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Exchange Rate And Regional Divergences : The Swiss Case

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EXCHANGE RATE AND REGIONAL DIVERGENCES :
THE SWISS CASE

Corpataux José, Crevoisier Olivier¹ and Thierstein Alain²

Abstract : From 1975 to 1995, the Swiss franc appreciated in a near constant manner compared with the currencies of all of the country's commercial partners. *This article will seek to demonstrate that regions in Switzerland evolve in a differentiated manner under the influence of a continuously appreciating currency.*

This article is not in the nature of an econometric study and will not seek to quantify the gains and losses of each region, *but it will view their structural evolution as affected by exchange rates.* Faced with the appreciation in the Swiss franc and based on their productive specialities, some regions suffer badly from this, whilst others cope with it and even thrive on it. *This article thus will argue that monetary policy is not neutral from a sectorial and regional point of view.* This being so, one can clearly wonder about the consequences of the Swiss National Bank's monetary policy of the last 25 years: has domestic industry not been sacrificed in favour of financial activities ? Is the continuous rise of the Swiss franc not turning Switzerland into a machine producing territorial divergence ?

At a theoretical level, a large number of studies on industrial and regional economy have shown that space is neither neutral nor homogenous (studies on industrial districts, localised productive systems, the innovative milieus, ...). It may seem a paradox that whilst a certain number of activities - more particularly standard production - can be transferred from one country to another, an increasing number of authors have shown that the capacity to innovate on the contrary lead to certain activities remaining anchored in very specific spaces. With their organisation, their specialities and their institutions the latter constitute real regional production systems (RPSs). Although these studies may help to understand why these systems are competitive, they have never established the link with macro-economic variables and in particular with exchange rates. The first part of the present article will describe the method used to demonstrate the existence of RPSs, define the organisation of production in the various regions of Switzerland as well as the basic revenue generated by these systems. In a second part, we will demonstrate how each of these RPSs has responded with regard to the Swiss franc's evolution.

Keywords : exchange rate, optimal monetary zones, regional production systems, industrial regions, touristic regions, financial places.

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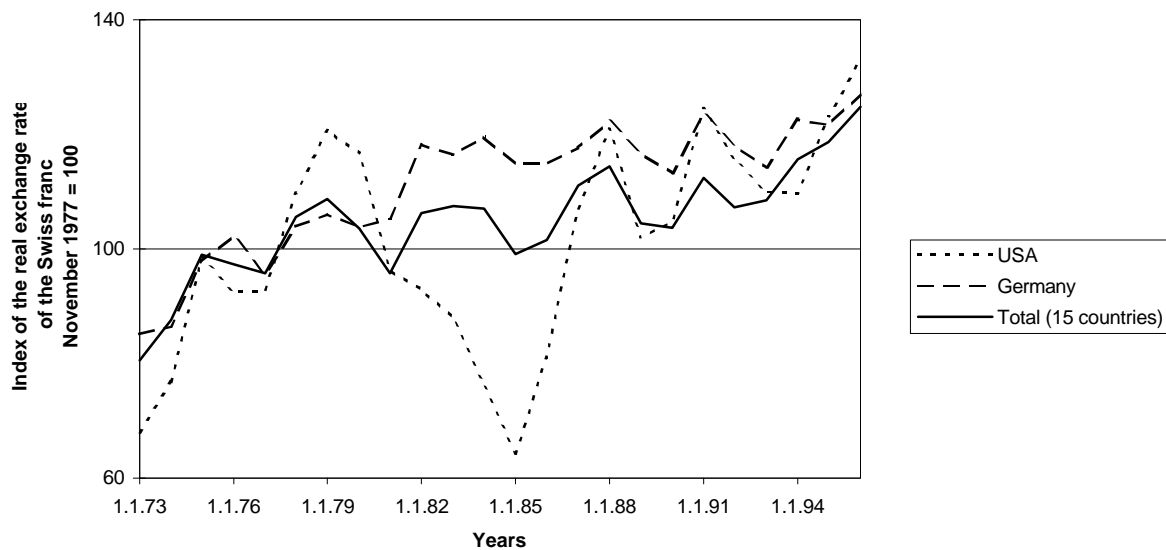
1. Introduction

The integration of regions or nations in a common monetary zone does not only raise *nominal* issues of public policy convergence. It also, and above all, raises the issue of the *real* convergence of production systems, which have different the structures and a different past evolution. The main problem arising from such integration lies in the fact that one cannot use the exchange rate as an instrument to co-ordinate economic entities. What are the resulting *long-term* consequences for the various *regional production systems (RPSs)* clustered in a monetary zone ? To our knowledge, no study has attempted to elucidate these phenomena.

In fact, we were lucky to have at our disposal a sufficiently special field to study over a period of twenty years. Indeed, from 1975 to 1995, the Swiss franc appreciated in a near constant manner compared with the currencies of all of the country's commercial partners (Figure 1). At the same time the international flow of goods and capital also increased continuously. The Swiss economy, which was open to the outside and caught up in trade globalisation from a very early stage on, was also marked by a far-reaching change in regional dynamics: the difficulties of the industrial and tourist regions, which produced the main exports at the beginning of that period, and the substantial growth of the international financial centres. The parallel development of these two movements – appreciation of the franc and regional change – appeared to be striking. As a result certain considerations were voiced on the choice between an industrial and a financial economy (Bairoch 1990; Cassis 1990) and there was some political debate, but this parallelism was never made the subject of a research study.

To understand the effects the integration of various regional economies in the same monetary zone has, we have emphasised *the different ways Swiss regions evolved under the influence of a continuously appreciating currency*. We do not try to quantify the gain or loss incurred by each region, *but we try to understand their structural evolution as affected by the exchange rate*. Depending on their productive specialisation, some regions suffered quite severely from the Swiss franc's appreciation, whereas others coped with it, or even benefited from it sometimes. Thus, *monetary policy is not neutral from a sectoral and regional point of view*.

FIGURE 1 : EVOLUTION OF THE REAL EXCHANGE RATE INDEX OF THE SWISS FRANC, 1973-1995



Source : SNB.

This paper first discusses the theories, which establish a link between the exchange rate and the evolution of production systems. All these theories draw conclusions, which can vary radically. Furthermore, they are usually based on the assumption of homogenous national territories. In the second part of our paper we specify the methodology applied when describing the *RPSs* in Switzerland. The impact of the rate of exchange on *RPSs* was studied as a function of three criteria: sectoral specialisation and the source of the basic income of the *RPSs*, the presence or absence of large firms and the innovative capacity of the *RPSs*. The third part of the paper illustrates four examples of *RPSs* each of which evolved in a radically different way in the relevant period. Lastly, a link is established between the regional divergences and the evolution of the rate of exchange in the whole of Switzerland from 1975 to 1995.

2. Exchange rate, competitiveness and regions: are there any theoretical links ?

The theories of the impact of the rate of exchange on economic activity can be classified in two groups. The first group comprises the classical devaluation/revaluation paradigm, which studies the repercussions of a fall/rise in the external value of a currency as a function of the price and volume effects on the domestic and foreign markets. Devaluation, for example, permits the mopping up of a trade deficit, since by reducing the price of exported products in the foreign currency, exports are stimulated and, by raising the price of products purchased abroad, importing is dissuaded. Revaluation is the symmetric operation of devaluation. It

reduces the trade surplus by increasing the price of exported goods and by reducing that of imported goods (Flouzat 1995).

The second paradigm includes much more recent theories, which focus on the virtues of a strong currency, and in particular those devoted to the “strong franc”³. According to the latter, the chain of causality is different: a variation in the exchange rate engenders *medium- and long-term* changes in the *strategy* of firms. In fact, firms, which anticipate devaluation, are neither impelled to compress their costs, nor to innovate, for devaluation gives them a sufficient benefit in terms of costs. In the opposite case, firms, which are exposed to the pressure of a revaluation, have strong motivations. This being so, any variation in the rate of exchange, regardless of direction or amplitude, is not merely endured: it becomes a structural feature of the country’s economy. The result is the emergence of “virtuous circles” or “vicious circles” which will overturn the effects described by the traditional devaluation/revaluation theories. Thus, it would appear that currency appreciation, in the medium term, helps specialise the national economy in production areas which are not very price-sensitive; this should make it possible to simultaneously profit from the benefits of exporting without having to suffer from imported inflation.

Finally, few papers have explored the relation between exchange rate and regions. There is, in fact, only one theory, which explicitly links territory and exchange rate: Mundell’s theory of the optimal monetary zone (1961). Such a zone would have to group regions, which react symmetrically to an external shock, otherwise substantial adjustment costs would be incurred the less favoured regions. The underlying idea can be summarised as follows: in a monetary union the economic costs are the higher the more asymmetric the structures or behaviour of the union’s economies are. These differences in the economic structures, which continue to exist between regions wishing to create a monetary union, will be at the root of adjustment costs in the case of external shocks. Mundell concludes, from a theoretical point of views, that it would be necessary to create homogenous monetary zones. From the empirical point of view, one must accept the fact that less favoured regions often, and for long periods of time, have to contend with such adjustment costs, with the slight drawback, however, that they rarely achieve adjustment.

To start with it is interesting to note that the paradigms, which consider the impact of the rate of exchange vary very little, except for the second one, which introduces the idea that exchange rates have a structural impact on the economy (specialisation in sectors with low

³ For a summary of these theories, see Faugère and Voisin (1993); for a critical review, see Lordon (1997).

price elasticity). Furthermore, this specialisation is supposed to last and to strengthen later on. By simply taking this element into account, one can draw conclusions, which are diametrically opposite to those of the first paradigm and thus justify a “strong franc” policy. Moreover, these theories see the territory covered by a currency as being homogenous. On the other hand, the theory of the optimal monetary zones, based on the asymmetry of physical space in the event of exchange rate variations, leans on the idea of adjustment costs incurred by the less favoured regions whereas the structural impact, in particular on the specialisation of sectors with low or high price elasticity, is ignored.

Thus, the various theories reach very different conclusions. How do these different factors then combine with each other in reality ?

3. Regional Production Systems (RPSs) and exchange rate

3.1 Introduction

How can one illustrate the regional impact of the exchange rate ? First, we define the concept of Regional Productions Systems (RPSs) and the method with which we were able to identify these systems as well as the basic income they generate. Then we described the three criteria, which explain the impact of the exchange rate on these RPSs : sectoral specialisation, the presence/absence of large firms and regional innovation capacity.

3.2 Identifying RPSs

3.2.1 Definition of RPSs

A *regional production system* (RPS) is defined as a *geographical area of productive specialisation(s)* including a certain number of *regional actors* (firms, - small or large -, institutions, public authorities). These actors interact with one another in accordance with certain *relationships* of technical complementarities (trade input/output relations, relations between training and education systems/research and firms), relationships of competition and/or co-operation. A RPS harbours and generates *special resources* (in particular know-how of all kinds), which form the basis of its competitiveness. It also has a more or less pronounced *autonomy* with respect to its own evolution (Crevoisier, Corpataux and Thierstein 2000).

Thus, *the spatial boundaries of a RPS* comprise a certain number of elements : specialisation of activities compared with the other national territories; special relationships between regional actors which also define a particular area; presence of special resources which give the region a special edge over its neighbours and finally, in a more general way, the

autonomous ability of adjustment and innovation, involving a certain number of actors in a dynamic interaction which distinguishes this territory from the surrounding ones.

Thus, a RPS is more or less *encompassing* depending on whether it includes a larger or lesser part of the region: the economy of some regions may be composed nearly exclusively of its RPS. In other regions, on the contrary, the RPS and its specialised branches are only a tiny part of the economy, because the region is more diversified or it has a larger number of induced activities. The *autonomy* of a RPS is also more or less pronounced, going from a dependent RPS, consisting mainly of subsidiaries of large firms with few local ties to truly innovative milieus.

3.2.2 Method of identification of RPSs

Like other authors (Guégan and Rousier 1989 ; Isaksen 1996 ; Asheim and Isaksen 1997), the basic unit we used were spatial entities based on commuting movements (“region with spatial mobility” SM). This spatial delimitation makes both geographical and functional sense.

In a first step, we regrouped these SM regions on the basis mainly of localisation quotients (see Appendix 1) so as to establish coherent RPSs (Thierstein *et al.* 1995 ; Guégan and Rousier 1989).

In a second step, we used a certain number of more qualitative data. Indeed, an exclusively statistical study does not help reveal the complementarities, which exist between the various activities in a region, regardless of whether these complementarities are to be found in purchasing/selling relations, in the technology employed and the related know-how or whether they are of a different nature. So, in order to better grasp the innovation capacity of the various RPSs, we resorted to two sources of information: interviews with regional experts and existing regional monographs.

3.2.3 Analysis of the basic income of a RPS

This issue should allow us to specify the general basic income generated by the various RPSs we identified. The export base theory (Hoyt 1939 ; Gouguet 1981) assumes that the economic growth of a city or of a region depends on its *basic income*, i.e. the income it derives from selling its products and services outside of the region, whether this be to the remainder of the country or as exports. Thus, such revenue induces jobs in the region. The first of this theory was very limited and was criticised severely. Nonetheless, its basic principle (the link between the basic revenue and the development of the region) still gives inspiration to many research studies in the field of regional economics. From this point of view the role played by RPSs is essential in ensuring the competitiveness of the various nations and in supplying a large part

of exports to the latter (Storper 1992). In the light of the above, we determine the basic income generated by the various RPSs as follows:

- ◆ in terms of exports of industrial goods;
- ◆ in terms of hotel overnight stays in tourism;
- ◆ and in a more indirect manner, with regard to the remaining activities (banking, insurance, etc.) since the regional statistics are deficient in this respect and do not provide us with the data required by this study.

3.3 Variables, which explain the impact of the exchange rate on RPSs

Drawing on the various theories of exchange rates and the studies on regional development we were able to define three variables to assess the regional impact of exchange rates. The objective is to establish the link between the evolution of the activities of the export base (or specialisation activities) in the presence of currency appreciation (for example, the contraction of these activities, their expansion, up-market specialisation, conversion to new activities, etc.) and the features of the RPSs both in terms of their structures and their innovation capacity.

3.3.1 Sectoral specialisations

Not all economic sectors react in the same way to appreciation in a currency's external value. Thus, one distinguishes between three sectors in order to account for the difference in exposure to an increase in the external value of a currency:

- ◆ *Sectors with positive exposure:* financial activities and import trade benefit from the appreciation in the external value of the currency. Why an international financial sector is influenced positively by the value of the national currency is discussed elsewhere (Crevoisier, Corpataux and Thierstein 2000).
- ◆ *Sectors with negative exposure:* currency appreciation usually has a negative influence on the export industry and the activities linked to tourism.
- ◆ *Sheltered and invulnerable sectors:* some activities are simply not or barely exposed to international competition (administration, health sector, etc.) and are therefore not affected by the appreciation in the external value of the currency. Other activities are exposed to international competition, but are not, or hardly, affected by exchange rates, this is the case in particular of headquarters of large firms and international organisations. Large firms base their decisions to establish themselves in a particular on factors such as quality

of life, whereas the decisions of international organisations are motivated by political factors.

Depending on their specialisation, therefore, regions are exposed in very different ways to the evolution of the exchange rate.

3.3.2 The presence of large firms

Classical theory tells us that the increase in the external value of a currency drives firms to invest abroad. In actual fact, only large firms have the financial and organisational clout to pursue a strategy of expansion and relocation at the international level. Regions dominated by large firms will thus experience a different evolution than those in which SMEs predominate.

3.3.3 Innovating capacity of RPSs

The large number of studies conducted in the last twenty years on the subject of innovating milieus, technopoles or industrial districts have demonstrated that regions possess different *innovating capacities*. Drawing on these studies, we take the view that regional innovating capacity results from the combined presence of three elements: the firms' decision-taking autonomy, the existence of relationships of competition/co-operation between the regional actors and the ability to generate special resources.

Thus, the structures of a RPS, its sectoral composition and the predominance of large firms or of SMEs do not entirely determine the way a region will develop. The territorial factor also has an influence on the structural evolution of the RPS.

4. Some examples of contrasted regional impacts of exchange rates in Switzerland

4.1 The metropolitan system of Geneva

4.1.1 The broad features of the RPS

Geneva's production system is geared to international services. It is characterised by the existence of three main sets of activities (see Table 1):

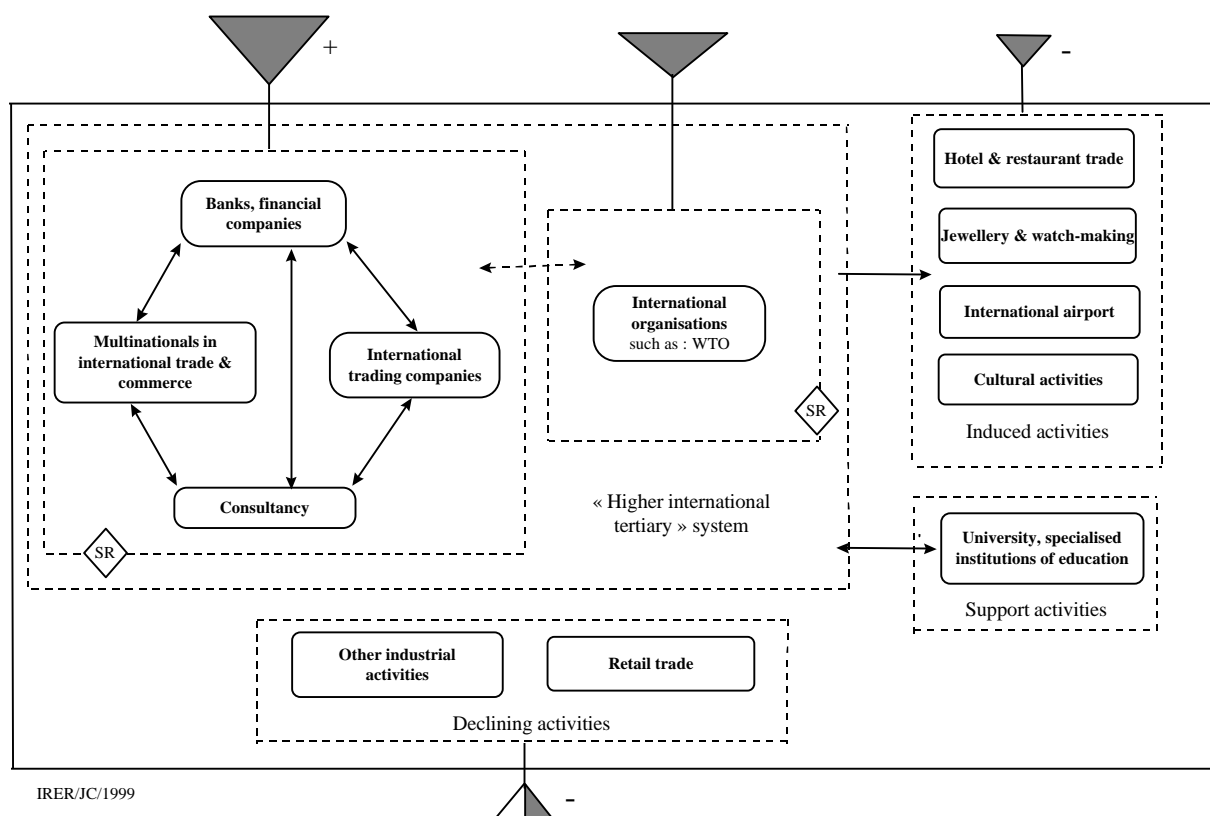
- *The financial and banking centre and international commerce centre*: Banks are specialised in asset management, an area in which Switzerland manages 35% of the world's cross-border assets⁴, but also in the financing of international trade and commerce (Béguelin, Roth, 1992). This is mainly trade in raw materials and commodities, an activity in which Geneva is a world leader.

⁴ According to some estimates made by Chase Manhattan Bank (1993) in: Swiss Bankers' Association (1996), *The Swiss Banking Sector: Development, Structure and International Position*, SBA, Basel.

- The second set of activities arises from the presence of 150 international organisations, which employed nearly 27'000 people in 1994 (UBS, 1995). Here too, revenue originates nearly exclusively abroad).
- The third set groups the activities, which support or back-up the first two sets of activities. Thus, 35% of the hotel trade serves business travel and another 35% the international organisations. 51% of the international airport's customers are business travellers. The main part of the jewellery and watch-making production, which is aimed at the top range of the market, is exported directly, whilst the remainder is sold directly to wealthy tourists.

The Genevan industry for its part has declined steadily since the beginning of the seventies. The retail trade has also suffered from the proximity of the French border.

TABLE 1 : THE METROPOLITAN SYSTEM OF GENEVA



4.1.2 The impact of exchange rate

The metropolitan system of Geneva is characterised by its very great international openness. It is thus exposed to the Swiss franc's appreciation:

- Thanks to its international tradition and its specialisation in asset management, the Geneva banking community has been able to benefit from a continually appreciating currency. This is borne out by the number of foreign banks which has set up in Geneva in the last twenty years: increasing from 48 in 1980 to 108 in 1995.

- The activities geared to international trade and commerce are not affected by the evolution of the Swiss franc: these companies' transactions are expressed in dollars.
- The international organisations do not really suffer from a rising Swiss franc since the sources of finance are governmental and are frequently determined by international agreements. In the long term, dollar-denominated wages and the disadvantages arising from unfavourable exchange rates may incite the administrators of these international organisations to reconsider their location. Furthermore, the border impact has been quite considerable: in 1994, 47.7% of international civil servants had their residence in France compared with 34.2% in 1981.
- The industrial sector (except watch-making industry) has suffered especially badly from the Swiss franc's appreciation. Jobs have shrunk from about 30'000 in 1975 to less than 18'000 in 1995 (-39%). Watch-making and jewellery was also able to draw on its tradition of producing luxury goods, and has thus been sheltered from the rising Swiss franc. This sector accounted for more than 60% of the canton's exports in 1995.
- Generally speaking, the activities in the hotel and restaurant trade react very sensitively to currency fluctuations. As the above-mentioned statistics confirm, however, these activities are linked very closely to the international activities in Geneva. Even with the handicap of the franc's evolution, they continue unabated thanks to business travel and to the international organisations.

In conclusion, in the period from 1975 to 1995, international organisations in Geneva did not suffer from the high Swiss franc and international services benefited from this. Except for the watch-making industry, other industrial activities moved out of the region.

4.2 The mountain tourism system and the industrial system of Valais

4.2.1 The broad features of the RPS

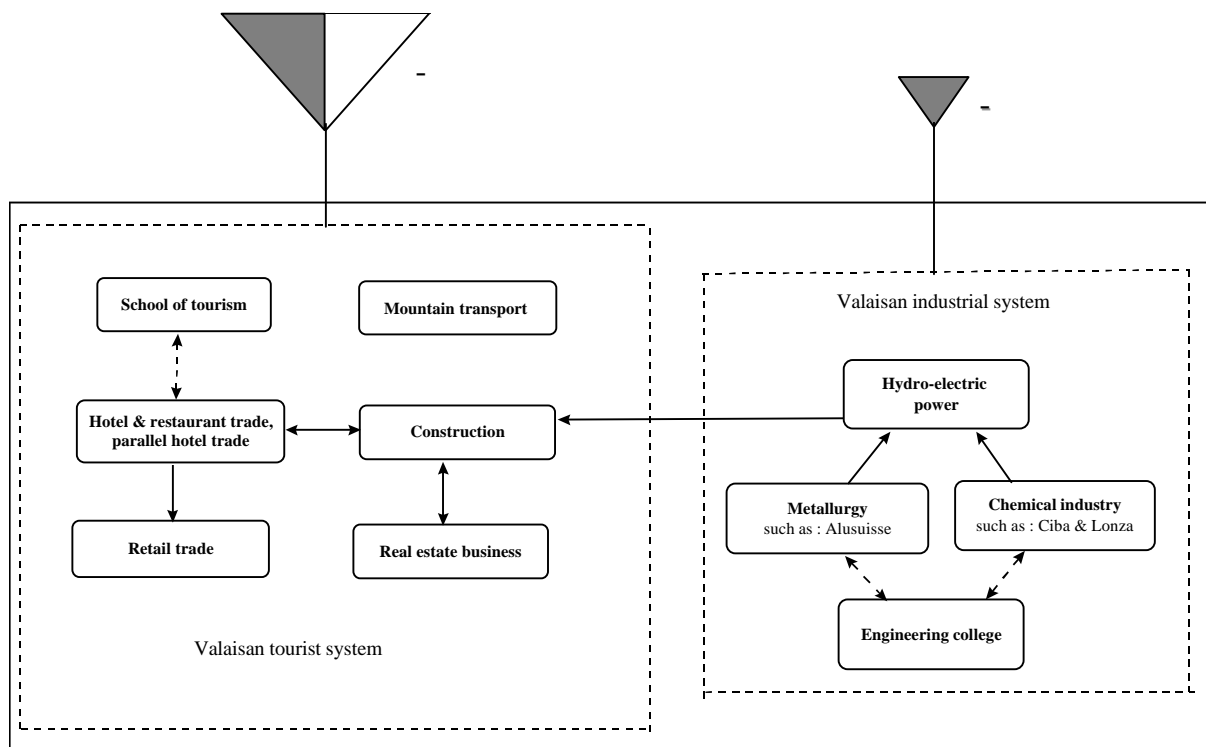
The Valaisan economy is characterised by the presence of two independent groups of activities (see Table 2):

- *Mountain tourism:* After the euphoria of the eighties, the tourist sector has barely returned to a growth dynamic; various elements hamper its recovery: fiercer international competition, unfavourable exchange rate, introduction of VAT, etc. Direct revenue (expenditure of tourists) from tourism in Valais at the end of the eighties was estimated to be about CHF 1.5 billion and CHF 3 billion including spin-off effects. According to the Valaisan Tourism Union, not only does one inhabitant of Valais in three earn his/her living thanks to tourism, but half the population of Valais depends economically or

indirectly on tourism (Dayer 1992). The overnight hotel stays are split nearly equally between Swiss clients on the one hand (45% of overnight stays in 1995) and foreign customers on the other (55%). Valais thus accounts for nearly 13% of all overnight stays recorded in Switzerland.

- *Chemical and metallurgical industries:* The industrial sector is marked heavily by the presence of large firms. Valais has never had a genuine industrial tradition, which may explain the dependence of its industrial fabric. At the end of the 19th century, and at the beginning of this century, the first large firms set up in Valais (Lonza in 1897, Ciba in 1904, Alusuisse in 1905) for the proximity to the sources of hydro-electric power. At the present time, the three above-mentioned multinationals employ nearly half of the industrial labour force of the region.

TABLE 2 : THE MOUNTAIN TOURISM SYSTEM AND THE INDUSTRIAL SYSTEM OF VALAIS



IRER/JC/1999

4.2.2 The impact of exchange rate

The Valaisan economy distinguishes itself by its great openness to the exterior and its specialised activities are not favoured by the Swiss franc.

- Tourism is suffering from the Swiss franc's appreciation. Both foreign and Swiss customers increasingly prefer other destinations. The spin-off activities such as construction, real estate business or the retail trade have also been seriously affected by

this phenomenon. Jäger, Minsch and Abrahamsen (1996) established that for the period of 1980 to 1993, an appreciation of the Swiss franc by 1% in real terms led to a fall of 0.4% to 2.3% (depending on the country of origin) in nights spent in Switzerland by foreign tourists. Besides, unlike the industrial sector, the players in the sector of tourism can hardly relocate their production and they are bound irremediably to their geographical location. This being so, they frequently choose to hire underpaid foreign labour at the expense of service quality, even while attempting to develop strategies of co-operation.

- The industrial system of Valais, for its part, is characterised by the predominance of three large firms whose decision-making centres are not located in Valais. The added-value of these plants is rather low. Up to now, these activities have not been relocated because of heavy investments already made in the region. It was less costly to push the plants towards more value-added products than just to close them.

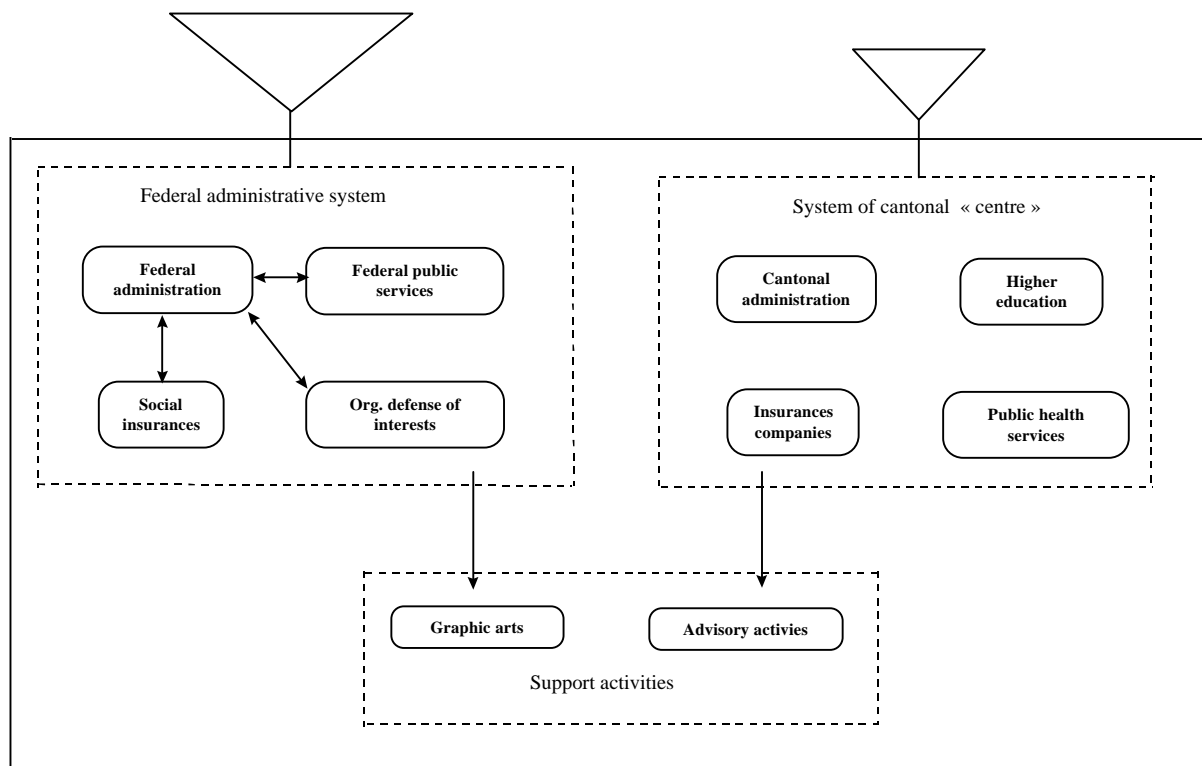
In conclusion, tourism in the Valais tried to resist foreign competition by shifting from hotel to cheaper accommodation in rented flats and by hiring cheap foreign labour. The latter feature explains the good level of employment in the region. Nevertheless, since 1992, the pressure has been too high and this fragmented, cost oriented sector of tourism has had trouble finding synergies and a certain coherence, although some initiatives (co-operation between various resorts, for example) are beginning to emerge. The industrial fabric, which is marked by an absence of autonomy and tradition, is not really rooted in Valais. The whole Valaisan economy is suffering from the Swiss franc's appreciation, and the quasi-absent co-operation between the local players hinders endogenous development processes.

4.3 The Bernese administrative system

4.3.1 The broad features of the RPS

The conurbation of Berne is characterised by the preponderance of tertiary activities connected with the public sector (see Table 3). Berne is the administrative centre of Switzerland and also serves a large canton. It is the seat of the Federal Government and of the various departments of the Federal Administration, as well as of three large state-owned enterprises: the Swiss Federal Railways (CFF), the Postal Administration and Swisscom. Some public services (in the area of health and higher education) have a very strong presence. The Bernese conurbation plays the role of a centre and acts as a catchment area for flows from all over the country. This production system is dominated by large organisations geared to the national economy.

TABLE 3 : THE BERNESE ADMINISTRATIVE SYSTEM



IRER/JC/2000

4.3.2 The impact of exchange rate

As a federal and cantonal centre, Berne is sheltered from currency fluctuations. A protected public sector predominates and the commercial services of the private sector here are destined chiefly for clients in the domestic market. The Bernese conurbation accounts for a bit less than 6% of the country's employment, but for only 1.6% of the country's total goods exports.

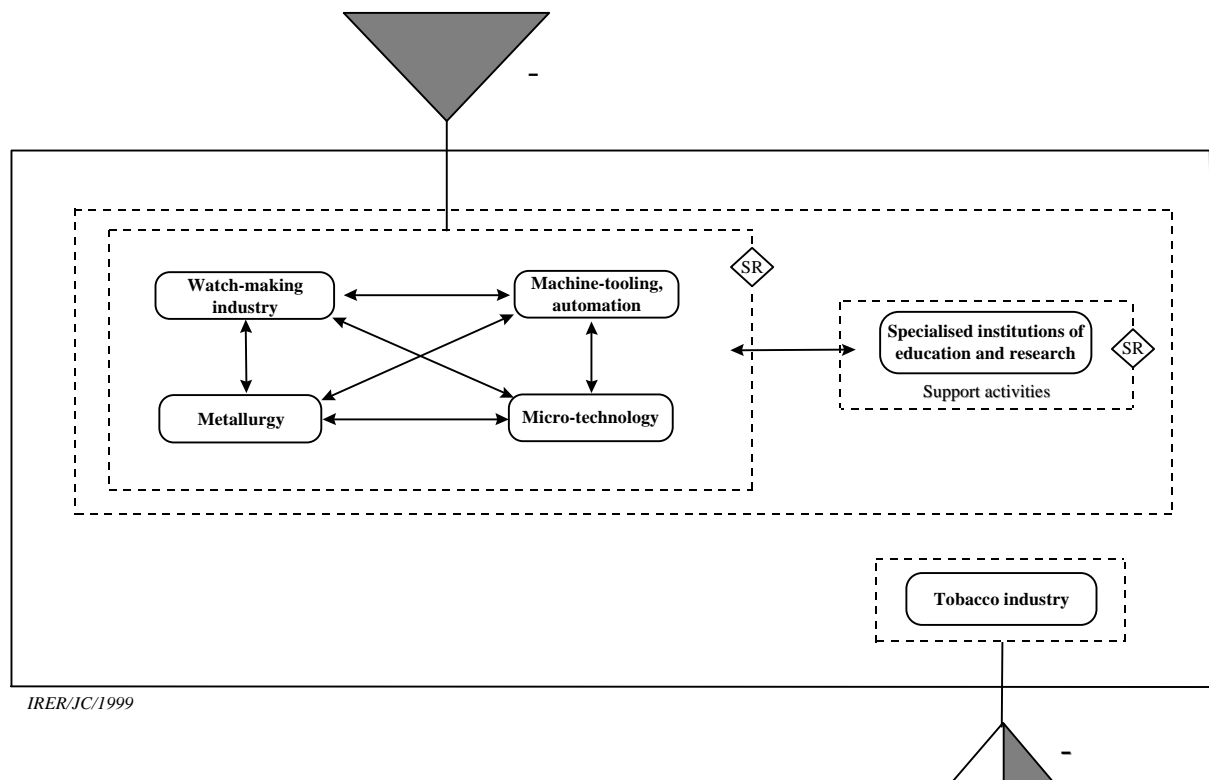
To conclude, Berne has seen a substantial growth in employment whilst being sheltered at the same time from the impact of exchange rates.

4.4 The industrial production system in the Swiss Jura

4.4.1 The broad features of the RPS

The economy of the Jura region is characterised by strong specialisation in four complementary industrial branches: machine tool and automation, micro-technology, metallurgy, jewellery and watch-making. This system is fundamentally an exporting one (about 15% of total Swiss exports in 1995 for a bit less than 8% of the country's employment). This economy also distinguishes itself by the predominance of sophisticated technological industrial activities and an abnormally low level of services rendered to firms. One should not forget to mention the presence of two large firms in the tobacco industry (see Table 4).

TABLE 4 : THE INDUSTRIAL PRODUCTION SYSTEM IN THE SWISS JURA



4.4.2 The impact of exchange rate

The industrial system of the Swiss Jura is geared heavily to exporting and thus is particularly exposed to the evolution of the Swiss franc:

- *The machine-tool/automation sector* declined because of the high Swiss franc and the absence of a collective regional innovation capacity. The machine-tool sector was subjected to accelerated restructuring (loss of jobs, relocation of subcontracting, take-over of firms by foreign groups). At the same time, each firm started a race in search of priceless advantages. As they acted individually and not by creating collective resources at the regional level, an uncontrolled upward spiral ensued, on very narrow markets with increasingly sophisticated products the costly development of which could not be amortised anymore by means of sufficiently large production series (Grosjean 1998).
- *The watch-making industry*: Because of the level of the Swiss franc, the watch industry specialised in high value added products (top-of-the range or fashion sensitive markets). Thus, even though the share of Swiss watch-making production in the world's volume output as shrunk drastically in the past decades, the share in terms of value has grown unabated. Until the beginning of the nineties, corporate strategy was devoted mainly to the development of new products. After this phase of innovation (new products, design and marketing), however, the firms concentrated on streamlining production, even relocating

part of it. The concentration of large groups further intensified this phenomenon as they themselves were investing in production in certain parts of Asia. Thus, some sub-contractors in the region of the Jura were forced to close down, others diversified into the field of mini-electronic components, the automobile industry, etc.

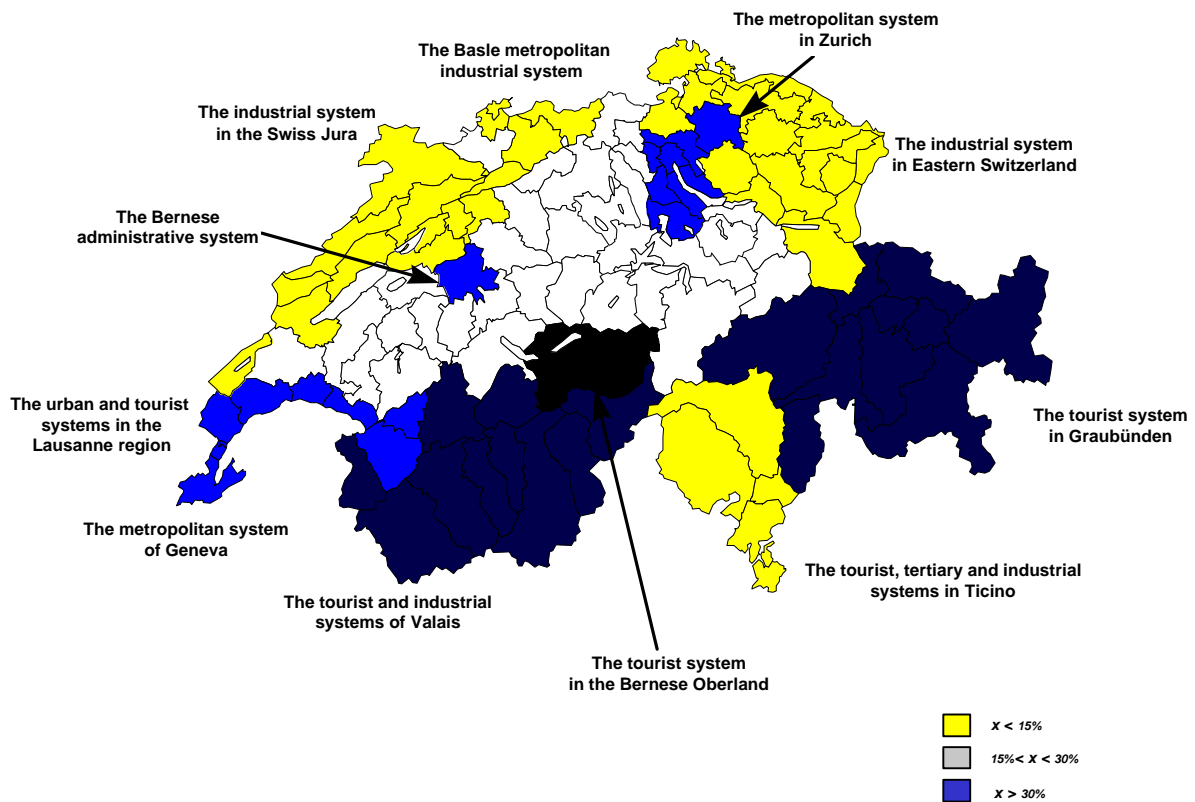
- *The micro-technical industry:* The firms in this high-tech sector have developed new products and sell them abroad. Nevertheless, due to the high level of the franc, they have not managed to grow and they specialised on niches.
- In *metallurgy*, especially in high precision milling, the appreciation of the Swiss franc is an additional obstacle to exports, but also in an indirect manner, inasmuch as the principals (customers) obtain supplies abroad or relocate. The result is stiffer requirements and eroded margins in certain markets. Thus, the firms were obliged to diversify their outlets.

In conclusion, under the pressure of a high Swiss franc, the export industry of the Jura managed to shift to high value-added priceless competition, wherever regional innovation capacities appeared, and declined sharply in other cases. In any event, even in the world-leading watch-making industry, employment fell heavily as a result of huge productivity increases (from 48'000 in 1975 to about 23'000 in 1995 !).

5. Exchange rate and regional differences in Switzerland between 1975 and 1995

How have the Swiss economy and, more particularly, the country's various RPSs developed during the period the Swiss franc appreciated? Depending on their exchange rate exposure one can subdivide the RPSs into five groups: metropolitan, industrial, tourist, sheltered and composite. Generally speaking, it is above all the urban regions, which appear to have positive or sheltered exposure, whilst the regions in the Alps and the Jura have negative exposure; the Basle region and the Ticino have positive and negative exposure simultaneously, because these regions' RPSs are composite given that some of their characteristic basic activities benefit from the Swiss franc's appreciation whilst others suffer from it (Figure 2, Table 5).

FIGURE 2 : EVOLUTION OF EMPLOYMENT IN THE VARIOUS RPSs, 1975-1995



Source : IRER/JC/2000.

The metropolitan systems, the activities of which are geared mainly to finance, earn a substantial share of their revenue abroad and the franc's appreciation is an advantage. In the period under consideration, the restructuring on an international basis of the financial activities and of those controlling the economic flows as well as the growth of these activities were appropriated by the main Swiss production systems specialising in this area: Zurich, Geneva, and to a lesser extent, Lugano.

Employment in the industrial RPSs fell largely below the national average and generally developed negatively. There are two reasons for this development: negative exposure to the Swiss franc's rate and the various movements, which followed as reaction to this shift (dramatic increase in productivity, relocation or simply decline). Still, it is interesting to note that even the highly innovating systems, such as watch-making, experienced waning employment. On the other hand, new activities (micro-technology, biotechnology, ...) were unable to take off. Was it because export difficulties?

The RPSs in tourism, also with negative exposure, did not respond in the same way to the franc's appreciation as did industry, because its productivity cannot be increased to the same extent. The nature of activities in tourism neither make them ill suited for automation, for

example, nor is the innovation potential of establishments (hotels, restaurants, etc.) as strong as in industry. Faced with the appreciation in the external value of the franc, cost compression was applied, in two ways. Firstly, by bringing in low-wage foreign labour, which explains the relatively good performance of these systems in terms of employment. Secondly, by changing from hotel-based tourism to a more cost-effective parallel hotel trade, which allowed for services to be replaced by the construction of apartments. Nonetheless, this evolution came to a brutal stop at the beginning of the nineties, when the Swiss franc appreciated again. This convulsion lasted for too long and the tourist RPSs experienced a crisis, with particularly severe effects in the construction sector.

The RPSs, which were protected from the franc’s fluctuations (Berne and Lausanne conurbations), surprisingly experienced higher growth than the financial centres. This was mainly the case of centres, which are of central importance to the region concerned or even to the whole of Switzerland, the main activities of which are geared to controlling the country’s internal flows. These are basically service activities (health, administration, higher education, media, etc.) the productivity of which can hardly be increased and the – domestic - market of which is usually an expanding one.

The industrial, metropolitan system of Basle went through a distinctly lower growth cycle compared with the country’s other large urban regions. The labour force in the chemical industry, which influences the structure of the whole region, declined by 12% whilst the large Basle firms in this sector boosted their international competitiveness by specialising in high added-value finished products. The rise in the cost of research and manufacturing in Switzerland occurred at the same time as the pull of relatively low investment costs abroad: the strength of the Swiss franc was used as leverage and helped the large industrial Basle groups go global. Since the end of the seventies, acquisitions and direct investment have multiplied to such an extent that jobs abroad today account for two thirds of all jobs in these firms. The SMEs in the chemical industry sometimes paid very dearly for acting as a buffer. It is interesting to note, however, that the shift of decision-making to the international level did not lead to a true metropolisation of the Basle region. The tertiary and, above all, the financial activities did not follow suit.

TABLE 5 : EVOLUTION OF EMPLOYMENT IN THE VARIOUS RPSs, 1975-1995

<i>RPSs identified in Switzerland</i>	Number of jobs	Number of jobs	Variation
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	in 1975	in 1995	in jobs
Metropolitan system of Geneva	53'584	81'781	53%
<i>Urban system of the Lausanne conurbation</i>	40'444	64'261	59%
<i>Tourist system of the Côte, Riviera, Vaudois Alps</i>	6'480	7'978	23%
Systems in the Lausanne region	46'924	72'239	54%
Industrial system in the Swiss Jura	100'453	70'206	-30%
<i>Valaisan tourist system</i>	35'436	44'650	26%
<i>Valaisan industrial system</i>	11'922	11'834	-1%
Valaisan systems	47'358	56'484	19%
Bernese administrative system	54'029	85'822	59%
Tourist system in the Bernese Oberland	16'125	18'878	17%
Basle metropolitan industrial system	67'636	76'539	13%
<i>Tourist system in the Ticino</i>	32'108	34'229	7%
<i>Tertiary system in the Ticino</i>	6'466	9'073	40%
<i>Industrial system in the Ticino</i>	8'449	4'762	-44%
Systems in the Ticino	47'023	48'064	2%
Metropolitan system in Zurich	189'561	263'948	39%
Industrial system in Eastern Switzerland	106'889	88'958	-17%
Tourist system in Graubünden	36'105	41'849	16%

Source: IRER/1999.

To conclude, the development of the Swiss financial centre, located in two to three large cities, benefited greatly from the appreciation of the Swiss franc and also fostered it. The move towards globalisation made by the large industrial firms, the banks and the insurance companies shows the same tendency. The RPSs, which paid dearly for this evolution and are still undergoing “adjustments” imposed by it, are continuing to shrink. At the same time, new activities are not emerging. The resulting regional imbalances are severe: migration to the financial centres, which are expanding and becoming more congested, a steeper decline of industrial and tourist regions than is warranted strictly by globalisation and technological change.

6. Conclusion: monetary integration and regional differences

Taking Switzerland as a case in point, different RPSs can be seen to react very differently when subjected to the same monetary constraints (as observed, in this case, with regard to the exchange rate). Taking the Swiss case as a starting point, a certain number of questions, or rather, of research hypotheses can be formulated regarding the *real* future differences in the Euro zone as a function of the intrinsic characteristics of regions.

- ◆ Export regions located in countries the currency of which is weak traditionally can be divided into two categories:

- Those with strong local networks could take advantage of the new strength of their currency by investing in other EU regions, which will have become cheaper suddenly; their largest firms, few of which have a tradition of operating internationally, could expand beyond national frontiers.
- The cost advantages of those with weak local networks could disappear, and their activities could be relocated out of the EU nations, to a large extent in eastern European countries.
- ◆ Export regions located in countries the currency of which is strong traditionally can also be divided into two categories:
 - Those with weak local networks could face difficulties in resisting competitors who will then evolve within a unified macroeconomic environment. Local firms could be incorporated into foreign groups.
 - Those with strong local networks could reinforce their advantages regarding products and services with low price elasticity (high-tech, niches, etc.).
- ◆ In the long run, and following the international trend of integration and spatial concentration of the financial sector, European financial centres could suddenly be faced with more direct competition than in the past. The strength of their local networks will become more important than the size of their national economy. Regions without strong financial centres (especially in the southern and eastern parts of the continent) could become directly dependent on the main European financial centres.
- ◆ Administrative and retail service centres (central places) could face continuity in the short term and could depend on the evolution of competitiveness in surrounding regions in the medium and long term.

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In each case the *localisation quotient* is the main indicator used to identify the RPSs; it expresses the degree of concentration of an activity i in a region j in relation to a reference territory, in general the national territory:

$$Q_{ij} = \frac{\left(\frac{E_{ij}}{E_{.j}} \right)}{\left(\frac{E_{i.}}{E_{..}} \right)}$$

Or:

Q_{ij} : Localisation quotient of the sector of activity i in region j ;

E_{ij} : Jobs in the branch of activity i in region j ;

$E_{i.}$: Jobs in the branch of activity i in the reference territory;

$E_{.j}$: Total jobs in region j ;

$E_{..}$: Total jobs in the reference territory.

A quotient greater than 1 means that the branch considered is proportionally more important in the region than in the whole of the country. Thus, it may be seen as a specialised activity of this region. It is usually even interpreted as a basic activity generating revenue for the region, since it can be assumed that, because of its over-representation, part of the output is sold outside the region.

To be considered as a specialised branch, the economic branches in a given territory must meet the following condition:

$$Q_{ij} \geq 1,5$$

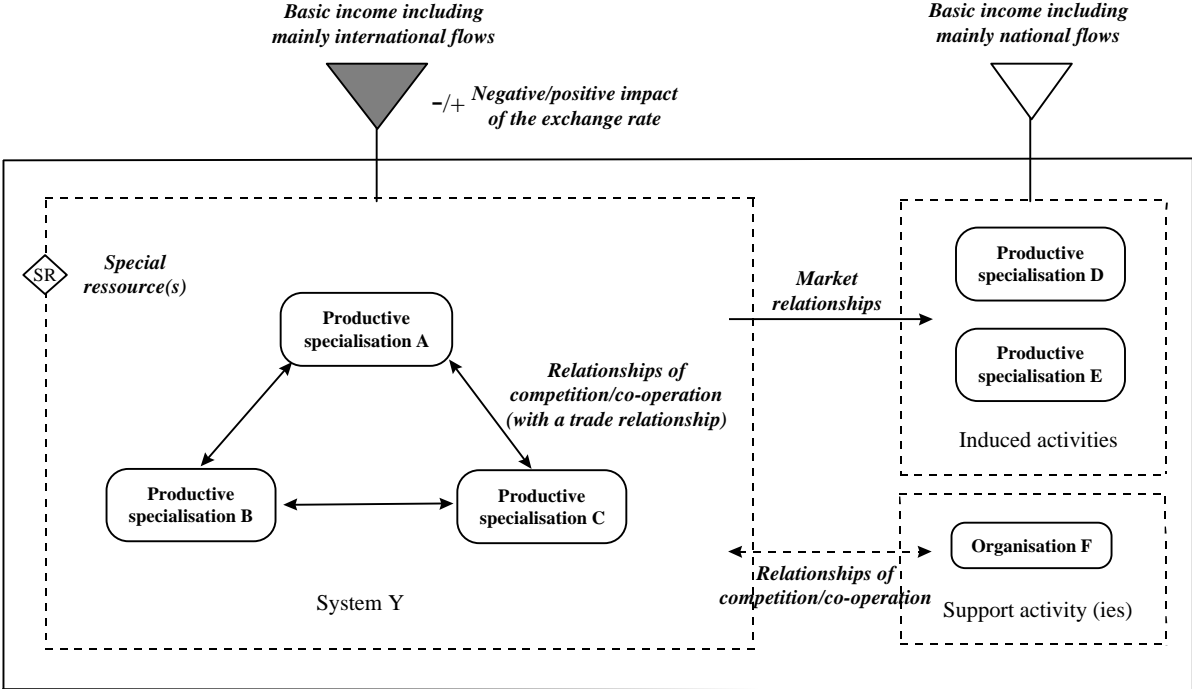
The first stage of identifying the RPSs and their spatial and sectoral boundaries was handled as follows:

- ◆ Drawing of SM maps based on the statistics of the localisation quotients;
- ◆ Pin-pointing the contiguous SM regions with a localisation quotient of $> 1,5$ in a given branch;
- ◆ On this basis, and for every identified zone, the various highly specialised branches were overlaid.

By this operation, however, a large number of RPSs clustered in diversified regions with a high density were eliminated. We therefore applied an additional criterion by retaining economic activities with a quotient greater than 1, but lower than 1.5 accounting for either at least 3% of all jobs in the region, or for at least 10% of jobs in the branch of activity at the national level, i.e.:

$$\left(1 \leq Q_{ij} \leq 1,5\right) \wedge \left(E_{ij} \geq \frac{3}{100} E_j \vee E_{ij} \geq \frac{10}{100} E_i\right)$$

APPENDIX 2: CAPTION OF THE DIAGRAMS



IRER/JC/1999