a favourable growth effect in spite of the greater chance of relocation.

The results of the DWTC/SSTC-survey also reveal that subsidiaries of foreign groups very often have no authority over investments abroad or in Belgium. We can therefore argue that, for industrial companies in Belgium that are not in a position themselves to set up an international network of outlets, a trade-off often exists between growth, which implies becoming part of an international group, or retaining managerial autonomy. If there are many miles separating foreign top management from their employees in Belgium, the result may be faster relocation and rationalization. This is good for average productivity from investments and production in the companies concerned, but may mean that the total volume of investments in Belgium is less than optimal.

1. These are product innovations that require the implementation of new processes. The innovations referred to here are “new for Belgium”.

The investigation of factors determining company growth highlights the fact that small and young companies within trade and industry produce higher average growth in value added and employment. At the same time, however, small and young companies are at greater risk of cessation. These effects fit in with the theory of 'learning' companies. According to this theory, young companies grow more because they are able to produce bigger gains in productivity.

The contribution to employment growth does not simply sterm from jobs created in newly created companies because the number of jobs lost due to cessations has increased to the same extent. Higher employment therms mainly from new companies that have achieved growth. Therefore, the number of business creations and their chances of survival, as well as those factors that inhibit the sustained growth of potentially sucessful small enterprises are all important for overall growth.

4. Some concrete proposals

If Belgium wishes to maintain its large-scale industrial outlets, the possibilities of spatial expansion are therefore important. Outlets that are no longer able to expand are more likely to relocate to a different outlet in the European network of multinationals. Moreover, the physical costs of transporting raw materials, semi-finished products and end products remain significant, because production will probably become organised even more markedly along international lines. This calls for well-developed port, waterway and railway infrastructures.

For services and smaller-scale industrial activities, in which cessations and size reduction hit home harder than organised relocations, location factors such as wage costs and stable, transparent and pro-active regulations are far more important.

One location factor that is always important is the capacity of companies to implement innovations in products and processes. The importance of *combined product and process innovations* for growth by industrial companies is clearly demonstrated. The study reveals that standards of education among staff have a positive influence on the probabilities of such innovations. If a company with a high number of elementary school leavers and / or workers still manage to innovate and export intensively, its chances of growing will also be higher. The implication here is that not only mere standards of education among employees are important, but also the climate within companies, openness and permanent training for all employees (including elementary school leavers).

One of the most important reasons for taking an interest in the presence of multinationals is precisely because Belgian companies operating as parents or subsidiaries within such multinational groups focus more on innovation (i.e. new to Belgium) than Belgian companies which operate independently. Within these companies, there is also higher productivity growth than in non-multinational companies.

This raises a serious paradox. In order to maintain its chances of growth ultimately, an industrial company in Belgium is indeed obliged to try and join an international group or develop its own international group. This allows it to take advantage of an international network that facilitates innovation, exporting and the funding of investments. At the same time, however, the study revealed that Belgian companies that belong to foreign multinational groups mostly have no authority over major investments abroad or in Belgium.

One way of resolving this dilemma is to encourage Belgian managers and employees to become more involved in the control of their company and that of their foreign parents. This is possible by encouraging employees to purchase shares in the capital of their company[1]. Full representation at management and board level via people who know all about the Belgian outlet of the multinational will prevent major opportunities in Belgium slipping by unnoticed.

Another solution is to encourage sustained (international) growth by the majority of 100% Belgian SMEs. These might be encouraged to become more geared to selling and investing abroad, and to turn more quickly to the stock exchange in order to finance expansion.

In order to retain existing outlets of MNCs in Belgium and attract new international investment, it may be argued that the following factors are important:

- Create framework conditions and wage costs that bear comparison with our European trading partners.
- Offer businesses an expanded, efficient infrastructure.
- Promote good education and ongoing training for employees as a means of encouraging more innovations within companies.
- Achieve and maintain stable, efficient and transparent regulations.
- Involve employees in the control of the company through measures such as stakes in a company's capital or share options.

1. A possibility is handing out profit participations to employees in the form of shares.This is less risky, and therefore more generally applicable than giving stock options.Additionaly, these shares give a right to vote in the general assembly, stock options do not.