ECONSTOR
Make Your Publications Visible.

A Service of
ZBW
Leibniz-Informationszentrum Wirtschaft
Leibniz Information Centre for Economics

Frenkel, Michael

Article — Digitized Version

Germany's international competitive position under siege

Intereconomics

Suggested Citation: Frenkel, Michael (1994) : Germany's international competitive position under siege, Intereconomics, ISSN 0020-5346, Nomos Verlagsgesellschaft, Baden-Baden, Vol. 29, Iss. 1, pp. 10-17, https://doi.org/10.1007/BF02929806

This Version is available at:
https://hdl.handle.net/10419/140431

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.

WWW.ECONSTOR.EU

Mitglied der Leibniz-Gemeinschaft

transfer payments by raising taxes as early as the winter of 1990-91:

☐ it was advisable on cyclical grounds, as the economy was then booming;

☐ it was advisable on growth policy grounds, as the transfer payments were being used mainly for consumption, and

☐ in my opinion it was advisable for these reasons even on constitutional grounds under Article 115 of the Basic Law.

The consequence of the failure to change track in the winter of 1990-91 is that Germany entered the present recession in 1992 with a public sector budget deficit of DM 87 billion (equal to 2.9% of GDP) and a debt mountain of DM 1,200 billion (equal to 40% of GDP).

Further government borrowing, which would now have been justified on cyclical grounds, was out of the question, as it would have seriously shaken confidence in the German currency. The fiscal authorities had already shot their bolt before battle was joined.

The future path will be difficult. As long as the recession continues, there can be no thought of reducing the public debt. However, as soon as the economy is again working almost to capacity – probably in late 1994, according to the autumn forecast by the economic research institutions – serious measures must be taken to tackle the problem. The need for transfer payments will still be undiminished at that point, so that the Government will not have a choice between cutting expenditure and raising taxes: it will have to do both. It is to be hoped that the additional burdens that will be placed on the economy will not have too serious an effect on the propensity to invest. Perhaps the return to a sound, credible economic policy will restore confidence in the long-term international competitiveness of the German economy to such an extent that the additional burden will appear tolerable.

Michael Frenkel*

Germany's International Competitive Position Under Siege

Germany is sailing through rough waters. The German economic miracle seems to be over.[1] Although the concern about an unsatisfactory economic performance has risen in many industrial countries, it is now frequently argued that the adverse economic developments may be more pronounced in Germany than in other countries.[2] According to these arguments Germany is losing international competitiveness, which may soon lead to a decline in the standard of living and require a reduction in real wages.

A crucial reason behind the concern about Germany's international competitive position is the weak export performance since 1990. As Figure 1 shows, growth in German real exports has been considerably lower than growth in real world exports. In 1993 the volume of exports will even have gone down compared to 1992. The weak German export performance has raised concerns in political, business and research circles about the future international competitive position of German products. It is feared that the end of the current recession in Germany and other industrial countries will not lead back to a satisfactory performance in Germany's export industries. In this context it is often argued that there have been structural weaknesses for quite some time but have only recently become more evident.

Undoubtedly, the weak German export performance can be due to a number of factors, for example the trade diversion resulting from German reunification and the recession in Germany's main trading partners. In fact, some argue there is no competitiveness problem in Germany and the poor economic performance is solely due to recessionary effects. This suggests that an evaluation of Germany's competitive position needs to be based on a more detailed analysis of recent developments

* Koblenz School of Corporate Management, Koblenz, Germany. Based on a paper presented at the Conference of the Friedrich Ebert Foundation on *"Modell Deutschland* under Siege: Social Tensions, Unemployment and International Competition", Washington, DC, Dec. 13, 1993.

[1] This was first stated by R. Dornbusch: The End of the German Miracle, Journal of Economic Literature, Vol. 31 (June 1993), pp. 881-885.

[2] See, for example, Annual Report of the Council of Economic Experts ("Sachverständigenrat") 1993/1994, par. 183.

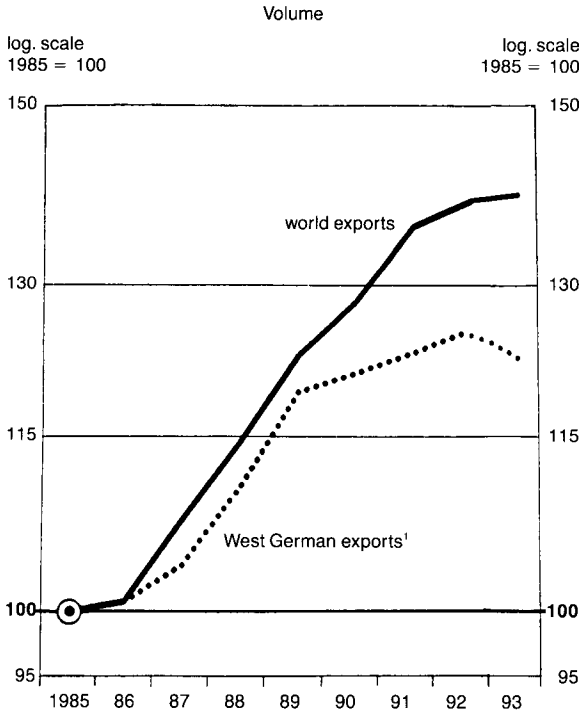
in competitiveness. The following analysis discusses some of the issues at the core of the question of whether Germany's international competitive position has really changed.[3]

Unfortunately, competitiveness and the attractiveness of a country to investors are not very easy to identify because there is no single indicator that shows how a country's competitive position has changed over time. Instead, a number of indicators have been proposed to measure competitiveness. In part, they aim at identifying the industries most seriously affected by such changes and the reasons for a change in competitiveness. Therefore, some of these indicators will be examined in more detail.

Export Market Shares

In evaluating the competitiveness of a country, the focus is often on exports. One possibility to evaluate the competitive position of the export sector is to look at the performance of export values, and not on export volumes as in Figure 1. The performance of export values relative to the rest of the world can be measured by a country's share in international export markets. The left graph of Figure 2 shows in the lower line that the overall value of German exports as a share of world exports has hardly changed since 1987. Given the smaller growth of export volumes indicated in Figure 1, this implies that prices of German exports have increased more than average prices of world exports. However, the same graph shows in the upper line that the share of German exports in OECD exports has gone down slightly. The graph on the right side of Figure 2 shows the same result for manufactured goods. This suggests some decline in international competitiveness over the past years.[4]

Figure 1
World Exports and West German Exports



[1] Without sales to East Germany.

Sources: Annual Report of the Council of Economic Experts 1993/94 and IMF, International Financial Statistics.

The indicators based on world market shares show a mixed picture until 1992. Due to the expected decline in German exports in 1993, there will be a clear decline in Germany's market share in 1993. However, a country's export share is a backward-looking indicator and thus does not tell much about likely future developments.

Real Exchange Rates

Changes in international price competitiveness are often examined by looking at various real exchange rate measures. The upper part of Table 1 shows unit labor costs of Germany and the other G-7 countries relative to the rest of the OECD countries. The data indicate an increase in Germany's relative unit labor costs between the end of the 1980s and 1993 of roughly 9 percent. Relative export prices of manufactures rose by about 6 percent over the same period.

While both changes could suggest a deterioration of Germany's competitive position, such an interpretation is not generally warranted. An increase in relative prices or costs could – under certain conditions – indicate an increased competitiveness of a country. This would be the case, if due to high demand for a country's goods, producers could increase prices and wage earners could succeed in pushing up wages. The relative price increase may also be triggered by an appreciation of the exporting country's currency.

In the case of Germany, it is therefore necessary to ask whether this opposite interpretation of a change in the real exchange rate is warranted. An answer can be derived from the current account development. If an increase in a country's relative prices or costs reflects an improvement

[3] In discussing competitiveness the focus is sometimes on domestic indicators like productivity and real wages. However, since this paper tries to look at likely future developments in German trade, we focus on international indicators.

[4] One caveat of this interpretation must not be overlooked. While world exports include exports to the new Länder in what was East Germany, German exports do not include East-West German trade before 1991 and trade between the new and the old Länder since 1991. German exports are thus somewhat underestimated by the shares shown in Figure 2.

in international competitiveness, one would normally expect a current account improvement. Germany's current account, however, worsened dramatically from annual surpluses of about $50 billion in the late 80s to annual deficits of $25-30 billion in the past two years. Thus, the data in Table 1 can indeed be interpreted as a recent deterioration of Germany's competitiveness.

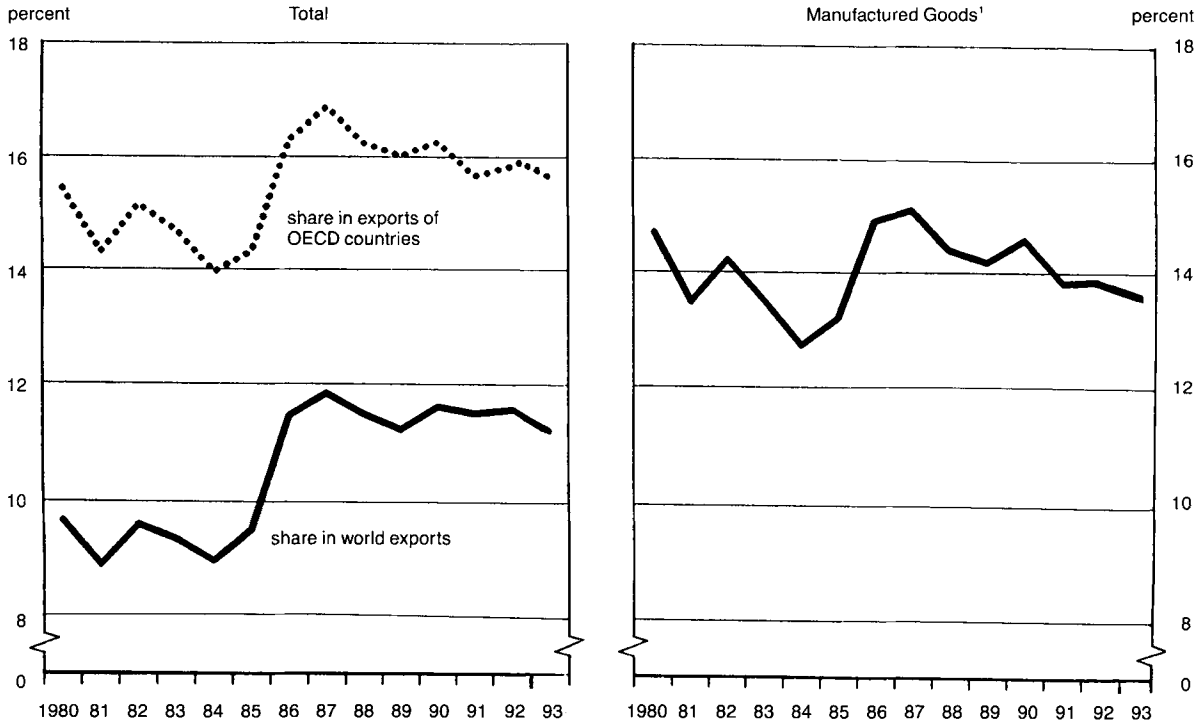
In fact, the real appreciation indicated by the data for Germany in Table 1 reflects a sharp appreciation of the Deutsch-Mark following German reunification. For example, between the end of 1991 and the end of 1993 it appreciated in nominal terms vis-à-vis other currencies of the European Community, i.e., Germany's main trading partners, by more than 10 percent. The appreciation was not the result of a strong German position in international goods markets but the consequence of the asymmetric shock in Europe caused by German reunification. In Germany, this shock led to a sharp increase in demand for capital and, combined with the rise in the fiscal deficit, to an upward pressure on interest rates.

In this context, it is interesting to compare the changes in price competitiveness of Germany with developments in the other G-7 countries. For the US the data show that price competitiveness has substantially improved which, according to OECD estimates, will continue in 1994. In addition, the data in Table 1 indicate that the competitive position has also improved according to both measures in Italy, the UK and Canada. For Japan, the data show a real appreciation of the Yen between 20 and 24 percent, depending on the measure used. Japan, however, is a case in which the real appreciation can be interpreted, at least to some extent, as a reflection of a strong competitive position. Japan's current account surplus increased from $36 billion in 1990 to about $140 billion in 1993. In sum, the data of Table 1 reveal that Germany's price competitiveness deteriorated in the early 1990s and that this is in contrast to most G-7 countries.

Representation in Dynamic Markets

The analysis now turns to some structural elements in Germany's international trade. It is sometimes argued that German exports are not sufficiently represented in relatively dynamic, i.e., fast growing, goods markets, for example in Asia or Latin America. This is indeed the case: for example, in 1992 German goods represented only 5 percent of total imports to Asia with an import share of only 3 percent in the newly industrialized countries of this region. Likewise, in Mexico and Brazil, goods from

Figure 2
Shares of West German Exports in World Exports



[1] SITC groups 5 through 8.

Sources: Annual Report of the Council of Economic Experts 1993/94 and IMF, International Financial Statistics.

Table 1
Measures of Relative Competitive Position

Country	Average 1988-90	1991	1992	1993
	(Indices, 1987 = 100)			
	I. Relative unit labour costs in manufacturing, in a common currency			
Germany	100	101	104	109
United States	90	85	80	79
Japan	90	87	97	112
France	92	90	92	97
Italy	103	102	100	88
United Kingdom	105	110	105	92
Canada	116	125	116	111
	II. Relative export prices of manufactures, in a common currency			
Germany	97	98	101	103
United States	95	93	90	90
Japan	99	103	110	119
France	98	97	97	97
Italy	103	109	108	100
United Kingdom	104	103	101	97
Canada	105	102	98	98

Source: OECD, Economic Outlook, June 1993.

Table 2
RCA Indices for Germany

SITC	Commodities	RCA Index 1989	1992
	Total SITC 5-8	21.7	16.7
525	Radioactive substances	33.9	3.9
531	Synthetical organic colours	–101.1	–120.2
591	Insecticides	90.7	74.5
689	Metals	–97.1	–71.7
718	Machines	120.7	90.0
724	Machines for the textile ind.	154.4	173.0
726	Printing house machines	162.1	139.3
735	Parts & fixings for machines	43.2	32.6
751	Office machines	–3.2	–22.6
752	Computers	–62.0	–84.8
759	Parts & fixings for computers	–70.4	–53.3
761	TVs	–110.8	–122.1
762	Radios	–107.3	–46.2
781	Cars	94.7	54.8
782	Trucks	101.1	30.4
791	Rail vehicles	165.6	127.9
792	Aircrafts	–36.6	–23.4
812	Sanitary installations, heating	11.2	–23.2
813	Lighting installations	8.6	–9.5
884	Optical products	5.2	–4.1

Source: Annual report of the Council of Economic Experts, 1993/94.

Table 3
Rates of Return on Capital in the Business Sector

Country	1989	1990	1991	1992	1993
	(in percent)				
Germany	13.7	14.3	13.7	13.5	12.7
United States	17.0	16.6	16.1	17.2	18.0
Japan	15.7	15.5	15.2	14.9	14.7

Source: OECD, Economic Outlook, June 1993.

Germany accounted for only 6 and 9 percent of total imports, respectively. Due to a relatively strong position in other markets in the past, especially in the European Community, the EFTA countries and Eastern European countries, German companies have made little effort to get into markets of more dynamic regions. With less growth in Germany's traditional export markets, this has turned into a disadvantage for German exports.

Revealed Comparative Advantage Analysis

To analyze more rigorously the structure of Germany's trade, a recent study of the Council of Economic Experts (Sachverständigenrat) applied the revealed comparative advantage (RCA) analysis to the German case.[5] The basic premise of this analysis is relatively simple: since trade patterns should reflect comparative advantages of countries, a country can be expected to export goods for which it has a comparative advantage and import goods for which it has a comparative disadvantage. This premise is the basis for the construction and interpretation of an RCA index or value. For a specific commodity group, the RCA index shows the ratio of exports to imports in this category relative to the ratio of total exports and imports of a country:

$$RCA_{it} = \ln\left(\frac{X_{it}/M_{it}}{X_t/M_t}\right) \cdot 100,$$

where X_{it}, M_{it}, X_t and M_t denote exports of products of commodity group i in year t, imports of products of commodity group i in year t, total exports in year t, and total imports in year t, respectively. Using logarithms in this context results in a positive value for categories with a higher export-import ratio than on average. In this case, this could be interpreted as a commodity group for which a country has a comparative advantage. Likewise, a negative value of the RCA index indicates a comparative disadvantage.

In the case of Germany, one would expect a positive value for commodities that are human capital intensive or have a high content of research and development. The overall picture of the analysis for Germany roughly confirms this for 1989 and 1992, which were the years examined. However, the analysis yields some very interesting results. Some of these results are shown in Table 2.[6] Three findings are particularly interesting:

☐ First, in several traditional export industries, the RCA

[5] See the annual report of the Council of Economic Experts ("Sachverständigenrat") 1993/1994, par. 196-200 and the explanations in Appendix IX, Section F.

[6] For the complete calculations see the report of the Council of Economic Experts ("Sachverständigenrat") 1993/1994.

index declined, e.g., in chemicals (SITC 591), machines (SITC 718) and cars (SITC 781).

☐ Second, in some industries a positive RCA index of 1989 turned into a negative index in 1992 (in Table 2 this applies to SITC 884).

☐ Third, there are high-tech industries in which Germany continued to lose competitiveness. This is reflected in negative indices that have further declined.

This applies, for example, to office machines (SITC 751) and computers (SITC 752). Although these indices need to be interpreted with some caution, they underscore both the facts that the comparative advantage of traditional German exports has declined and the disadvantage in some high-tech areas has increased.[7]

One interesting phenomenon should be pointed out in this context. A decline in the RCA index of a commodity group also occurs if production moves abroad through direct investment. This is, in particular, the case in industries in which development and production can be separated more easily (e.g., radios, TVs, cars).

Rates of Return on Capital

A very interesting indicator for the development in Germany's competitive position is the profitability of production compared to other industrial countries. The OECD regularly estimates the rates of return on capital in the business sector. As Table 3 shows, the rate of return increased in the US from 16.6 percent in 1990 to 18.0 percent in 1993. While there is a small decline in Japan over the same period, Germany exhibits a fairly substantial decline from 14.3 percent in 1990 to 12.7 percent in 1993. Production activities have thus become relatively less attractive in Germany, which could lead to a decline in net foreign direct investment in the future.

In the past 15 years, Germany's balance of foreign direct investment has traditionally been negative, amounting to net capital outflows of around DM 6 billion in 1980, DM 10 billion in 1985, and DM 28 billion in 1992.[8] In this context, it is also interesting that the cumulative foreign investment in Germany amounted to DM 53 billion in the 1980s, while it amounted to DM 67 billion in the UK and DM 318 billion in the US.[9]

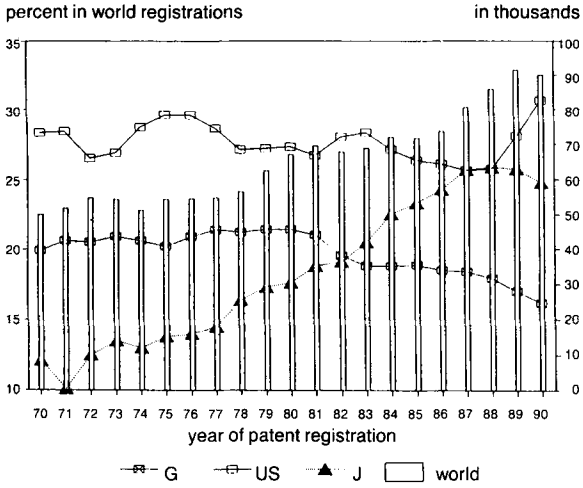
The data in Table 3 could be interpreted as a deterioration of Germany's international competitiveness. However, it should be noted that a comparison of rates of return requires some caution. Since the data refers to the

[7] The limitations of the RCA analysis stem from the fact that the RCA values depend on a number of factors other than comparative advantage. For example, commercial policy measures can affect the values through their influence on exports and imports. Other influences on the RCA values that are not related to comparative advantage include cyclical factors exerting different effects on the various commodity groups and intraindustry trade which is not only related to production costs.

[8] It should be noted that foreign direct investment depends on a number of factors, of which rates of return is one. Other factors include penetration into new markets and avoidance of information and negotiation costs that occur if, as an alternative to foreign direct investment, a foreign partner is chosen. If capital outflows related to foreign direct investment are a reflection of high export surpluses, like in Germany and Japan in the 1980s, a negative balance can be interpreted as a sign of a strong competitive position in international goods markets, since they reflect one form of accumulating foreign assets accompanying current account surpluses.

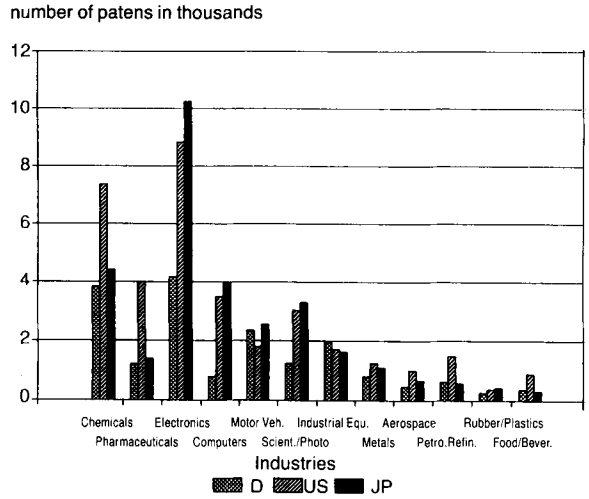
[9] The figure for Japan is DM 13 billion for the same period, but Japan may not be a good comparison due to the difficulties for foreign companies to get into the Japanese market.

Figure 3
New International Patent Registrations



Sources: EPIDOS/INPADOC; ifo Patentstatistik, estimates of the ifo Institute.

Figure 4
Patent Registration by Sectors of Origin in 1990



Sources: EPIDOS/INPADOC; ifo Patentstatistik, Company Report 1993.

aggregate capital stock, a more detailed analysis would have to differentiate by sectors. In addition, differences in tax burdens and regulations are not taken into account. Nevertheless, this would most likely not change the picture of Table 3 because both the tax burden and the extent of regulations are relatively high in Germany.

Innovations

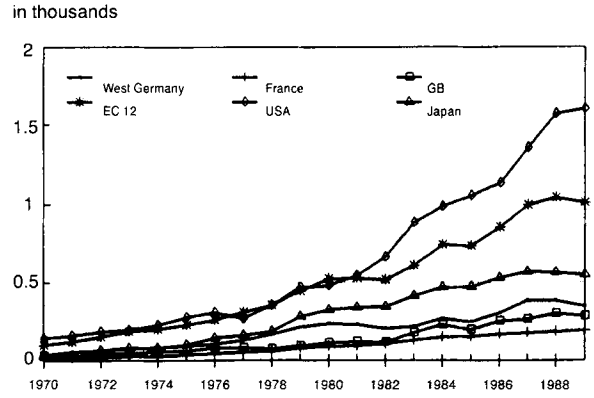
A more future-oriented indicator of a country's competitive position may be derived from an analysis of innovations. As an approximation of innovations, the number of new international patent registrations may be used.[10] Unfortunately, data on patents is only available with a considerable delay. The bars in Figure 3 show overall patent registrations between 1970 and 1990. The lines show the shares of the US, Japan, and Germany in total patents. The graph reveals that, very recently, innovations in the US increased substantially, raising the share of the US from 26% in 1988 to 31 percent in 1990. Japan shows some consolidation after a steady increase in its share over nearly two decades. By contrast, the share of Germany declined in the 80s with a clear acceleration of this decline during the last years of the period.[11]

It is interesting to also look at the structure of patent registrations by industries. Figure 4 shows a strong German position in motor vehicles and machines (i.e., industrial equipment), two of its traditional export industries. However, the diagram also reveals a less strong position in chemicals and electronics, the two other very strong German export industries in the past. Moreover, in some other high-tech areas like computers, Germany's position seems to be extremely weak.

A further breakdown of industries lends more insight into areas where Germany is relatively weak or strong. Among technologies that are considered to be rather dynamic, Germany is only strong in environmental products. In other areas, it looks as if Germany has missed the boat. As an example, Figure 5 presents the data on bio technology and gene technology patents. While US innovations clearly dominate this area, German innovations even declined in absolute terms.[12]

If innovations are a lead indicator of tomorrow's competitiveness, the analysis suggests that the outlook for Germany is relatively bleak. It is well known that, for both a company and a country, lags in adopting new technologies due to weak innovative forces imply high costs in terms of output, profits and employment foregone. The main argument the Koreans put forward in explaining their decision in 1993 to buy the fast train "TGV" from the

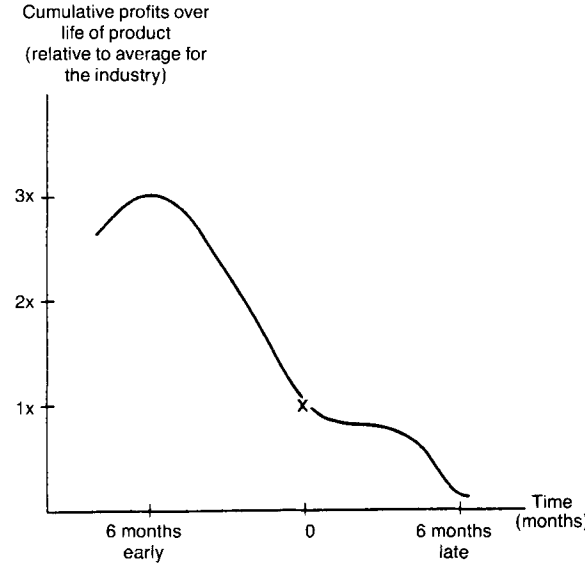
Figure 5
Bio Technology and Gene Technology
Innovations[1] by Countries of Origin



[1] With registration in at least 2 countries.

Sources: EPIDOS/INPADOC; ifo Patentstatistik.

Figure 6
The Impact of Market Introduction Timing on Cumulative Profits of a Major New Product



Time of Market Introduction Relative to Competitors

Source: S.C. Wheelwright and K.B. Clark: Revolutionizing Product Development, New York 1992.

[10] Another approximation frequently used for innovations are expenditures for research and technology. However, compared to patents, they imply the disadvantage of measuring input rather than output of search processes in the area of new technologies.

[11] For a more detailed discussion see K. Faust: Ifo Patentstatistik: Deutsche Unternehmen bleiben hinter ihren Konkurrenten aus den USA und Japan zurück, in: IFO Schnelldienst 31/1993, pp. 14-21.

[12] For details on innovations by different high technology products see W. Gerstenberger: Zur Wettbewerbsposition der deutschen Industrie im High-Tech-Bereich, in: IFO-Schnelldienst, 13/1992, pp. 14-23.

French instead of the German "Intercity" was that the French had 10 years more experience with the train and the technology was relatively new in Germany. The impact of market introduction timing at a company level was recently illustrated by Wheelwright and Clark, who show (see Figure 6) that introducing a major innovative product at the same time as competitors (0 on the horizontal axis) leads to average profits (1x on the vertical axis), while introducing the same product six months ahead of competitors can lead to triple profits (indicated by 3x on the vertical axis). Introducing an innovative product rather late can imply much lower profits than those realized by most competitors.[13]

The Overall Picture

It is sometimes argued that Germany's poor economic performance mainly reflects recessionary effects at home and abroad. Once the recession is over, there will be sufficient forces to bring Germany back to a satisfactory growth path with the necessary effects on production and employment. Proponents of this argument point to the factors that account for a favorite location for investors. Those factors include the high level of human capital, the good education and training system, the investment activities of subsidaries of foreign companies, and a good social climate with relatively few strikes.

The results of the above analysis suggest that it is unrealistic to ascribe the adverse developments exclusively to the recession. Rather, there are indications of a longer-term decline in Germany's competitive position. Due to structural factors, an end to the recession will not solve the problem of competitiveness and sluggish growth. Although part of the loss of competitiveness exhibited by some indicators are due to German reunification, there are at least two main structural problems in Germany's economy. First, there is the problem of decreased price competitiveness and profitability. Second, there is the problem of weakness of innovative forces.

Especially in comparison with the US and Japan, but also with some West European countries (e.g., France), Germany seems to have lost competitiveness. Some of the deterioration, however, cannot yet be seen in the data on actual trade performance but only in lead indicators. Therefore, it may well be that actual export performance will further worsen.

Causes of the Change in Competitiveness

This section briefly discusses the main reasons for the deterioration of Germany's competitive position. One of the main causes is related to the long economic upswing in West Germany in the 1980s and the reunification boom. These years of relatively high demand for German goods allowed German companies to comfortably stay in markets without pursuing continuous rigorous adjustment and innovation. This was different in other countries. For example, in the US the long recession put much more pressure on companies to restructure and search for innovations.[14] This now seems to bear fruit. In addition, the German reunification led to fiscal deficits which – as they appear to become persistent – may have negative effects on investment due to fears of additional burdens for production costs.[15]

The adjustment process is impeded in Germany by a number of rigidities and regulations in goods markets and in the labor market. Moreover, there is no consensus in Germany that wage increases in the past, as well as the negotiated automatism with which wages in the new *Länder* are increasing, are part of the problem of reduced price competitiveness. While the problem of international competitiveness certainly is not exclusively a wage problem, the wage factor, including vacation time and non-wage labor costs (e.g., social security), is nevertheless part of it.[16]

The opening of Eastern Europe is beginning to create new competitors for German industries. Wages in these countries are partly only 10 percent of the German level and, thus, given a productivity level that is considerably higher than 10 percent of Germany's level, also provide incentives for foreign direct investment that ultimately lead to a shift of production towards Eastern Europe.

One of the consequences of the lack of adjustment at the level of German companies is the widespread traditional emphasis on engineering. It now becomes

[13] Recently, Amendola, Dosi and Papagni also pointed to the importance of innovations for the pattern of international trade; see F. Amendola, G. Dosi and E. Papagni: The Dynamics of International Competitiveness, in: Weltwirtschaftliches Archiv, Vol. 129 (1993), pp. 45–171.

[14] One of the theoretical arguments made in the literature is that recessions can have beneficial effects on the productive structure of the economy because of the lower opportunity cost of "organizational" activities; see, for example, R. Hall: Recessions as Reorganizations, NBER Macro Annual Conference, March 1991, and R. Caballero and M. L. Hammour: The Cleansing Effect of Recessions, NBER Working Paper No. 3922, Cambridge, MA, 1992.

[15] For a brief survey of the economic effects of German unification see H. C. Sherman: The Economics of German Unification, in: B. Heitger and L. Waverman (eds.): German Unification and International Economy, London 1993, pp. [illegible] M. Kra[illegible] D. [illegible] and [illegible] ungen d[illegible] Wiedervereinigung auf die Standortqu[illegible] Ostdeutschlands, i[illegible] Wirtschaftsdienst 9/1992, pp. 464-471.

[16] This issue was also addressed by the White Paper "Growth, Competitiveness, Employment – The Challenges and Ways Forward into the 21st Century" of the Commission of the EC, issued in December 1993; chapter 9 discussed issued related to statutory charges on labor.

more and more obvious that products are often overengineered and the preferences of customers are neglected. A good example seems to be the luxury fleet of Mercedes, the so-called "S-Klasse", which overlooks that customers prefer, for example, cars with low gas consumption and of a manageable size. Many German companies have not yet included their customers enough in their strategies. Concepts like "Put the customer first" are still too little prevalent in German industries.

Another development related to the long upswing in economic activity in Germany is that German companies have only recently begun to implement lean production structures and more team work with more cooperation between employees working on the same product at different hierarchy levels. It seems that in Japan blue and white collar workers work much more hand in hand than in the typical German production environment. In addition, there seems to be a weakness in German companies to transform new concepts and scientific results into new processes and products.

Defensive vs. Offensive Strategy

On the basis of the result that there are indications of a longer-term decline in Germany's competitive position, there are two different approaches to respond to the decline in competitiveness. One is what has been labeled the "defensive strategy", the other is the "offensive strategy".[17]

The defensive strategy basically accepts the deterioration of competitiveness and the lower growth and fights the employment effects by redistributing total labor input required for the lower production level. The recently negotiated 4-day-week at Volkswagen is an example for this strategy. While this may be an optimal strategy at a company level in the short run, given the high short-term costs of laying-off people, there are some risks for both the company and the economy involved. First, it can induce disincentive effects given that the difference between a four-day week and unemployment is relatively small. Second, if this is used as a model in other companies, unit labor costs will increase since there is no full compensation in the Volkswagen model for the reduction in hours worked. Third, if the expected productivity increase is not achieved or demand is not up after the two-year period for which the Volkswagen deal is designed, Volkswagen may face the same problems as today. In fact, the incentive for the Volkswagen management to agree on a 4-day week resulted mainly from the fact that Volkswagen could not afford the enormous costs of a lay-off package and therefore preferred shifting the problem into the future. Again, if conditions do not improve during the following two years, then Volkswagen's intertemporal consideration will turn out to be a wrong decision. After all, this strategy by itself does not lead to the sale of any additional cars.

The offensive strategy aims at improving the conditions for growth. Since the government cannot create innovation, it can only optimize the conditions for innovations. The creation of new profitable jobs requires strong investment activity, which then increases labor productivity. In addition, further qualification of the labor force is another driving force of economic growth. Ultimately, this implies sound macroeconomic stabilization policies together with supply-side measures that make investment more attractive. These policies include a reduction of the tax burden on investment, promotion of research and development, further privatization and deregulation, and a reduction in subsidies which, in the past, have supported industries for which Germany had no comparative advantage (e.g., ships and coal mining) so that structural changes were hampered. At the same time, the necessity to reduce the budget deficit may require higher taxes on consumption. The required measures for achieving higher growth can only be successful if persistent distributional quarrels can be reduced and if the measures are accompanied by appropriate wage and labor market policies. These should include concepts that convert part of a fixed salary into profit-dependent equity. Such a model could avoid social tension and prevent wages from becoming totally out of line with economic developments.

This brief list of measures already demonstrates that there is an immense policy agenda. Given the numerous elections in Germany in 1994 (European, federal, state, and local elections), the prospects for adopting unpopular measures look rather bleak. However, the challenge is clear: if the trend of losing international competitiveness is not stopped, Germany may soon embark on a long decline in employment with distribution quarrels. Without sufficient growth, the required transfers to the new *Länder* will soon cause higher taxes, a failure of efforts to cut the fiscal deficit, and even lower investment. Moreover, the challenges may further increase when the new market economies in Eastern Europe become more serious competitors in international markets. This will completely change the scarcity of factors to the disadvantage of labor, putting substantial downward pressure on real wages not only in Germany. To find the optimal policy strategy in light of the described developments is likely to become the single most important economic challenge in Germany during the next decade.

[17] See Annual Report of the Council of Economic Experts ("Sachverständigenrat") 1993/1994, par. 207.