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Relocation: What Matters? Competition or/and Co-ordination♠

Jean-Luc Gaffard* **and Michel Quéré****

With respect to relocation (delocalisation) issues two attitudes can be contrasted. According to the most standard one, relocation does not create any problem when full competition prevails in product, labour, and capital markets. Changes in transportation and production costs may generate changes in location by firms in manufacturing industry at the benefit of less developed countries. In more developed countries, jobs are shifting from e.g. manufacturing to services industry, and the negative impact on households' purchasing power of lower nominal wages, if any, will be more than offset by lower prices of imported final goods. Unemployment will be frictional and temporary, unless market labour rigidities prevent the necessary jobs' shifting. According to a different perspective, relocation may become a real issue when considering it as an aspect of a process of creative destruction that necessarily results in local distortions in the structure of productive capacity and hence in market disequilibria. In the latter perspective, relocation can no longer be viewed as an equilibrium phenomenon. It may be associated with an increasing rate of unemployment and make it necessary for public authorities to intervene. In fact, all depends on the way co-ordination issues are dealt with. But focusing on attractiveness and competitiveness of territories may lead public authorities to implicitly consider international trade as a zero (or negative) sum game and implement supply side oriented policies that are fundamentally misconceived and could increase market disequilibria. Thus it is necessary to consider how production location really takes place out of equilibrium and how relocation may end in a quasi-dynamic equilibrium. Public interventions are required, which consist in combining structural and macroeconomic policies, the former being efficient only if the latter are growth oriented. The aim of this paper is precisely to argue according to the latter perspective.

1. Introduction

Change in firms' location is a *permanent* phenomenon strongly related to any structural change. It involves local jobs' destruction, not only in the manufacturing sectors *stricto sensu*, but also in value-added services to industry. This phenomenon becomes really worrying when it takes place in economies also characterised by decelerating productivity gains, a low job creation, and unemployment. In such a context, relocation is wrongly but usually perceived as one of the ultimate causes of unemployment. And the usual suspect is international trade coupled with huge differences in social and environmental standards.

However, while tenants of the latter assertion plead for some protection arguments, tenants of liberal orthodoxy maintain that implementing competition rules will prevent any problem to occur.

♠ This provisional paper has been written in relation with the preparation of the Special Policy Issue – EFN Report Spring 2005 on 'The Impact of Relocation and Outsourcing', and of the 2nd Euroframe Conference on Economic Policy Issues in the European Union 'Trade, FDI, and relocation: challenges for employment and growth in the European Union?, to be held in Vienna, June 3, 2005. Though with the usual caveats, we thank G. Gelauff, C. Mathieu, F. Saraceno and H. Sterdyniak for their helpful comments on a previous version.

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We intend to show that things are much more complex. On the one hand, international trade cannot be considered as responsible of increasing unemployment and reducing income in any country: in an equilibrium context, it cannot be but a positive sum game. Importing new goods and services that results from relocation creates new opportunities (allows using productive resources in a different and more productive way) inside the country. On the other hand, although international (or interregional) trade is a major contribution to growth both in developed and developing countries it is also responsible for some of the social and distributional costs. "Why? Because trade can generate sizable benefits only by restructuring economies – that is the essence of specialization according to comparative advantage – and in the real world restructuring does not happen without someone bearing costs. The flip side of the gains from trade is the losses that have to be incurred by adversely affected workers and enterprises (…) Simply put: no pain, no gain. It makes little sense to pretend otherwise" (Rodrik 1998 p. 5). Growth is not a regular process, and as such its relation with trade is far from being trivial. Changes in the geographical distribution of economic activities, which are in the nature of the growth process, may go hand-to-hand with internal distortions in the structure of productive capacity that cannot be eliminated by simply liberalising trade and allowing the economy to be as near as possible to a state of perfect competition. As a matter of fact, changes in firms' location, e.g. at the detriment of advanced countries (and at the benefit of the less developed), become harmful when these distortions end in a lower growth rate and a higher unemployment rate in the former countries. This phenomenon has nothing to do with international trade *per se* but reveals how domestic distortions change the impact of international trade. In this case, public policies that focus on competitiveness of territories may have a paradoxical content, leading to implicitly consider trade as zero sum game and hence resulting in aggravated distortions, which are easy to mistakenly attribute to international trade.

Indeed, it is essential to remove any ambiguity about the role of international trade. First of all, there is no clear evidence that the loss of manufacturing jobs due to growing import penetration has not been offset by the job creation effect of growing exports. This means that the loss of manufacturing jobs would have little to do with international trade and much more to do with domestic issues. Moreover, as underlined by Krugman (1995), trade surplus is not necessarily a sign of economic strength when foreigners are reluctant to lend to the country or to invest in it. From a more general viewpoint, relocation is nothing but an aspect of the breaking-up in the industrial structures, which is the nature of any innovation process, and of the intrinsic difficulty to manage this process, whatever the degree of trade liberalisation.

Although there is no evidence that relocation is now a significant problem in developed countries, this phenomenon feeds a current debate, which has two advantages. It signals the complexity of the relation between the geographical distribution of economic activities and the performances of countries. It takes place in countries that experience low growth and increasing unemployment, all phenomena that have to be explained.

In short, the loss of jobs in manufacturing sectors coupled with effective relocation of their activities by firms of industrialised countries may appear as one of the problems facing these countries. But the question is what to do with it rather than how to impede any structural change. The real problem lies in the distortion that emerges from an inevitable and powerful structural change. International trade, which is beneficial in an undistorted economy turns to be harmful because of a domestic distortion. This does not mean that distortions in the international trade (protectionism) must be introduced (Krugman 1996). The logic answer is that domestic distortions have to

be eliminated. Thus, it is necessary to identify the nature and the significance of these domestic distortions. Are they cost differentials, too high wages, or anything else? To what extent are they related to external trade and foreign investment?

The remainder of this paper contains four sections. Section 2 offers an analysis of relocation within the standard (equilibrium) framework, which leads to focus on fundamentals and *ipso facto* to recommend competitiveness strategies, the efficiency of which is really doubtful. Section 3 then focuses on the real nature of distortions and co-ordination issues at the local (national) level. Section 4 shows how domestic distortions influence reciprocal demands, and hence why and how international trade matters. Finally, section 5 reviews policy implications.

2. The hypothesis of relocation in the current analysis and the obsession of competitiveness

Current economic analysis does not address directly the phenomenon of relocation. So we have to consider what could be its significance with respect to the results of new models that are a mix of geographical and international economics.

Within the standard analytical framework, relocation is nothing but an aspect of a core – periphery pattern, which would be reversed as a consequence of a reduction of transport costs coupled with a huge differential of wages. In this perspective, the loss of 'high'-wage manufacturing jobs in the core would be associated with international trade and foreign direct investment as induced by decreasing transport costs. This assertion is the essence of the so-called deindustrialisation or *relocation hypothesis*.

New economic geography modelling stresses technology in the standard way as the 'fundamental' determining both the growth rate of different countries and the spatial distribution of economic activities. The relevant attributes of technology in this case are local externalities, transport costs, costs of communication of new ideas and knowledge, R&D spillovers (Krugman and Venables 1995, Martin, Ottaviano 1999, Baldwin, Martin, Ottaviano 2001). Technology, far from being a result of a process of innovation, is a pre-condition of it. Decreasing unit costs and increasing variety of goods that generates forward and backward linkages are an immediate outcome of the choice of introducing a new technology. Relocation follows, but without creating co-ordination problems that would result in the reduction of income and the appearance of unemployment in the countries concerned with delocalisation.

As a matter of fact, relocation cannot be considered as a real problem when it only exists in industrial clustering. Within an equilibrium framework, trade liberalisation fits in with industrial clustering. Firms and consumers are more outward oriented. If market proximity is less important than local linkages as competitive forces to be taken into account by each firm, then industrial clustering will be more intense as a consequence of a deeper integration. Breaking the symmetry between supply and demand forces at the local level will induce changes in the location of firms, but these changes cannot be considered as harmful when they do not result in higher unemployment and lower income. On the one hand, specialisation is supposed to only induce changes in type of jobs in each cluster without global effect on employment. On the other hand, real-income gains are supposed to flow from clustering of industries. This explains why industries are more highly clustered in the US than in Europe, without harmful effects on employment in any geographical area. Clustering is here a quasi-dynamic equilibrium. The only problem (not addressed in the equilibrium models) is a transitional one: workers that have to change job suffer a transitory real-income loss in the process (Fujita and alii 1999 p. 293).

In a country that faces delocalisation, the only attitude, which is coherent with standard analysis, would consist for public authorities in accepting changes in firms' location and hence allowing consumers to benefit from lower prices of goods produced abroad. Such an attitude relies upon the assumption that full employment is maintained and hence a local market for these goods continues to exist.

Of course things are very different whether there is mobility of labour or not. With labour mobility there will be agglomeration and a cumulative process of geographical concentration, given the existence of some centripetal forces. Without labour mobility, one cannot have this kind of evolution. The same kind of forces will result in a process of international specialisation that concentrates particular industries in a limited number of countries, and not in a classic process of agglomeration that would also involve a concentration of population (Fujita and alii 1999 p. 240).

In the latter case, domestic distortions may generate unemployment and relocation appears as a real problem. Appropriate policy-making would be the one that focuses on supply conditions, aimed at increasing competitive advantages for an economy with respect to its external competitors. Reducing wage differentials, improving labour market flexibility, reducing taxes, improving public infrastructures seem to be the only policies aimed at influencing the rationale of agents in their location choices and favouring the attractiveness of territories.

In this perspective, relocation can be considered as an effect of innovation taking place abroad, and characterised by a (sudden) decrease in unit costs. It may be impeded or reversed thanks to supply-side oriented policies. The solution for the more advanced countries would consist in encouraging social and fiscal dumping or in developing new varieties of goods in order to compensate the prevalent asymmetry of costs. In the former case, policies are aimed at reducing current production costs. In the latter case, the objective is to escape from price competition by enhancing R&D and higher education and promoting a new division of labour.

The attempt to carry out supply-side oriented policies is directly inspired by the necessity of fighting against a high rate of unemployment, whether this rate is presumed to be higher than the NAIRU or, due to the rigidity of the wage rate, the NAIRU itself is too high. The problem is that, in the actual (out-of-equilibrium) context, the efficiency of these policies is really doubtful.

As for the cost-oriented competitive policy, it seems difficult if not impossible to compensate huge wages' differentials. On the other hand, any policy that consists in compensating wages differential by reducing non-wage costs thanks to infrastructure spending, fiscal reductions, or subsidies may favour the attractiveness of territories, but also make unstable localisation choices by decreasing exit (relocation) costs: if there is no specific advantage for a firm to be located in one area or another, then the absence of sunk costs makes location easily contestable.

As for R&D oriented competitive policy, it is worth mentioning that vertical (or quality) differentiation of products, as pure a firm's supply strategy, is not necessarily a solution insofar as successful emergent economies are engaged in a growth strategy that consists in being at the frontier of productivity gains. It is well documented that openness appears as a necessary condition for a backward economy to capture the (external) demand that makes it possible to produce the mix of goods allowing a higher potential of learning (i.e., a higher productivity growth), and thus to catch up with the most advanced countries. In fact, the backward economy, in order to maximise its growth rate of productivity needs to face a wide gap between the mix of goods produced and the

mix consumed, and this makes unavoidable international trade (Lucas 1993). Of course, all countries may benefit from the enlargement of international trade, which is not a zero sum game by assumption. But this depends on what happens on the demand side. Firms of advanced countries will really be in the position of developing new technologies and new products if local as well as external markets are large enough, that is, in particular, if unemployment does not increase.

Competitiveness policies are sometimes presented as relevant with respect to the prevalent changes in the institutional environment. Transition from a multinational market highly influenced by regulated exchanges among nations to a global market regulated by international trade and investment agreements would be quite a structural shock that would change the nature of regional barriers to trade. In this new institutional context, due to sharp decreases in transportation costs, which tend to zero in the case of immaterial value-added activities, production areas are disconnected from the market they are designed for. Thus local markets (in fact, population differential) would be no longer of importance in the determination of firms' location, in fact in a limited number of activities. Minimisation of production costs would be much more important than market proximity. Indeed, reference to the new institutional setting is nothing but a way of reshuffling the same argument, which is derived from the models of new economic geography: given costs advantages and local externalities interact and this interaction determines the geographical landscape. Changes in the institutional setting may transform market and costs conditions so as to make public policies necessary in the perspective of counterbalancing location effects of such a transformation. Anyway, this does not make less doubtful the efficiency of policies focusing on competitiveness of territories.

Summing-up, policies that simply focus on costs reduction or variety enlargement, targeting the value of fundamentals by means of structural reforms, cannot be considered as substitutes for growth policies. The reason is that within an environment characterised by a low growth rate, they may amplify distortions and hence generate cumulative processes and uneven development. Really, relocation becomes a real issue because it takes place as a consequence of a process of creative destruction , which would result in opposite cumulative changes in polar geographical areas (North and South or West and East). In this case, differences in 'fundamentals', i.e. differences in unit costs or in product variety, cannot account for growth differentials among territories. Ambiguity of the analysis that only focuses on competitiveness is owing to the attempt of dealing with relocation issues within an equilibrium framework.

3. Nature of distortions and co-ordination issues: new perspectives in economic geography

The real strength of any regional cluster of economic activities (which prevent its decline) lies in its capacity for both internal diversification and structural change. Variety of goods and services and spillovers within as well as between sectors are the main sources of economic growth. There are two ways to relate variety to regional economic development. The first one focuses on variety as an innovative strategy that implies for a region to be specialised in a particular composition of complementary sectors. The second one focuses on variety as a portfolio strategy that protects the local economy from external demand shocks (Frenken et alii 2004). Contrasting these two approaches, empirical investigation about regional growth in the Netherlands concludes that related diversification is more rewarding for growth and employment than unrelated one (ibid.). "Related variety indeed enhances employment growth while other type of agglomeration economies are not significant. Knowing that related variety is mainly present in densely populated areas, and given that population density is

not significantly affecting employment growth, we can conclude that related variety in cities is responsible for job creation and not urban density in itself" (ibid. p. 39). To some extent, these results are corroborated by another empirical study, which is concerned with agglomeration effect on the productivity of firms in the French employment areas (Mulkay 2004). This study has two main results. On the one hand, when qualification shares and the industrial structure in employment areas are introduced as explanatory variables, economic density is not any more a determinant of labour productivity. On the other hand, while specialisation (the degree of unrelated diversification) and specificity (here measured by the difference between the sector structure of the zone and the structure of other zones in the country) have a strong positive effect on labour productivity, the effect of concentration is not so obvious. As economies that exhibit related diversification are also those showing sustainable growth and full employment, relatedness in the previous sense appears as the means for avoiding relocation that would result from direct production costs differentials.

However, what matters is not really the existing variety of goods (and services), or the nature of clustering, but *how it comes to the fore and evolves*. When considering innovation as a process of creative destruction, the geographical dimension of this process and the sector composition of local areas depend less on fundamentals than on the conditions that make *viable* the process of change. Indeed, such a process inevitably generates distortions in the structure of productive capacity that require adjustments to be carried out in time. In this perspective, competition is not only aimed at equalising supply and demand in a given market and technological environment, but has also to adapt both structure and technology to opportunities created by expanding markets. It should be viewed, not as a state (perfect competition), but as a process, which implies that market connexions (or imperfections) are essential means that make it possible to co-ordinate both competitive and complementary investments. In the latter perspective, public intervention cannot be reduced to create the conditions of enforcement of perfect competition rules (see Richardson 1960).

As a matter of fact, technological *development*, which is effectively the way for advanced countries to take advantage of the new division of labour by creating new varieties of goods, is not only driven by incentives such as determined by given rules or institutions, but is based upon on the ability of changing both local and global relations without creating too much perturbations. While new organisational structures for innovation result in part from strengthening linkages within territorial production complexes, innovation increasingly rests upon the primacy of extra-regional relationships. "Globalisation, in other words, presupposes a reconstruction of the spatial division of labour creating new forms of articulations between global and regional levels that move well beyond one-dimensional portraits of global 'footlooseness' (in which the region is subsumed within a corporate division of labour, something which is still characteristic of transnational strategies) or putatively autonomous industrial districts (in which the global dimension is derived as a market-outcome of inter-regional trade)" (Gordon 1994 p. 38). This definition of globalisation is essential in the perspective of understanding the difference between a pure *competition strategy*, of which we have mentioned the weaknesses, and a *co-ordination strategy*, the necessity of which derives from the existence of distortions that cannot be removed only by using the price mechanism.

Co-ordination has multiple facets. Changes in the way in which innovation is achieved demands *changes* in the way local and external linkages are organised. Relocation of economic activities is an unavoidable effect of such an evolutionary process. In the first stage of the innovation process it may be decisive to combine innovative

capabilities of a small number of existing firms with the driving force of a State (public) demand. New industry emerges not from localised entrepreneurial initiative (or pre-existing location factors), but from a conjunction of innovation in established firms and extensive public intervention through specific programmes, specific physical infrastructures and dedicated subsidies. This conjunction results in new growth poles[1]. In the second stage, the market dominates growth of innovative activities, both because sunk costs have been covered and because horizontal and vertical diversifications enlarge the size of the market. This shift in the economic (and technological) trajectory consolidates the initial location. This does not mean that public intervention becomes useless. Successful globalisation processes, which imply the interconnection of diverse and multiple capabilities, as well as the interconnection of different markets, require public intervention. But this intervention should be able to chart a new course, between a sterile competitive struggle and a form of co-ordination – protectionism - that would end in a regional isolation. In the third stage, innovation is willing to be common in its economic incidences. Innovations diffuse widely, and the originating local environment faces higher competitive pressure from other environments that succeeded in reaching similar capabilities and related economic performance. In that third stage, a reshuffling of policy-making is often needed to delineate and support new entrepreneurial initiatives, and impeding harmful consequences of changes in the location of some industrial segments.

In this perspective, what is at stake is not deindustrialisation and relocation *per se*, but the creative destruction process, which is behind the scene, and how to deal with. Innovation or any change that implies a breaking down in industrial and market structures and the appearance of *sunk costs* has implications on the spatial distribution of economic activities. Thus, spatial as well as industrial issues are mainly co-ordination (largely domestic) issues related to the distortions in the structure of productive capacity and the sunk costs associated with it. Openness and the emergence of new countries in the international trade do not create difficulties *per se*. They create difficulties insofar as local disequilibria, which result from changes in the international environment, are not correctly dealt with. They may even be a means for ensuring a better co-ordination because the enlargement of market.

Briefly, market disequilibria and distortions in the productive capacity that necessarily emerge call for local co-ordination of economic activities, which cannot amount to simply re-establishing competitiveness by reducing production costs or creating niches for new products. Co-ordination should consist in creating the conditions for firms to deal with sunk costs, which are the unavoidable consequence of structural change. Helping the constitution of networks, supporting co-operation agreements, facilitating access to financial and human resources are elements of the required policy mix that include competition, regulation, or banking policies.

Thus there is no fatality of a core – periphery pattern. Indeed, increasing returns and product differentiation make it possible to have a huge increase in intra-industry international trade. Thus, the extension of trade may take place without a sizeable reallocation of resources (and relocation) or income distribution effects. All depends on the way co-ordination issues are dealt with, *within* economies and *between* economies. The basic idea is that growth and the realization of increasing returns can take place in different countries preserving their

[1] Contrary to what is universally considered, Silicon Valley is exemplary of this kind of initial impulse. "The state was involved in every aspect of the microelectronics industry's emergence and early development. Advanced military and aerospace demand provided the principal market for microelectronics, established research priorities in product and process innovation, stabilized high profits for successful companies and underwrote the risks of new product developments. The vast majority of scientists, engineers and technicians in the microelectronics industry acquired state-of-the-art and practical knowledge in government-financed university or corporate research and development programs" (Gordon, 1994 p. 39)

heterogeneity, but without creating more inequality among them. Provided, though, that we look at trade liberalization, growth and innovation in the light of the interpretation of evolution process that focuses on co-ordination conditions.

4. Relocation and the evolution process: the role of trade

Any breaking-up in a pre-existing industrial and spatial structure results in disequilibria between supply and demand of final product at each moment of time and over time. Such discrepancies are not policy (or institution) dependent, but are in the nature of any structural change. They have both an internal and an external dimension that must be dealt with. In this perspective international trade as well as foreign direct investments matter, but not only with respect to initial endowments or existing externalities. One can imagine that firms do not need to be located near the market for their products. But a market must exist. And its existence depends on what happens on the supply side within the different geographical areas. Firms may decide to delocalise their production in the South in order to reduce their production costs. But such a decision will be justified only if the market in the North does not disappear, or if the market in the South is a substitute for it. In the latter case, the core – periphery pattern would be really reversed and relocation would go really hand-to-hand with deindustrialisation and structural increase in unemployment in the North. In the former case, production and employment must be sustained in the North by means of appropriate public intervention.

In fact, for an open economy, balanced growth results from the harmonization of external and internal demand with the productive capacity. Trade and openness may be very important factors both in increasing the long run growth potential, and in smoothing fluctuations due to country specific shocks; but this positive role is fulfilled only if the economy has internal resources – the reference is mainly to productive capacity, but also to a sufficient level of revenues - to match the increase in demand and to keep the balance that is necessary to successfully complete a transition process.

Consider the case of two regions (countries), which exhibit a complementarity of final demand, and take for example the case of a shift of preferences from goods produced in a country (call it country 1) to those produced in its trading partner (country 2) (Saraceno 2001). This kind of change can be regarded as a change in transport costs that allows the firms in one country to be more competitive than firms of the other one, given a huge wage differential. Standard economic analysis, in which co-ordination happens 'by assumption', tells us that a *relative price change* (either via prices or via the nominal exchange rate) will accommodate the new and different preferences. Thus, production and unemployment will remain unaffected, as the burden of adjustment exclusively falls on prices. In a sequential out-of-equilibrium process, instead, price variability is not likely to be enough. The expected increase in the income of country 2 should generate an increase of imports and hence in the demand for the goods of country 1 (partially compensating the preference shift) and hence, as a side effect, an increase in the income of the latter. Symmetrically, the initial drop in the demand for the goods of country 1 should involve a decrease of its income and imports, and hence a decrease of the demand for goods of country 2 generating an excess capacity in this country. The final result depends on the way necessary adjustments to re-establish complementarity take place.

Investment must be carried out in region 2 that takes time. It implies that revenues will be distributed while the goods in which they will be spent cannot be provided out of the current local output. Inflationary pressures and/or trade deficit will follow. Then the standard prescription consisting in fighting inflation and keeping prices

flexible could result in cutting investment spending, and aggravating distortions in the two regions (ibid.) A policy aimed at sustaining investment only in region 2 would favour this region and likely generate an uneven development and a dualistic structure. However, if in the country 1 the increase in demand due to the trading effect more than compensates the initial decrease due to the preference shock, a policy mix may prove necessary in this country as well, in order to allow investment in new capacity. Therefore, sustaining investment in both countries would help absorbing the shock and prevent a too large gap between the growth rates of the two regions.

In other words, complementarity of external demands (i.e. international trade) should stimulate faster growth in the exchanging countries. However, trade advantages can be captured only if appropriate interventions for sustaining investment in new production processes are realized in a context where demand complementarity adds to the complexity of adjustments. Production, as often stressed (Amendola, Gaffard 1998), takes time, which implies distortions in productive capacity resulting in current market disequilibria in exchanging countries that try to adjust through investment. The restructuring of productive capacity in the two countries has to be accommodated by transfers (or by an easing of financing conditions) that allow the re-absorption of the shock. For these interventions not to bring about unbearable distortions in the structure of productive capacity, the balance between investment and consumption must be maintained, so as to allow each economy to reach a threshold beyond which complementarity of demand between countries becomes effective, smoothing fluctuations and thus resulting a growth factor. Then, relocation will only permit a better allocation of resources, without adding to pre-existing distortions.

While new economic geography modelling tells us that change in fundamentals does not induce a change in the size of markets, sequential analysis reveals the existence of domestic distortions that affect reciprocal demands and generate perturbations in the growth process. These perturbations, which cannot be removed by just allowing price and wage flexibility, require investment spending aimed at enhancing structural changes .

5. Policy implications

The obsession with competitiveness is certainly based on a wrong appreciation of the possible impact of international trade (Krugman 1994). Nevertheless it seems to be justified in established (old) industrial districts or in small countries insofar as their performances mainly depend on external demand, which is a parameter for these economies. Competitiveness strategy, which consists in capturing this external demand by decreasing production costs, can even be successful in these cases. At the opposite, the same obsession is dangerous in the case of innovative districts or larger countries, when final demand is not independent of what happens inside the territory and hence cannot be considered as given. In the latter case, it is essential to consider the nature of both internal and external driving forces of final demand.

In the case of large European countries, the real issue lies in the complex array of factors that determine labour productivity rather than in failures in their capacity to deal with international or interregional competition. As a consequence, there is no solution that would consist in things as simple as subsidising high technology, reducing fiscal pressure, in fact in conducing implicit or explicit industrial policies only based on corporate strategy concepts such as competitiveness. Enhancing productivity growth does not imply simply supporting research that can improve capabilities of firms engaged in international trade, but also and mainly requires different forms

of co-ordination that support a regular growth process despite huge structural changes (and, in fact, efficiently deal with them).

As already mentioned, the main dimension of these forms of co-ordination is to be concerned with the nature of innovation as a distributed phenomenon, that is, with a phenomenon that involves many actors both at the micro and at the macro level. In this perspective, innovation policy cannot be reduced to changing rules and institutions and hence enhancing R&D spending. It is a policy aimed at monitoring the process of change. Two central implications have to be emphasised. The one is its discretionary dimension and its underlying experimental character; the other is its inherent combinatory character. Innovation (or growth) policy is actually a complex mix between supply and demand policies, between structural and macroeconomic policies (see Rodrik 2003 for a historical appreciation). This is particularly true in such complicated matters as firms' location and geographical distribution of productive activities. To ensure the stability in firms' location, policy-makers have to rely on a combination of structural policies and policies aimed at smoothing fluctuations and avoiding destructive cumulative processes. It is the complexity of mutual interaction between the two components that create the difficulty and the governance issue of innovation policy.

In particular, eligible local policies depend on the global one. If the latter is responsible for a low growth rate (and a high unemployment rate), then the former cannot be but competitiveness policies as previously defined, or, according to another social view, policies only dedicated at compensating social damages. None of these policies can be efficient with regards to the nature of employment (and productivity) issues, and allow international trade being a positive sum game. Thus relocation tendencies require a combination between macroeconomic policies that favour the accumulation of capital, and structural policies that directly target the organisation of industry, stimulating innovation process at the firm or industry level. As previously mentioned, avoiding harmful consequences of changes in location implies sustaining local demand for final products. However the latter requires not only increasing local incomes, but, also, creating local conditions for the rise in the production volume, and hence in the wage bill. Management of demand is never independent from the stimulation of supply. There is a dilemma due to the fact that wages are both an essential part of production costs and the main component of final demand, which is at the heart of the articulation between local and global policies, between structural and macroeconomic policies. Two drawbacks should be avoided: on the one hand, increasing demand without increasing supply, which would be the case when public interventions only consists in augmenting the take-out on productive resources and redistributing the total income; on the other hand, increasing supply without increasing demand, which would be the case when public interventions are reduced to a fiscal and a social dumping.

Thus, one of the main challenges is to identify both objectives and instruments of structural policies that make it possible that changes in location not result in higher unemployment rate in some countries. These policies should be mainly oriented to promote local specific resources. Instead of systematically diminishing the sunk costs to be borne by firms, they should be dedicated at raising strong barriers to exit (relocation), which take the form of local linkages that help the creation of technology. Different modes of intervention must be assessed with respect to this objective. Thus local policies must stimulate R&D and education, but they make sense because, far from being a part of a policy exclusively oriented to support the competitiveness of the country, they are carried out together with other public policies all of them being growth oriented. Concerning education and research, it is

certainly important to promote an institutional architecture that creates good incentives, but this architecture must also favour the accumulation of adapted human resources in order to prevent any distortion on the labour market[2]. As for scientific - long-term – investments, the benefits to be expected from any project for the local area in which it is settled (such as e.g. the ITER project) mainly depend on the ability of creating local linkages that allows designing and producing new products and services. This ability is associated with rules and governance mechanisms that favour a better co-ordination between competitive and complementary investments. These rules and mechanisms are not the same that those generally considered as emblematic of policies that focus on competitiveness of territories: they imply partnership and cooperation agreements that must be promoted rather than condemned. As for new sectors, such as biotechnology or life science industry, policies should be aimed at securing innovation and growth. E.g. in the case of German biotechnology industry, while most of the companies de-located R&D facilities, a series of public interventions helped reverse the movement. These policies provided direct subsidies to projects' coaching and monitoring, stimulated supply of 'high level – low price', thus favouring an impressive boom of small biotech firms.

While the current consensus tends to promote deregulation of product, capital and labour markets, and privileges a very specific competition policy, managing the innovation process and avoiding distortions that would result in delocalisation and unemployment require articulated discretionary interventions, mainly aimed at remove barriers to growth. These interventions, instead of mimic or simply reinforce corporate strategies, have to create conditions that allow re-orientating these strategies. In this perspective, changes in government spending, which would favour product differentiation and hence allow an endogenous increase in total factor productivity, may result in simultaneous increases in output, employment, wages, and consumption (Devereux et alii 1996). Thus, due to a huge wage differential between the North and the South, unskilled jobs will disappear in the North, but the gains from exchange will be really captured thanks to appropriate investment. They will allow economy in the North to reabsorb (frictional) unemployment without bearing a reduction in the wage rate. Relocation of economic activities will be only an aspect of a fruitful restructuring of productive capacity.

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[2] In particular, it is essential to distinguish between the departments of universities that develop research activities with respect to the requirements of the international scientific community and those that develop general competencies required by the economy.

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