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**THE EFFECTS OF EUROPEAN MONETARY UNION
FOR SPECIAL REGIONS -
THE EXAMPLE OF THE
MIDDLE LOWER RHINE REGION**

Abstract: Regional effects of European Common Market have been analysed for a great deal of special regions. Nevertheless, there are only a few comparable studies of the effects of the European Monetary Union (EMU) for regions, because these effects are supposed to be of minor importance.

The following paper tries to analyse the economic effects of the EMU for a special region. In the first part of the paper the real economic effects of the EMU are described and classified. The result of this classification can be stated as follows: The positive effects of the EMU for special regions will be the higher

- the higher the price- and exchange-rate sensitivity of regional production,
- the higher the international economic integration of the region and
- the higher the regional competitiveness.

In the second part of the paper these three aspects will be examined for a special region - namely the „Middle Lower Rhine Region“, which is situated in the west of Düsseldorf between the river Rhine and the Dutch-German border.

The Effects of European Monetary Union for special Regions The Example of the Middle Lower Rhine Region

In May 1998 the final decision about the beginning and the participants of the European Monetary Union (EMU) have been made. Under the aspect of taking influence on this decision, it is too late to think about the risks and chances of this EMU from a regional point of view. Nevertheless, the description of possible consequences of the EMU for selected regions seems to be necessary. It allows to judge the future developments of these regions and it can tell something about the needs for urban and regional policy. The following paper tries to analyse the economic effects of the EMU for a special region. In the first part of the paper the real economic effects of the EMU are described and classified. In the second part of the paper the relevance of these effects for a special region - namely the „Middle Lower Rhine Region“ - will be analysed. The central question is, whether the regional effects of the EMU work in favour of this region or whether the risks will dominate.

1. Effects of the EMU

The chances and risks [OCHEL, 1996, p.21-34; FELDSIEPER, 1979, p.546; BOFINGER, 1991, p.219ff.; GRETSCHMANN, 1997, p.24ff.] of the EMU can be judged on the ground of

- Macroeconomic stability,
- Microeconomic efficiency and
- Distribution of the effects (among other things the regional distribution).

As different effects on the aspects of macroeconomic stability can hardly be expected, this topic will not be considered in this paper. The paper centers on the real economic aspects and their effects on microeconomic efficiency and regional distribution. Because the theoretical effects of the EMU are similar to those of the European Common Market [JOCHIMSEN, 1997/98, p. 15] the following presentation uses the systematics of the „Checcini-Report“ [COMMISSION OF THE EUROPEAN COMMUNITIES, 1988, p.38 and p.152]. Following this approach, one can distinguish between static and dynamic effects of economic integration.

1.1. Static Effects

If measures of international liberalisation lead to a single increase in the level of economic activity, but do not change the dynamics of economic development, they are called „static“ effects. Static effects are:

Absence of transaction costs: Generally, transaction costs arise in connection with any economic transaction (sales, purchases):

- First of all, the costs of changing into different currencies have to be mentioned. If households or enterprises want to change currencies for foreign transactions, they have to accept a disagio between the buying and selling rate of exchange.

- Furthermore enterprises have to provide special staff and facilities for carrying out foreign exchange business.

With the introduction of one single currency in Europe these costs of transaction disappear. The calculations of the European Commission [KOMMISSION DER EUROPÄISCHEN GEMEINSCHAFTEN, 1990] show the economic importance of this type of costs: The Commission estimated the the sum of transaction costs to be payed by European households and enterprises are about 8 to 13 billions ECU. This is approximately 0.2 to 0.3 % of the gross domestic product (GDP) of the European Union. The Commission further argued that the existence of different currencies complicates the entrepreneurial account systems and it makes the controlling more difficult. Finally - in the Commission's opinion - the fragmentation of cash leads to lower interest returns. These internal costs of enterprises are estimated of 4 to 5 billions ECU, which is 0.1 % of the Union's GDP. Therefore, the whole saving of transaction costs in the case of a single currency in the EMU will amount to approximately 0.5 % of the GDP of the European Union.

Costs of the conversion into the EURO [KRUSCHWITZ, 1997, p.528]: On the one hand in the phase of the conversion into the EURO there might appear some problems for the enterprises which will lead to additional costs: All enterprises have to adjust their account systems, their controlling and their systems of salary payments. Innumerable forms and price lists have to be modified, computer software has to be reset and the electronic data processing has to be adjusted. By this, the retail trade and the banking sector may be more affected than enterprises in other branches. On the other hand there are not only costs but also returns in other sectors of the economy - for example, the producers of vending machines and those firms that install such machines can expect a temporary increase in their level of economic activity.

1.2 Dynamic Effects

The change to a single European currency unit will not only lead to static effects that increase the level of economic activity, but will also influence the dynamics of economic development. Dynamic effects are:

Reduction of the risks of exchange rate fluctuations (partly static, partly dynamic): A further advantage of the EMU is seen in the fact that there will be no more exchange rate movements und uncertainty in the future. This is of interest under three aspects:

- **Economies by reducing the costs of forward exchange cover:** In a monetary union there can be no exchange rate variations. So costs of forward exchange cover cannot occur. A study of the Ifo (Institute for Economic Research, Munich) shows that these costs should not be underestimated even if there are only hard currency countries under consideration - like Germany, Austria, France and the Benelux-countries. According to that study the costs of forward exchange cover are in the case of France as high as in the case of Great Britain or Italy [OCHEL, 1996, p.21].
- **Growth effects by reducing uncertainty:** In economic theory uncertainty of economic players leads generally to more fluctuations in profits which reduces investment activities,

export activities and production [BELKE, 1997, p.409f]. Therefore, a lower degree of exchange rate uncertainty will improve the basis of calculation for those enterprises which are involved in foreign trade or directly invest in foreign countries. These considerations are confirmed by empirical results [BELKE, 1997, p.402f] that show a higher growth of industrial production, a higher employment in the industrial sector, a decreasing rate of unemployment and higher investment by reducing the fluctuations of the exchange rates.

- **Reduced pressure for revaluation, wage costs and international competitiveness.** In this context, two aspects should be mentioned:
 - **Effects of a reduced pressure for revaluation of the DM on international trade and direct investments:** In the past the DM was often under revaluation pressure and the German economy had to cope with the resulting real economic effects. On the one hand these real economic effects mirrored in the increasing prices of exports and the decreasing prices of imports combined with a reinforcement of import competition. On the other hand the revaluation pressure led to direct investment in foreign countries in order to compensate locational disadvantage due to revaluation [MÜNZER, 1996, p.788]. From the German point of view, this aspect is of special importance because the exchange rate variations of the DM had been determined more by the expectations and speculations of the international capital investors than by real economic facts. The fixing of the exchange rate within Europe might reduce this pressure for revaluation considerably and the decisions concerning exports, imports and investment may be freed from distorting speculative influences.
 - **Effects of a reduced pressure for revaluation of the DM on the international relations of wage costs:** The pressure for revaluating the DM that could often be observed in the past, is also important for international wage cost comparisons and the competitiveness of the German economy. A conversion of the current wage costs per hour at the exchange rates of 1970 shows that the wage costs of many countries would have been considerably above the German level, if the currencies of these countries had not been devaluated. The reason for Germany being in a top position with its wage costs can be found especially in the exchange rate changes of the last 25 years and less in high or excessive wage pushes of the German trade unions. Such exchange rate changes must be seen as a problem especially if they are caused by portfolio decisions on international capital markets. Speculative revaluations of the DM which exceed the purchasing power parity increase the relative wage costs in Germany and reduce the relative competitiveness of the German economy. The EMU will put an end to speculative DM revaluations - at least in the European context.
- **Reinforcement of European economic integration, intensification of intra-Community division of labour and higher degree of competition:** The welfare increasing effects of the liberalization of international trade are well-known from the theory of international trade. This basic idea had already been the impetus for the realisation of the Single European Market. It is of great importance for the EMU, too: All steps on the way to European economic integration which have been done until now or will be realized in the future will increase the welfare of the people in the European Union by intensifying international competition and by using the full scope for growth. The introduction of a single currency in Europe will improve the transparency of markets and prices in Europe

and will support a further international division of labour. Therefore the described effects are very similar to those of the European Single Market Programme [for the effects of economic integration cf. DÖHRN and HAMM, 1991 pp. 81ff.], even if their intensity is often supposed to be lower:

- **„Economies of scale“ effects:** An increased transparency of markets and prices opens the possibility of enterprises to act on greater markets in the future. Acting on greater markets permits to make use of „economies of scale“ in production.
- **Intensification of competition:** Dynamic effects can be expected by an intensification of competition caused by a further internationalisation of markets. The intensified competition forces to remove inefficiencies and supports to pass on the resulting advantages to the consumers. The passing on of advantages to consumers increases the welfare of people on the one hand. But on the other hand the less efficient enterprises and regions might be affected negatively as a consequence of the necessary processes of restructuring and reallocation which are caused by intensified competition. Referring to enterprises and sectors, to states and regions, there will not only be winners in this process but also losers.
- **Improvement of the (spatial) allocative efficiency:** Since the beginning of the EMU, the decisions of investors are no longer distorted by the existence of different currencies. Goods, services, capital and labour become more mobile and the integration will deepen on the regional level, too. Throughout Europe, the regional and locational competition is becoming more fierce in a European dimension [JOCHIMSEN, 1997/98, p. 15]. Consumers can benefit from the results of this competition in form of a better market supply. This again shows the ambivalent character of the process of intensifying competition whereby there are not only winning but also losing regions.
- **Real income effects:** Finally, real increases in income can be expected because of the described effects of European integration. These real income effects may reinforce the regional and sectoral reallocation processes if they lead to a shift in the structure of demand.
- **Adjustment to asymmetric shocks without exchange rates:** Exchange rates are one of several mechanisms of adjustment to absorb real economic asymmetric shocks or different developments in various European countries. Examples for such different developments may be increasing wages of varying rates, differences in productivity increases but also different developments of demand preferences. By the introduction of a single currency, the flexibility of exchange rates as a mechanism of adjustment to different real economic developments is abolished. The question is how the possible adjustment reactions look like afterwards [LÖHR, 1997, p. 322]:
 - The effects of asymmetric shocks could be reduced by the movements of production factors. At present, an increasing factor movement can hardly be expected. Firstly, factor mobility (real capital and labour) is connected with high costs and is only in the case of permanent real economic divergencies profitable. Secondly, a comparison with the United States shows [KOMMISSION DER EUROPÄISCHEN GEMEINSCHAFTEN, 1990] that the regional net migration rate in Europe is far below the that of the United States; the relation has even become worse in the past. In

Europe labour movements do not make a contribution to reduce regional labour market disparities until now. The reasons for this relative low mobility of labour in Europe are language barriers, cultural barriers and differences in social systems and social benefits.

- Flexibility of wages and prices is another mechanism of adjustment in place of flexible exchange rates. Permanent increases in productivity at a lower rate in one country would not lead to a reduction of employment, if there were a compensation by the development of real wages. The question is, whether wage flexibility in Europe is high enough. Until now the necessary wage flexibility cannot be observed. The response of wages to the rate of unemployment in the European countries is considerably below that of the United States.

Therefore, the efficiency of mechanisms of adjustment in place of flexible exchange rates cannot fully be guaranteed at the moment. The advantages of the EMU will be the higher, the lower the risk of asymmetric disturbances. The risk of asymmetric disturbances again is the lower, the higher the real economic convergence of the EMU member states. Otherwise, the repeal of exchange rates as a mechanism of adjustment in case of asymmetric shocks may have the consequence of increasing national and regional divergencies. This again is combined with the risk that the affected states and regions call for using instruments of fiscal policy to reduce regional disparities. As there is a risk for the EMU of falling apart in the case of high disparities, the call of these states might be followed [BERTOLD, 1992, p. 26; LIPP, 1991, pp. 227f.].

- **Stabilization of European foreign trade relations, strengthening of bargaining power against third parties:** Beside the effects described above there are some other aspects discussed in economic literature [OCHEL, 1996, p. 22]. For reasons of completeness some, of them will be mentioned here even if they are less certain or less important than the already discussed aspects:
 - Due to the greater single currency area of the EMU exchange rate variations can be dampened more easily.
 - Due to the greater single currency area of the EMU the dependency upon the US interest rates might decrease.
 - Finally, the future Europe can speak with one voice and therefore Europe may increase its political influence in the world.

2. Regional Consequences for the „Middle Lower Rhine Region“

After having described the possible real economic effects of the EMU, the paper tries to analyse the relevance of these effects for the „Middle Lower Rhine Region“ - a region consisting of the cities of Krefeld and Mönchengladbach and the counties of Viersen and Neuss, situated between the Dutch-German border and the river Rhine in the neighbourhood of Düsseldorf.

The previous considerations suggest the following:

- It can be expected that the chances of regions to be favoured by the effects of the EMU will be the higher the higher the price- and exchange-rate sensitivity of the dominating sectors had been in the past; since these sectors and with them these regions will all the more be favoured by the reduced exchange rate fluctuations and the reduced pressure for revaluation in the EMU.
- It can be expected that the chances of regions to be favoured by the effects of the EMU will be the higher the more the regions are involved in the international division of labour via foreign trade; since the greater will be the savings of the regional economy in the field of transaction costs and costs of forward exchange cover, the stronger can be the positive effects of a reduced uncertainty and the more important is the preservation of and/or an increase in the international competitiveness by reducing the DM-upward pressure.
- It can be expected that the chances of regions to be favoured by the effects of the EMU will be the higher the more the regional enterprises are efficient and innovative and the more the locational conditions of the region are judged favourably; since the better the entrepreneurial performance and innovation capability is, the better will be their chance to belong to the winners in an intensified competition process, and the better the regional locational conditions are the higher will be for the regions the chance to hold its ground in an intensified regional locational competition.

In the following indications to these three topics will be collected with special attention to the „Middle Lower Rhine Region“.

2.1. Exchange rate sensitivity of the regional economy

The regional effects of the reduced exchange rate dependency and of the reduced upward pressure for revaluation will be dealt here only in an indirect way by mentioning some results of existing empirical studies for Germany and Northrhine-Westphalia:

- The foreign trade share of GDP dependent on the exchange rate amounted to 20.8 % on the basis of commodity trade. In case of a monetary union in which by all member countries of the European Union had participated, this share would have decreased to 9 %. A similar reduction would have resulted if border crossing services had been taken into consideration. Therefore, with the introduction of the EMU the share of foreign trade dependent on the exchange rate will be reduced considerably [DEUTSCHE BUNDESBANK, 1998, p. 50].
- Econometric estimations confirm this result. Before the beginning of the EMU estimations of the German Federal Reserve Bank suggested that a real revaluation of the DM (with regards to the currencies of 18 industrial countries) by 1 % leads to a decline of exports of 0.7 % and to an increase of imports of 0.25 %; so the trade balance deteriorates by almost 1 %. If the consequences of a revaluation of the DM were estimated merely with regard to non-member countries of the European Union, the decline of exports caused by a 1 % revaluation of the DM amounts to only 0.3 %. The imports do nearly not react in this case and the trade balance effects reduce to one third of the former value. The results indicate

that the exchange rate dependency of the German foreign trade must have been reduced since the beginning of the EMU [DEUTSCHE BUNDESBANK, p. 52f.].

- As far as regional aspects are concerned econometric estimations show a significant exchange rate dependency of the Northrhine-Westphalian exports [GRETSCHMANN, 1997, p. 132f.]. Furthermore other estimations[MILTON, 1994, p. 28ff.] indicate that the exchange rate reability of export-oriented industrial sectors (chemicals, motor vehicles, electric and non-electric machinery) lies considerably above the described average values - that means that the effects of exchange rate variations might concentrate on a few industrial sectors and to those regions, where these industries are of great importance. Finally, the estimations show that in Northrhine-Westphalia these industries react stronger than the German average to exchange rate fluctuations.

As besides this the share of exports from Northrhine-Westphalia to the member countries of the European Union lies above the German average (see chapter 2.2.), too, this indicates that Northrhine-Westphalia could be favoured more than average by the advantages of a lower exchange rate variability. This can even with great caution hardly be used as an indication for an overproportional exchange rate reability of the exports from „Middle Lower Rhine Region“.

2.2. Foreign trade dependency of the regional economy

Industrial foreign sales of enterprises are the only statistical source which exists on the regional level to verify the foreign trade dependency of the regional economy. As the results of table 1 indicate the economy of the Middle Lower Rhine Region traditionally shows a higher export quota than the rest of Northrhine-Westphalia or Western Germany. Already in 1980 more than one third of the industrial turnovers were realized by export trade. The comparable values for Northrhine-Westphalia and Western Germany only reached about 24 %. In the course of time the export quotas and foreign trade dependency show a tendency to rise. In 1996 the export quota of the Middle Lower Rhine Region (42.8 %) still lies considerably above those of Northrhine-Westphalia (29.5 %) and Western Germany (30.9 %).

Table 1: Foreign trade dependency of the "Middle Lower Rhine"
Foreign sales in percent of total turnover

	Middle Lower Rhine	Northrhine-Westphalia	Western Germany
1980	34,4	24,4	24,3
1987	41,1	28,8	29,7
1994	39,8	26,7	28,4
1996	42,8	29,5	30,9

Source: LDS (NW)

The high export quotas of the regional mechanical engineering sector (more than 60 %), of the chemical industry (almost 60 %) and of the fabricated metal producing sector (55.5 %) are remarkable. In all three branches the export quotas of the industry in the Middle Lower Rhine Region lie considerably above the national average. Together these branches reach almost 70 % of the total industrial foreign sales of the Middle Lower Rhine Region. A shift-share-analysis of the region's industrial foreign sales leads to the following conclusions: In 1996 the regional export quota lay about 40 % above the national value (Regional factor > 1). Obviously this is less a result of the regional industrial structures, because those sectors which nationwide have high export quotas are represented only a little above average in the Lower Rhine Region (Structural factor just above 1). The main reason is that most of the particular regional industries are able to sell more than average of their production to foreign countries (Locational factor significantly above 1).

Table 2: Foreign trade dependency of the Middle Lower Rhine Region
Export quotas by industrial sectors, 1994

	Middle Lower Rhine	Western Germany
Stone, clay and glass products	8,8	7,4
Non ferrous primary metals	20,9	35,5
Foundries	15,5	18,8
Skeleton construction	10,0	11,1
Mechanical Engineering	62,5	43,6
Motor vehicles	31,2	44,6
Electric and electronic equipment	25,8	32,4
High precision engineering, optics	13,2	35,4
Fabricated metal products	55,5	23,8
Chemicals	59,2	41,5
Lumber and wood products	9,7	9,4
Paper and allied products	17,9	18,7
Printing	10,8	7,1
Rubber and Plastics	16,1	21,6
Textile Mill Products	29,2	28,4
Apparel and other textile products	18,6	21,5
Food and kindred products	18,6	9,5
Other Industries (incl. primary metals)	37,3	23,1
Total	39,8	28,4
Source: LDS (NW)		

The reported results prove that the economy at the Middle Lower Rhine Region is depending more than the average on their foreign sales. But so far the destination countries of the exports have not been considered. The regional economy will only be favoured by the advantages of the EMU if it keeps up foreign trade connections with other EU-countries. The foreign sales of the regional industry with the EU-countries can be estimated, if it is supposed that the EU-orientation of the particular industrial sectors in the Middle Lower Rhine Region corresponds to the Northrhine-Westphalian average. The calculations show, that the share of EU-foreign sales amounts to 21.5 % of total industrial turnover in the Middle Lower Rhine Region. With

15.6 % the comparable value for Western Germany lies considerably below. So it can be stated that the economy of the Middle Lower Rhine Region more depends heavily on the exports to the EU-member-countries.

The thesis of a high dependence of regional industry on exports to other European countries is underpinned under aspects of employment, too. In the Middle Lower Rhine Region about 70 % of all employees work in sectors which export more goods than national average to EU-countries. About one half of these people is employed in industrial branches with a more than average export quota. The West-German and Northrhine-Westphalian structures look completely different [GRETSCHMANN, 1997, p. 115]: In Northrhine-Westphalia, even 80 % of the industrial workforce are employed in sectors with a more than average share of EU-exports, but less of them in sectors with a more than average export quota. In West Germany the comparable share amounts to only 63.5 %, most of them (42.4 % of total) working in sectors with less than average export quota.

2.3. The competitiveness of the regional economy

The competitiveness of enterprises is defined as the ability to sell goods under fully competitive conditions on the market. In analogy to this one can define the competitiveness of an economy as the aggregated competitive power of its enterprises [GRIES/HENTSCHEL, 1994, p. 416]. This interpretation, however, does not cover all the aspects of this conception. The „locational competitiveness“ of a region can be defined as its ability to attract scarce and mobile factors of production which are needed complementary to the available immobile factors of production [GIERSCH, 1979, pp. 629ff.]. If one wants to consider this aspect of „regional competitiveness“, too, it seems to be convenient to define the competitiveness of an economy (a region) by the interaction of the entrepreneurial success on the microeconomic level and the relative locational attraction on the macroeconomic level [STRAUBHAAR, 1994, pp. 535f.]. The economic and social policy framework and the regional factors of location determine the „locational competitiveness“ and they limit the entrepreneurial scope of action. How far it can be transformed into an entrepreneurial success depends on the entrepreneurial abilities („individual entrepreneurial competitiveness“). Therefore, the analysis of the results of entrepreneurial efforts has to be completed by an analysis of the locational attractiveness.

2.3.1. The competitiveness of enterprises

Statements about the competitiveness of enterprises can hardly be made, because on the one hand one cannot describe the competitiveness in a direct way, but only with the help of indicators. On the other hand future competitiveness is most interesting, information, however, exists essentially for the past. Remembering these objections, two indicators are taken into consideration:

- the development of domestic and foreign sales of the Middle Lower Rhine Region and
- the regional innovation potential which represents an important condition for realising future chances in the process of competition.

The change of the regional industry's share of total West German domestic and foreign sales from 1980 to 1994 shall inform on whether the regional economy could hold its position in national and international markets. Table 3 shows that the domestic sales share of the regional economy as well as its share of foreign sales have decreased in the course of time: The foreign sales share declined from 3.66 % to 2.87 % and the domestic sales share from 1.99 % to 1.72 %. The values of 1996 cannot be compared completely with those of earlier years, because they are based on another method of data collection. Though the available data seem to show a stabilization of the values, the short period between 1994 and 1996 and the changes of the database do not yet admit any safe conclusions.

Tabelle 3: Entwicklung der Inlands- und Auslandsumsatzanteile wichtiger Industriezweige am Mittleren Niederrhein
Anteile an Westdeutschland in vH

	Anteil am Inlandsumsatz			Anteil am Auslandsumsatz				
	1980	1987	1994	1996	1980	1987	1994	1996
NE-Metallerzeugung	n.a.	5,12	5,82		n.a.	3,01	2,80	
Stahl- und Leichtmetallbau	2,42	2,26	2,95		2,14	2,04	2,62	
Maschinenbau	2,11	2,08	2,20	1,86	4,70	5,03	4,74	4,34
Straßenfahrzeugbau	0,55	0,51	0,38		0,08	0,11	0,21	
Elektrotechnik	1,61	1,03	1,23		1,53	1,34	0,89	
EBM-Waren	1,65	2,40	1,56		4,28	6,08	6,23	
Chemie	3,40	3,63	3,19	3,39	8,05	7,92	6,53	7,17
Textilgewerbe	6,27	5,58	5,27	5,98	9,31	6,48	5,47	7,92
Bekleidungs-gewerbe	3,13	2,99	2,87	3,13	2,48	2,28	2,39	2,04
Nahrungs- und Genußmittel	2,45	1,95	1,80	1,89	3,92	3,40	3,93	2,95
Sonstige (inkl. Eisensch. Industrie)	1,75	1,76	1,02		2,07	2,59	2,02	
Insgesamt	1,99	1,90	1,72	1,72	3,26	3,14	2,87	2,88

Eigene Berechnungen nach Angaben der statistischen Ämter. - Die betrachteten Sektoren haben am Mittleren Niederrhein einen Anteil von 78,3 vH bzw. 87,5 vH an den Umsätzen bzw. Auslandsumsätzen

Differentiated data by branches of industry may give evidence on the question which sectors are responsible for the decline of sales shares. Especially the „electric and electronic equipment sector“, the „chemical industry“, the „textile mills“, the „apparel and other textile products sector“, and the „food and kindred products sector“ had to accept a decline of domestic sales shares in comparison to 1980. Up to the „food and kindred products sector“ and the „apparel and other textile products sector“ these branches of industry also lost shares of foreign sales. On the contrary the „Mechanical engineering sector“ could stabilize its shares of both, domestic and foreign sales in the course of time. The „Skeleton construction sector“ on domestic and foreign markets and the „Fabricated metal products“ on foreign markets could record gains of shares.

Measured by the chosen indicators the industrial competitiveness of the Middle Lower Rhine Region must at least be questioned. In the last 15 years it failed in holding its position in national and international markets.

The entrepreneurial potential to adjust and to innovate belongs to the supply-side determinants of the regional economic development. Innovations increase the competitiveness of enterprises. This allows particular regions to precede or to recover in the process of economic development. Contrary to this, technological gaps represent disadvantages in the process of entrepreneurial competition and can contribute to a fall back of regions. The „regional innovation potential“ is not exactly defined, but mostly described by a number of indicators. In the study the results of this chapter are based on [FELDOTTO, 1996, pp 151ff.], eight indicators are used to analyse differences of innovation potentials between the Northrhine-

Westphalian counties by the method of cluster analysis. The intensity of patents, the intensity of research and development (R&D) and the intensities of technological grants from the national and state government shall characterize the entrepreneurial innovation potential. The share of R&D intensive branches, the share of product services, the intensity of inception of enterprises and the share of scientific staff shall describe the regional conditions for innovative activities.

On the basis of these indicators considerable weaknesses of the innovation potential can be stated for the Middle Lower Rhine Region [FELDOTTO, 1996, p. 153]: The city of Mönchengladbach is classified as more innovative than average, Mönchengladbach belongs to a group called „enterprise based type of location“. That means that the intensity of patents, the intensity of R&D, the intensities of technological grants and the intensity of inception as well as the importance of R&D intensive branches are higher than the Northrhine-Westphalian average; the equipment with product services and scientific staff is less than average. The city of Krefeld and the county of Neuss are classified as „weak innovative with average R&D intensity“. This means that for both regions almost all indicators attain only less than average values. Especially the county of Viersen comes off unfavourably in the comparison. It is characterized by an „extraordinary low innovation potential“, because it shows less than average values for all indicators. Its obsolete innovation potential can only be recovered by special efforts.

For the most parts the described results are confirmed by a new study [INDUSTRIE- UND HANDELSKAMMER MITTLERER NIEDERRHEIN, 1999]. This analysis tries to describe the regional innovation potential by several single indicators (qualification of the employees, share of R&D employees in the industrial sector, scientific university staff, intensity of technology oriented governmental grants and number of innovative enterprises). In the result, the regional potentials to realize R&D in enterprises correspond approximately to the Northrhine-Westphalian average. Regional equipment with scientific university staff and technology oriented governmental grants to the region lie below the average.

2.3.2 Locational Competitiveness

The quality of the locational conditions in the Middle Lower Rhine Region has been analysed in 1997 [GLEBE, 1997]. In this analysis the regional enterprises have been asked first, which factors of location are important for the entrepreneurial decisions. The answers indicate the firm specific demand for a region's conditions of location. In another question the firms have been asked how they judge the quality of locational conditions in their region. This gives information about if and how far the requirements of the firms are met. The larger the positive difference between the judgement of quality and the judgement of importance, the larger is the discontent with this factor of location and the sooner a bottle neck for the regional economic development may arise from it. For the „Middle Lower Rhine Region“ the results of the described proceeding can be summarised as follows:

Locational disadvantages:

- Local fiscal burden: The four factors with the highest deviations between the judgement of quality and importance (business scale rate, local rates, land tax rate and costs of refuse disposal) all express, that the enterprises perceive the local fiscal burden as being too high. This unfavourable result however needs some kind of relativation: Coinciding with the results of the cited analysis a number of local structural studies for smaller towns of the Middle Lower Rhine Region [HAMM, 1998 and similar studies for six other towns in the analysed region] show the same high importance and the same unfavourable valuation of local rates and taxes, although the local fiscal burden differs from town to town. This can mean, that the burden of rates and taxes in general (probably everywhere in Germany) is felt too high by the firms. Consequently it is more a national than a regional locational disadvantage.
- Other cost factors: The wage costs, the energy costs, the level of rents and the prices of floor space belong to the deficit factors in the Middle Lower Rhine Region, too.
- Local administration: Finally there are disadvantages concerning local policy and administration (level of regulations, efficiency of administration and availability of fiscal grants).

Locational advantages:

- Environmental attractiveness: The firms appreciate the „soft“ locational factors (local supply of recreation-, leisure time-, education- and cultural facilities as well as the site of the cities and the regional image) and the household oriented elements of infrastructure (shopping facilities, supply of housing, supply of household oriented services) in the Middle Lower Rhine Region.
- Equipment with economic infrastructure: Apart from some smaller gaps to be closed in the future the transportation infrastructure (including airports, railroad connections and inner urban traffic situation) belongs to the locational advantages of the Middle Lower Rhine Region. The information and communication infrastructure of the region is judged positively by the enterprises, too. Utility equipment and - in spite of high costs - installations for refuse disposal are evaluated positively. Also the R&D infrastructure receives good marks by the firms. Finally the availability of producer services is viewed to be satisfactory. Consequently the Middle Lower Rhine can be regarded as a region with favourable infrastructural potentials.

Summary and Conclusions

The Middle Lower Rhine Region has a good chance to be favoured more than average by the static effects of the EMU. This looks quite different with the dynamic effects. It is true that the above average exchange rate reactivity of important Northrhine-Westphalian export industries lets expect growth effects for the Middle Lower Rhine Region, too, by the reduction of uncertainties and revaluation pressure. But the starting conditions of the region and their enterprises in an intensified process of competition must be seen critically for in the past the regional enterprises neither could hold their share of West German domestic sales nor of foreign sales. Besides the regional innovation potential shows visible weakness. Finally the

locational conditions of the Middle Lower Rhine Region show advantages but disadvantages, too. The total picture is still positive for the most serious disadvantage - the burden of rates and taxes - is more a national than a regional problem.

Finally there is the question how to improve the starting conditions of the Middle Lower Rhine Region in the EMU. With regard to future competitiveness the efficient use of the available innovation potentials (e.g. University of Applied Sciences) is most important; furthermore the innovation potentials of adjacent regions should be opened up. The objective of this must be a strengthening of the regional innovation potential. Concerning the locational conditions existing advantages must be conserved or extended and they have to be presented outside the region. Here, special attention should be paid to the infrastructural facilities and environmental attractivity. The locational disadvantages however have to be reduced. Regional administration and the regional and urban political players have the possibility to make their own contributions to an increase of locational attractivity, e.g. by a better co-operation of the acting offices, by a reduction of bureaucratic regulation, by an intensified care for the existing stock of enterprises and by the creation of a probusiness climate. It is true that cutting off the burden of rates and taxes is a problem to be solved on the national level, but appropriate measures on the local level could support the national activities and this, too, would be of benefit to the Middle Lower Rhine Region.

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