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REAL ADJUSTMENT IN THE TRANSFORMATION PROCESS:
RISK FACTORS IN EAST GERMANY

by

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Real Adjustment in the Transformation Process:
Risk Factors in East Germany

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East Germany can be considered as a laboratory experiment in the economics of transition. Of the three major issues of economic reform in the transformation process (Siebert 1991c), two were solved nearly instantaneously. Monetary stabilization was achieved by extending the currency area of the DM to East Germany in the currency union of July 1, 1990. And the institutional infrastructure was introduced with one stroke when East Germany joined West Germany according to Article 23 of the German constitution. Thus, only the third major area of reform remained to be solved, namely real adjustment in the economy, especially in the previously state owned firms. The transformation of the East German economy thus can be viewed to be a specific exercise in real economic adjustment.

In this paper I look at some of the risks that may arise from the transformation process in East Germany for German economic policy. Some factors which represented risks in 1990 no longer do because either a positive or a negative outcome has to be recorded (Section 1). The remaining risks relate to getting trapped on a low level of development in East Germany (Section 2), to privatization getting stuck (Section 3), to an explicit structural policy (Section 4), to a persistence of the second labor market (Section 5), and to transfers turning into a burden for Germany as a whole (Section 6). Some conclusions are drawn in Section 7.

1. Three Hindsight Risks

Two years ago, one major risk of German unification was the political mechanism by which the two Germanies would merge. More specifically, the debate on a revision of the constitution among independent states would have required one or two years; this would have been associated with high economic uncertainty negatively affecting public transfers into East Germany, reducing private capital flows, raising interest rates and depreciating the DM. This risk has not materialized due to East Germany accepting the German constitution which will now be revised under different conditions.

Another risk related to inflationary pressures due to the conversion rate chosen in extending the currency area of the DM to East Germany in the currency union. Judging from the inflation rate (for West Germany) of 2.7 percent in 1990 and 3.5 percent in 1991, one may come to the conclusion that the inflationary risk did not materialize. Looking more closely, this file cannot be closed yet. From May 1990[1] to May 1991, M-3 increased by 20 percent (Bundesbank, Monatsberichte). With the production of East Germany accounting for 6.7 percent of the West German level in the second half of 1991 (Sachverständigenrat 1991b, 60) and allowing for a normal increase in the money supply of 5 percent in West Germany, arithmetically, there was an excess supply of money amounting to 8 percent of the total money supply. Note that the interest rate structure was slightly positive in 1990.

The above calculation, however, is somewhat misleading because East Germans were not yet used to the portfolio choices typical for a market economy and money served as a substitute of non-monetary financial assets. Thus, money balances held by the non-banking sector do not necessarily represent a source of inflationary pressure. It is hard to say to what extent this portfolio

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[1] The figure for June 1990 was already affected by the currency union.

aspect completely compensates the arithmetical excess supply and whether the monetary coat of 1990 had oversize.

In any case, the Bundesbank followed a policy of mopping up some of the excess supply of money, reducing the rate of increase in the money supply in the first half of 1991. The interest rate structure became inverse in 1991 pointing to a restrictive monetary policy. Thus, the currency union had implications in 1991[2]. Moreover, if there is a time lag of one to two years until the increase in the money supply affects the price level (Scheide 1991), the price increase in 1991 and 1992 may be, in part, the result of the 1990 increase in the money supply. Last but not least, the change in the price level will affect wage increases in West Germany in 1992.

We also know more about the third risk factor of the year 1990, wage costs. From the second quarter of 1990 to the fourth quarter of 1991, the effective wage per employee in East Germany has risen by 64 percent. At the end of 1991, wage contracts for East Germany were concluded reaching 60-65 percent of the West German nominal level; the Sachverständigenrat expects that on average East German employees will reach 70 percent of the West German contract wage level in 1992. In April 1991, the effective wage income per employee was 47.1 percent of the West German level (Sachverständigenrat 1991b, III).

The wage increases in Eastern Germany have caused repercussions in a number of areas. They have made investment less profitable. While they will not greatly affect capital-intensive projects of West German or international firms investing in East Germany, they do have a negative impact on the birth of new and small firms which face uncertain revenue since they are not yet established in the market. Adjustment of the old state firms is made more difficult. Moreover, the demand for labour in the adjustment

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[2] The conversion rate affected the pressure for a wage increase and influenced the aspiration level of people in East Germany.

phase will be reduced thus leading to higher unemployment and a greater need for government programms and transfers. Moreover, the wage level influences social security payments. Thus, wage policy in East Germany directly affects fiscal policy.

2. Will the Potential Growth Process Become Trapped?

The most important question for the future is whether a self-sustained growth process will start in Eastern Germany. We know very well from the economics of transition (Siebert 1991a; Long and Siebert 1991) that the transition from a centralized social-ist planning system to a market economy presents a shock to the representative socialist firm changing all its contraints includ-ing the price vector. For the overwhelming number of firms, this shock can be modelled as a sudden unexpected drop in the produc-er's price. This implies that the capital stock of the firm or the firm itself as a net of contractual relationships becomes largely obsolete.

If we aggregate over all firms the capital stock of the economy becomes obsolete to a considerable degree. It has to be rebuilt through investment. Human capital in its given occupations is also partly made obsolete, although qualifications of East German workers are judged as being not too different from those of West Germans. By reallocation and retraining, human capital can adjust. The concept of obsoleteness can also be applied to infrastructure capital which has to be improved and restructured. Another stock variable that is made obsolete is the spatial structure of the economy. Last but not least, the capital of nature, the environment, which was polluted in the old system, will have to be restored.

For the adjustment process of the economy we obtain a J-curve of aggregate output in the transition to a market system falling abruptly and eventually catching up with the adjustment of firms going on and new firms coming into existence. Employment follows a u-curve with the initial level of over-employment not being reached again (Siebert 1992).

In 1991, the bottom of the valley in the J-curve of output has been reached in East Germany. Output of the manufacturing industry is at one-third of the 1989 level; GNP was 193,1 bill. DM in 1991, 6.9 percent of the West German level (whereas population is 25 percent).

A self-sustained growth process has not yet begun. Aggregate domestic demand of East Germany amounted to 361,2 bill. DM in 1991, i.e. 187 percent of GNP. The trade deficit was 168,1 bill. DM. Aggregate demand is financed by transfers which are estimated at 145 bill. DM for the government sector (Table 1).

Table 1 - GNP and Aggregate Demand in East Germany

Private Demand	196.3
Government Expenditure	90.2
Investment	72.4
Change in Inventories	2.4
Aggregate Domestic Demand	361.2
Trade Balance	-168.1
Exports	59.2
Imports	227.3
GNP	193.1

Source: Statistisches Bundesamt, Press Release, January 15, 1992.

Simple formula tell us how much time is needed for East Germany to catch up. Consider a situation where East Germany reaches 80 percent of the West German level of GNP per capita. This is not an unrealistic frame of reference since in West Germany some regions reach a similar percentage. Then everything depends on the difference in the real growth rates between East and West Germany. Table 2 shows the years needed for adjustment to 80 percent for various growth differentials.[3] Such calculations

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[3] Let Y_{91}^W and Y_{91}^E be the initial increase in East and West, let α be the level to be reached, let $\beta = 0.25$ indicate the size of the

should not be overestimated. It is quite conceivable that in specific years high growth rates in the 20 percent range occur in East Germany.

Table 2 - Time Needed for 80 % Equalization

Growth Differential	Years
10	10.6
15	7.06
17	6.2
20	5.3
25	4.2

Assuming that East Germany will have the same capital stock per capita as West Germany after the transformation process has ended, the capital stock of the enterprise sector should be 1214 bill. DM[4] (Table 3). This is a back-of-the-envelope calculation for the accumulated investment assuming that the existing capital stock is completely obsolete. Infrastructure capital in East Germany should amount to 530 bill. DM. Assuming that one-third of the capital stock is usable, and considering a ten-year period of adjustment, private investment of 80 bill. and public investment

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Forts. Fußnote
East German population relative to West Germany, and let r^W and r^E denote the growth rates, then

$$\alpha\beta Y^W_{91} (e^{r^W t}) = Y^E_{91} (e^{r^E t})$$

and thus

$$t = \frac{\ln(\frac{Y^E}{Y^W}) - \ln\alpha\beta}{r^W - r^E}$$

[4] The total West German capital stock was 10464 bill. DM in 1990, that of the enterprise sector 4785 bill DM.

of 40 bill. per year, i.e. 120 bill. DM per year, would be needed[5].

Table 3 - Capital Stock and Investment in East Germany and West Germany

	FRG	GDR	DDR capital stock after adjustment (a)
	1990	1988	
	DM bill.	M bill.	DM bill.
1. Gross domestic product			
Total	2404	346	
Enterprises (without housing)	1835	--	
Goods-producing sectors (mining, manufacturing, construction, electricity, gas and water)	942	200(b)	
2. Gross investment			
Total	522	95	
Enterprises (without housing)	337	68	
Goods-producing sectors	137	46	
Housing	123	12(c)	
3. Gross capital stock			
Total	10464(d)	1635(d)	2720
Enterprises (without housing)	4785(c,d)	1300(e)	1244
Goods-producing sectors	2072(c,d)	780(d)	539
Housing	4446(c,d)	--	--
4. Capital/output ratio			
Total	4.4	5.2	
Enterprises (without housing)	2.6	--	
Goods-producing sectors	2.2	3.9	

(a) Calculated as 26 percent of the West German capital stock in 1989. - (b) Including goods-producing crafts. - (c) New construction and modernization. - (d) Evaluated at replacement costs. - (e) Capital stock at 1986 prices.

Source: Statistisches Bundesamt [1990]; Staatliche Zentralverwaltung [1989]; own estimates.

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[5] Calculations for public investment do not include environmental protection.

Self-sustained growth can only start if the obsolete stock variables are newly built up. Investment in 1991 is estimated at 72.4 bill. DM which is 38 percent of the actual East German GNP, but is way too low relative to the potential GNP of 650 bill. DM that East Germany might have after the complete adjustment process. Investment per capita is half of the West German figure. More specifically, private investment, which amounts to 50 percent of the total, is too low. For 1992, investment of 90 bill DM is expected (Sachverständigenrat 1991b).

It would be tempting to apply the West German capital output ratio to determine the investment needed in order to reach a specific growth rate or to calculate the growth effect of a given investment. For instance, applying the West German average capital output ratio of 4.4 to the investment of 90 bill. DM expected in 1992, the increase in GNP will be 20 bill. DM. Private investment of 45 bill. DM would yield an increase in GNP of 17 bill. DM using the capital output ratio of the enterprise sector of 2.6. These calculations are misleading because we should expect an output effect of investment higher than the average capital output ratio in an economy where the capital stock is built up from scratch. Thus, it is more promising to apply the marginal capital output ratio which can be expected to be lower than the average ratio. In addition, the marginal capital output ratio of the late forties and the early fifties is an indication of the output effects that are possible under the most favorable circumstances.

Measuring the marginal output capital ratio by the increase in GNP to the increase in the gross capital stock, the marginal output capital ratio shows a great variation since 1950. Whereas in the late eighties it showed values around 0.45, the early fifties have seen values larger than 1 (Table A5). This would indicate a situation in which investment would increase GNP by the same amount.

The East German experience reminds us that a supply response needs time as was demonstrated by the two oil shocks. The Erhard reforms of 1948 cannot be used as a frame of reference for a

quick take-off since prior to 1948 adjustment had already taken
place to some extent. Industrial output rose from one-quarter of
the 1936 level in 1945 to roughly half of the 1936 level in 1948
(Schmieding 1991). Moreover, in East Germany special conditions
for the depreciation of the stock variables prevailed. The
exchange rate could not be used as a buffer; wage increases are
not in line with productivity.

In the long run, East Germany has a positive growth perspective
due to the incentives of the market system, due to capital
accumulation which will be associated with a high growth rate and
due to the integration in the international division of labor
(Siebert 1991b).

A major issue, however, is to what extent bottlenecks in East
Germany hinder investment and prevent the growth process from
starting and gaining momentum. These factors are the uncertainty
with respect to property rights, a shortage of location space, an
administration that had (and still has) to be built up and an
insufficient infrastructure in communication and transportation.

Over time, the factors limiting growth will become less impor-
tant. This can be expected for the administration. A quick
improvement in the infrastructure hinges on a number of issues.
First, government planning tends to be slow, especially when it
involves several layers of government. Moreover, budgetary
processes are time-consuming. Here privatization of parts of the
infrastructure can help in bringing about an improved supply of
infrastructure more quickly and more efficiently. German economic
policy has not been daring and innovative enough to introduce the
privatization of some parts of infrastructure, for instance in
the telecommunication area. Second, larger infrastructure pro-
jects in West Germany such as main highways or new railroad
tracks require up to twenty years from the start of planning to
completion. This is mainly due to the institutional set-up of the
authorization procedure including the procedural steps, especial-
ly in the administrative court systems. The clash of interest
between the growth target and environmental protection is at the
root of the problem. It is quite clear that with time horizons of

this length the infrastructure in East Germany cannot be built up quickly. It will have to be seen whether a law attempting to reduce the requirements for the authorization procedure will be successful.

3. Will Privatization Get Stuck?

Property rights uncertainty is estimated to be the most important bottleneck to a self-sustained growth process. Three different categories of property are involved: land including buildings (not firms) where the previous owners have a right to be reinstituted, those firms which will be given back to their previous owners, and state-owned firms where new ownership has to be established. The systematic problem is that ownership of land and ownership of firms are disjunct and that the assignment of property titles, the mapping of objects and owners, may be inconsistent.

There are 1,2 million applications for reinstitution into the ownership of land. Each of these applications has to be decided administratively with title records not being up to date and with inheritance relationships being rather complex. Moreover, each administrative decision can be challenged in the administrative court system. It is estimated by experts that it will take ten years to clarify these ownership claims.

Reprivatization of firms relates to 17.000 cases with roughly 4,000 having been given back by September 1991. The most important issue is the privatization of previously state owned firms. The small privatization programme, i.e. the privatization of stores, small hotels etc. is completed. Until December 31, 1991, Treuhand has privatized 5210 firms of the productive sector out of 10537, i.e. 49.4 percent (Table A2). According to the sales contracts, employment of 930,000 and investment of 84 bill DM is expected. Treuhand still has 1.65 million employees after starting out with 4.08 million. Unfortunately, we have no information on the type and structure of firms that still have to be privatized.

Whenever the principle of reinstituting the previous owner and privatization are in conflict, a new law attempts to give preference to investment and employment (Vermögensgesetz). This law may have some positive effect but it does not appear to change the situation fun damentally. Its main impact is to somewhat affect the bargaining position of the previous owner relative to the investor and Treuhand. As a matter of fact one solution to property rights uncertainty is a contractual arrangement by these three parties where still existing risks are allocated between them. For instance Treuhand may cover a potential investor against the risk of possibly having to give back parts of his firm to a previous owner (who may not be known today). These contractual arrangements have to be developed on a case-by-case basis. The other solution to property rights uncertainty is for an investor to circumvent land or firms loaded with uncertainty by constructing houses or establishing new firms on the green meadow.

There remains a sizeable task of privatization. The risk now is that the privatization of firms will get more difficult. The filet mignons have been privatized, and less attractive firms remain. In the market of privatization, the demand for firms to be sold may be lower. At the same time, more firms will have to be closed. By December 1991, Treuhand had only closed 900 firms. The closing of firms will lead to political pressure in the regions affected. But there is also the political demand that firms which cannot be privatized should remain in government ownership so that Treuhand would develop into a government trust. It can be expected that Treuhand will then generate deficits that will be a severe burden for German fiscal policy. In 1991, Treuhand had a deficit of 20 bill. DM; in addition, it guaranteed banks credits to firms worth 30 bill. DM. It is expected that a large part of these credit guarantees will become effective.

In order to avoid these developments and in order to avoid the risks associated with them, the following measures are recommended (compare Sachverständigenrat 1991b).

- In the privatization of firms, Treuhand should attempt to mimick the market for firms as closely as possible. Treuhand has used an informal bargaining approach which has severe shortcomings because it is discretionary and because it allows strategic behavior of the buyer. Treuhand claims that the sale situation is complex and cannot easily be standardized. Moreover, multiple criteria including the sales price, investment and employment guarantees and the reputation of the buyer supposedly do not allow a formal sales procedure. Instead of informal bargaining, Treuhand should use a two-stage bidding process in which in the first round it collects all the relevant information on the buyer's willingness to pay, to invest and to employ. In the second round a contract specifying investment and employment plans could be auctioned off with the sales price being the only variable. In many cases, reputational constraints can be introduced in the first round.

- Treuhand should reorganize itself with the core activity of privatization having its own budget.

- The core activity of privatization should be discontinued on December 31, 1994. Firms for which an investor has not been found until then must be closed. Only in rare cases can they be handed over to the respective states. It should be made explicit, however, that federal funds are not available for those firms owned by the Länder. Subsidies to these firms must compete directly with other expenditures of the Länder.

4. An Explicit Structural Policy?

The breakdown of the East German economy has led to the political demand for an explicit structural policy for East Germany. The main argument is to soften the adjustment process for firms in order to reduce the negative impact on employment.

- Such a policy would perpetuate the inefficiency of the planning system because it would de facto be oriented towards the old structures. The option to modernize East Germany would be

lost. East Germany would remain a problem area for many years to come.

- The inefficient firms would have to be subsidized heavily. Being determined in the political process subsidies will become locked in, and it will be extremely difficult to reduce them in the future. Moreover, managers and entrepreneurs will be engaged in rent seeking instead of fulfilling their role of innovating and implementing new allocations of factors of production.

- Subsidized old firms get in the way of new firms. They block location space that is needed for the creation of new firms. This is especially relevant when location space is in short supply due to property rights uncertainty. We also know from West German sectoral policy that subsidized firms tend to set the wage rate of a region. Subsidies allow them to pay a high wage which impedes the new firms. Last but not least, subsidized firms often compete with new firms on the product markets.

The solution to such a conservationist policy is to uncouple the protection of people and the conservation of inefficient firms. Transfers to people will ease the burden of adjustment. Basically this approach is followed in the German case with transfers to those on short-time work and active forms of employment policies (among them so-called employment companies) relating to 400 000 persons at the end of 1991. In 1991 18.5 bill. DM were spent on active employment policies excluding 7.8 bill. DM for unemployment benefits.

There is not only a political demand for structural policy for the existing firms, but also an additional pressure for a more active role of government in developing future industries. It is argued that the government should decide which sectors should be developed and which industries should be targeted for the future. This approach is very likely to be a severe failure. First, the government does not have information on which products, which production procedure and which industry will flourish in the

future. The root of the issue is the Hayekian problem of informa-
tion on future economic and technological possibilities. This
information is not available today and revealing this information
very much depends on the incentive mechanism that is used.
Industrial targeting will forego competition as an exploratory
device (Hayek 1968); by not allocating the risks of failure to
the investor it sets the wrong incentives.

If decisions on the future sectoral structure are politicized, it
also can be expected that the controlling mechanism of markets
will be put to the background. Consider the case that the polit-
ical process has taken a decision and that this decision turns
out to be an economic failure; then it is very likely that the
political process will attempt to cover up its previous decision
and legitimize it ex-post by granting new subsidies. Thus, there
is an endogenous process potentially leading to inefficiency.

Both a conservationist structural policy and industrial targeting
will have strong implications for fiscal policy. Since the
existing firms are inefficient, the financial means needed would
be immense and subsidies would have to be provided for a longer
period. They would trickle away without making the East German
industry more competitive. The sums required would dominate
German fiscal policy for the next years and the necessary consol-
idation of the budget would be made much more difficult. Here is
a severe risk for German economic policy.

Related to the problem of structural policy is the issue whether
East Germany will be characterized by spatial hysteresis. In such
a scenario the given spatial structure would not change very
much. Is such a scenario likely?

Some areas in East Germany will have an economic position more in
the centre. Berlin has the chance to be a strong growth pole due
to its role as the capital of Germany. Areas with a favorable
position in the hierarchy of infrastructure and with policy
induced centres of administration like the capitals of the new
federal states are also likely to develop into growth poles. The
former border regions will be more intensively integrated into

West Germany and this interaction will improve their economic conditions. We can also expect, that areas with skilled labor and engineering talents will develop favorably, among them Sachsen and Thüringen which were the birth places of German engineering.

Restructuring will be much more difficult in old industrial areas with a heavy concentration of inefficient firms. Due to the extreme specialization of firms in East Germany these industrial areas will often have a monostructure in which one industry dominates (shipbuilding on the Baltic Sea, steel industry in Eisenhüttenstadt, textiles in Sachsen, chemistry in Bitterfeld). Where ecological damages of the past are concentrated they impede restructuring (Bitterfeld). Rural areas in the northern part of East Germany represent another aspect of monostructure. Finally, regions adjoining Poland and Czechoslovakia will become relatively more peripheral.

In these problem areas spatial hysteresis cannot be ruled out completely. The outcome will depend on whether Treuhand will succeed in privatizing firms in the problem regions and on whether structural policy will perpetuate the existing inefficient structures.

5. Will the Second Labor Market Persist?

Wages are expected to reach an average of 70 percent of the West German wage level in mid-1992. Although it seems to be unlikely that the equalization of wages can be postponed for long, policy must attempt to delay the adjustment. The best option would be to have a strong wage differentiation with respect to regions, sectors and firms. For instance, contract wages could rise at some base rate; markets could differentiate the wage rate. This can only be brought about if some elements of German labor market regulation, such as declaring labor contracts as mandatory, are temporarily not applied. The least one can attempt is a consensus of politics, business and trade unions to delay the adjustment of wages.

In East Germany, a second labor market has been established with an artificial, government-sponsored demand for labor. Policy instruments used are transfers to short-time workers amounting to roughly 90 percent of the previous salary up to June 1991. Retraining of people including retraining in "employment companies" is another policy measure. At the end of 1991, 400,000 people were covered by retraining activities. In addition, 360,000 people were in a public work program. The government-sponsored activities of the second labor market, for instance "employment companies", compete with the regular sector of the economy; they compete in the goods markets because they produce commodities that could be produced by private firms. And they compete in the labor market because they nearly pay the same wage as the regular sector. Thus, the incentive to move out of the second labor market is small.

The emergence of the second labor market is the result of uncoupling the protection of people from subsidizing old firms. In order to prevent the risk of wasting resources in conserving the inefficient old firms, a new risk arises. For instance, an organizational structure of employment companies is being established with a three level structure of an employment company on the level of each Land, in each labor office district and on a more local level. These organizational structures will have their own political weight, and it may be difficult to undo them when the economic situation improves.

One policy instrument, the very generous short-time work arrangement specifically designed for East Germany[6] affecting two million people at its climax in April 1991, was discontinued at the end of 1991. With respect to this policy instrument, the second labor market was not perpetuated.

The risks arising from wage policy and from a second labor market can only be understood in the context of the institutional

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[6] § 63, 5 Arbeitsförderungsgesetz Ost; now § 63, 4 applies.

arrangement of the labor market in Germany. Employment relations with governmental employment companies are interpreted as regular labor contracts; consequently, it is argued that the second labor market cannot have a wage different from the first labor market. Wage contracts are declared mandatory by the government, thus applying to non-union workers as well. As a consequence, a differentiation of wages between regions and firms is not possible. So far, it is nearly impossible that firms in trouble have a firm-specific contract. Another important feature of the German labor law is that the new owner of the firm inherits the old wage contracts and takes over people actually employed according to Article 613a of the German Civil Code. The new owner cannot lay off employees and has to pay the same wage. Definitely, this is not an incentive to acquire state-owned firms. Even if the new owner leaves the employer's association, he is bound by the wage contracts bargained by his predecessors, i.e. the managers of the old planning system. It has not been possible to suspend Article 613a of the German Civil Code.[7]

The influence of the German labor market regulation on the privatization and the restructuring of firms in East Germany points to the more general question of how the adjustment of East Germany is negatively affected by the institutional arrangement that has developed in West Germany. Rules that may be fitting for a relatively rich economy with a rather continuous growth process and slow structural adjustment to the world economy are not necessarily applicable to an economy in transition (Sachverständigenrat 1991b). This relates not only to the labor market, but also to the political and judicial process of providing infrastructure, to regulations in the transportation and telecommunication sectors, to the institutional arrangement of the energy sector as well as to other areas. Another important impact of the institutional arrangement of the West German economy is that in principle these rules define the protection level of people, i.e.

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[7] Article 613a has been suspended temporarily in the case of bankruptcy.

unemployment compensation, social welfare payments, etc. Thus, these institutional arrangements define something like the social minimal income or the reservation wage. Definitely, they have influenced the transfers to East Germany.

6. The Fiscal Policy Risk

All the risks discussed so far will have an impact on fiscal policy. Public transfers to East Germany are estimated at 145 bill. DM for 1992 with gross transfers amounting to 225 bill. DM. The breakdown is given in Table 4.

The overall German government budget deficit including the federal, state and municipal level as well as the social security system amounted to 130 bill. DM in 1991; this is 4.6 percent of GNP (Table 5). The 1992 overall governmental budget deficit is expected to be 160 bill DM, that is 5.4 percent of GNP. These data include the deficit of the German Unity Fund and of Treuhand estimated at 31 bill. DM for 1992 (Table 5). If the governmental telecommunication service and the railroads are included, the public sector capital demand will amount to roughly 180 bill. DM in 1992.

Budget risks relate to several factors (Table 6). One is the deficit of Treuhand which may increase if Treuhand does not succeed in privatizing firms. In 1991, a deficit of 20 bill. was recorded. Including the deficit of 1990, the debt of Treuhand was 25 bill. DM at the end of 1991. In addition, Treuhand has guaranteed loans for 30 bill.; a large part of these guarantees will become effective. Old debt of firms that are to be or already have been privatized will be taken over by Treuhand; this debt amounts to 70 bill. DM. In addition, compensating claims of firms "for losses due to currency conversion" of 20 bill. DM have to be added. This position is entered on the asset side of the firms. Taking environmental liabilities of 45 bill. DM into account, it is estimated that Treuhand may accumulate a debt of 250 bill. DM up to 1994.

Another risk is the financing of labor market policies. The
social security system will realize a deficit of 10 bill. DM in
1992 mainly because of additional labor market policy measures
and because of additional benefits for the elderly in East
Germany; the contributions to the social security system will
have to be notably raised in the first half of the nineties in
order to avoid budget deficits. This will have a negative impact
on the demand for labor and on economic activity in general.

At the end of 1993, the Credit Processing Fund, managing the
liabilities of the former GDR state (Kreditabwicklungsfonds),
will have to be taken over by Treuhand; if Treuhand has not
accumulated assets as can be expected, the Credit Processing Fund

Table 4 - Public Transfers to East Germany in 1992 (bill. DM)

	Federal	States and Municipalities	German Unit Fund	European Community[a]	Social Security System	Total Transfers
Additional Public Expenditure due to Unification	106	10	34	13	62	225
Additional Governmental Income due to Unification	40	-	10	3	12	65
Reduction of Subsidies due to Separation[b]	12	3	-	-	-	15
Net transfers	54	7	24	10	50	145

[a] including European Recovery Programme

[b] plus additional revenue because of higher GNP growth

Source: Sachverständigenrat (1991/92), Table 46

has to be taken over half and half by the federal state and by
the new Länder. It is estimated by the Ministry of Finance that a
debt of 100 bill. DM will have been accumulated by the fund. The
German Unity Fund shared by the federal government and the Länder
will have accumulated 95 bill. DM at the end of 1994. The mora-

torium on mortgages for the housing sector relating to a debt of 50 bill. DM will stop in 1993.

But there are other risks as well. One is defaults of East European debts, especially the former Soviet Union debt, and a non-payment of export credits. In both cases the government will be involved because debt and export credits were guaranteed by the government. In addition, transfers may be needed for Eastern Europe. This may become relevant when migration from Eastern Europe picks up. Last but not least contributions to the European Community are likely to increase, for instance due to the distributive policies in preparation of the European Monetary Union.

Table 5 - Budget Surplus/Deficit of the Public Sector (bill. DM)

	1991	1992
Federal	-52	-41
States	-21	-28
Municipalities	-11	-16
ERP	- 7	- 7
Treuhand	-20	-31
Credit Processing Fund	0	- 3
Social Security System	12	-10
German Unity Fund	-31	-24
	-130	-160

Table 6 - Financial Burden to the Public Sector[a] from Shadow Budgets and from Potential Expenditure after 1992 (bill. DM)

	Per Year	Specific Year (end of year)
Treuhand	30	1994: 250
Labor Market Policies	3	
Credit Transformation Fund		1993: 100
German Unity Fund		1994: 95
End of Moratorium on Mortgages		1993: 50
Eastern Europe - Default in Debt - Non-payment of Export Credits - Transfers	3 2 5	
Increased Contributions to the European Community	5	

[a] (Federal, state and municipal budget)

The risk for the future is that the budget deficit will have a strong impact on economic policy. The government may lose its space of manoeuvring due to high interest payments. Unexpected expenditures may arise. Government revenue may fall with a less favorable business cycle. Financing expenditures may raise either interest rates or taxes and this will choke off investment. The most important danger is that the financial constraints will develop into a severe burden for the West German economy which has to finance transfers to East Germany. This could trigger a vicious circle in which the problems of the East eventually influence the efficiency of the West.

In order to reduce this risk a consolidation strategy is required (Sachverständigenrat 1991b). The principle task must be to reduce the government budget and to bring down the ratio of budget deficit to GNP. This must be done by cutting expenditures. The politically easiest way to do this is to cap the nominal increase of government expenditures. Whereas the federal government attempts to keep the nominal increase of expenditures below 3 percent,

there is no mechanism available by which the Länder and the muni-
cipalities of West Germany can be forced to reduce their spend-
ing. Instead of limiting the increase of expenditures, it would
be more appropriate to cut expenditures including subsidies and
to restructure expenditures under the new economic environment of
a united Germany. In many areas, West Germany and East Germany
compete for investible funds. This holds, of course, for infra-
structure projects in West Germany which may be postponed for a
year or two; it applies to subsidies for specific West German
sectors such as the coal industry competing directly with the
brown coal of East Germany and it holds for subsidies in regional
policy going to regions in West Germany that are better off than
areas in East Germany. So far, the political process has not had
enough vigour to restructure governmental expenditures. The Ger-
man public has not yet understood that the unification of Germany
has changed some conditions that were basic to West German poli-
cies and that now no longer prevail.

Privatizing infrastructure is an interesting option to reduce
governmental expenditure; in East Germany, it would have the ad-
ditional advantage of providing infrastructure much more quickly.
The communication industry could have been privatized, financing
itself through user charges. Unfortunately, this policy has not
been followed. Privatization still is an option in the transpor-
tation sector, for instance with respect to airports and other
areas of transportation such as major roads or railroad connec-
tions; privatization can also be used for industrial parks and
local environmental projects like water purification plants. In
these cases, the government would only have to set the frame of
reference under which private projects can be undertaken.

An important issue for the future is the division of tasks among
the federal government, the states and the municipalities with
respect to public expenditure and revenue. In the long run, a new
system of intergovernmental transfers (Finanzausgleich) will have
to be developed for Germany with new rules for allocating govern-
ment income and expenditure to the three layers of government. In
the actual system, the states only have a minor authority in de-
termining their revenue. More autonomy on the revenue side, and

consequently on the expenditure side, could be introduced, for instance with a state-specific income tax rule. This would bring about a process of institututional competition among states both on the expenditure and the revenue side. In the very long run, such an approach may go together with a redefinition of states so that they are viable.

7. Conclusions

The risks studied in this paper relate to the problems arising from transforming East Germany into a market economy. Of course, this is not the complete set of risks for German economic policy. Other economic risks may be a degradation in competitiveness due to internal problems such as a high wage policy. A major issue is what will happen in Eastern Europe. If reforms in the former Soviet Union do not succeed, there is the risk of mass migration and of the political instability of the former Soviet Union spilling over to Western Europe. If reforms succeed, there is the chance of a bright future.

Reviewing the risk factors of German economic policy analysed in this paper, the policy approach must be to reduce these risks by the appropriate policy measures. In the sense of a causal therapy, preference must be given to stimulating the renewal of the stock variables that were made obsolete in the transition to a market economy. Thus, the goal must be to bring about private investment, to reduce the relevance of bottle-necks hindering the self-sustained growth process, to continue the privatization process and to abstain from structural policy. The second labor market must be scaled down over time, and, of course, a delay of the equalization in wages between East and West Germany would be most helpful in bringing about increased economic activity in East Germany. With respect to fiscal policy, a budget situation that will become uncontrollable must be prevented.

Two opposite scenarios for the united Germany were drawn very early in the discussion (Siebert 1990): the Mezzogiornio and the New Frontier. In the worst case, existing inefficient firms are subsidized in order to protect people. The inefficiency of the

East German economy carries on and a chance to modernize it is squandered. Then, a severe drain on Germany's resources would affect the manoeuvring space of fiscal policy in the future. In the alternative scenario the positive effects of German unification prevail after the bottle-necks have been overcome. Unification represents a New Frontier, an investment opportunity or in Schumpeter's (1934) terms a case of "creative destruction". Integration gains, the new economic system and capital accumulation will all play their role. I personally believe that this will be the relevant scenario for the future. Barring serious political mistakes, the economic integration of the two Germanies will be a growth stimulus for both Germanies, for Europe and for the world economy.

APPENDIX

Table A1: Adjustment in Transition, Data for Eastern Germany (a)

	GDP	Indus-trial Output	Total employed	Self-employed, unpaid family workers	Employees	Net emigra-tion	Com-muters	Short-time workers	Regis-tered unem-ployed	New firms	Consumer price index
	(c)		(d)	(d)	(d)	(f)				(g)	
	bn. DM	1990Q3 = 100	000	000	000	000	000	000	000	Number	1989=100
7/90		109.1						656	272	33,542	98.0
8/90	50.21	98.7	8,762	362	8,400	- 52	101	1,500	361	27,866	97.8
9/90		93.8						1,729	445	26,127	99.0
10/90		93.6						1,704	537	25,204	100.6
11/90	48.19	97.3	8,221	418	7,789	- 81	170	1,710	589	22,992	100.8
12/90		84.1						1,794	642	22,073	101.9
1/91		65.6						1,841	757	18,673	108.9
2/91	39.00	61.1	7,922	440	7,369	- 82	272	1,947	787	18,661	109.7
3/91		65.3						1,990	808	17,688	111.4
4/91		57.9						2,019	837	21,625	112.6
5/91	37.44	61.0	7,631	460	7,049	- 58	286	1,968	842	17,140	113.4
6/91		63.2						1,899	843	15,445	114.1
7/91		62.6						1,611	1,069	14,930	115.1
8/91	38.65	60.6	7,504	480	6,684	- 36	336	1,449	1,063	12,086	115.2
9/91		66.0						1,333	1,029	10,756	115.4
10/91		68.9						1,200	1,049	.	126.9
11/91	38.70	.	7,309	500	6,366	- 31	386	1,103	1,031	.	127.6
12/91		.						1,035	1,038	.	.
1/92								520	1,343		

Source: Statistisches Bundesamt (1992), Deutsches Institut für Wirtschaftsforschung (1992); Sachverständigenrat zur Begutachtung der gesamtwirtschaftlichen Entwicklung (1991).

Notes: (a) Including East Berlin; (b) Monthly resp. quarterly averages; not seasonally adjusted; (c) Prices of 2nd half year 1990; (d) Including commuters; (f) Changes against previous quarter; (g) Net registrations.

Table A2: Privatization of Firms (December 1991)

State	Privatized Firms			Privatized Revenue		Employment "Guarantees"		Investment Guarantees		Total Number of Treuhand Firms[2]	
	Number	% of firms privatized so far	Ratio[1]	bill DM	% of total revenue	Number of Employees	% of total employees	bill DM	% of total investment	Number	% of total number of firms
Mecklenburg-Vorpommern	798	15.3	66.4	1.1	5.6	72 213	7.8	4.2	5.0	1 201	11.4
Brandenburg	795	15.3	56.7	2.9	14.9	203 366	21.9	20.6	24.5	1 401	13.3
Sachsen-Anhalt	942	18.1	57.8	2.1	10.8	111 422	12.0	10.4	12.4	1 631	15.5
Thüringen	896	17.2	48.8	1.5	7.7	110 777	11.9	6.4	7.6	1 836	17.4
Sachsen	1 452	27.9	42.3	5.7	29.2	257 432	27.7	26.3	31.3	3 429	32.5
Berlin (East)	327	6.3	35.0	6.0	30.8	167 086	18.0	12.1	14.4	933	8.9
No category	--	--	--	0.2	1.0	7 866	0.8	4.0	4.8	106	1.0
Total	5 210	100.0	49.4	19.5	100.0	930 162	100.0	84.0	100.0	10 537	100.0

[1]Privatized firms as a percent of all Treuhand firms.

[2]As of September 4, 1991.

Source: Treuhandanstalt

Table A3: GNP and GDP of Eastern(a) and Western Germany, 1991

	Eastern Germany		Western Germany	
	bill. DM	percent	bill. DM	percent
Gross National Product	193.1	100.0	2 613.8	100.0
Private Consumption	196.3	101.6	1 378.7	52.7
Government Consumption	90.2	46.7	470.1	18.0
Machinery and Equipment	36.0	18.6	264.8	10.1
Construction	36.4	18.9	306.0	11.7
Exports	59.2	30.7	1 005.8	38.5
Imports	227.3	117.7	814.2	31.2
Gross Domestic Product	183.0	---	2 596.3	---
Gross Value Added	197.8	100.0	2 493.6	100.0
Agriculture, Forestry and Fishing	3.3	1.7	32.2	1.3
Manufacturing, Engery, Mining and Construction	67.5	34.1	999.6	40.0
Trade, Transportation and Communication	33.1	16.7	356.3	14.2
Services	47.0	23.8	769.2	30.8
Government, Private Households and Non-profit Organisations	46.8	23.6	336.4	13.5

(a) Including East Berlin.
(b) At current prices.

Source: Statistisches Bundesamt 1992.
References: Statistisches Bundesamt 1991; Fachserie 18, Volkswirtschaftliche Gesamtrechnungen, Reihe 1.1, Konten und Standardtabellen S. 38.

Table A4: Average monthly wage per employee in East Germany (a)

	Total Economy (b) (f)		Mining and Manufac- turing (c)	Construc- tion (c)	Trade (c)	Note: Western Germany Total Economy (b) (f)
	DM per month	Rate of Change				
1989						
I quarter	1.271	.	.	.	.	2.968
II	1.118	.	.	.	.	3.108
III	1.125	.	.	.	.	3.135
IV	1.176	.	.	.	.	3.557
1990						
I quarter	1.400 (d)	10.1	1.090	1.431	1.276	3.081
II	1.409 (d)	26.0	1.235	1.437	1.281	3.202
III	1.269	12.8	1.362	1.702	1.345	3.437
IV	1.411	20.0	1.591	1.933	1.503	3.961
1991						
I quarter	) 1.573	) 12.0	1.612	2.034	1.589	3.319
II	)	)	1.801	2.454	1.672	3.602
III	) 2.133	) 59.0	1.898	2.740	1.927	3.663
IV	)	)	2.006	2.898	1.988	4.238

Source: Statistisches Bundesamt (1991b), Deutsches Institut für Wirtschaftsforschung, Berlin (1992)

Notes: (a) 1989 in East Marks, and in DM since the third quarter of 1990. Data for the economy and the sectors are not fully comparable; (b) Wage sum per employee (excluding short-time workers); (c) Standard wage rate; (d) Including special payments due to the discontinua- tion of funds and reserves prior to the currency conversion; (e) Percentage change against corresponding quarter of the previous year; (f) Data not seasonally adjusted.

Table A5: Gross Capital Stock of West Germany

Year	Gross Capital Stock	Capital Stock of the Housing Sector	Difference	GNP	Marginal Output Capital Ratio[a]
1950	1704	694	1010	378.1	
1951	1765	726	1039	413.5	1.22069
1952	1833	762	1071	450.6	1.159375
1953	1913	806	1107	488.3	1.047222
1954	2008	855	1153	522.8	0.75
1955	2122	910	1212	584.7	1.049153
1956	2254	970	1284	628.6	0.609722
1957	2392	1033	1359	665.6	0.493333
1958	2533	1098	1435	692.6	0.355263
1959	2687	1167	1520	744.6	0.611765
1960	3031	1314	1717	859.8	0.584772
1961	3224	1389	1835	896.4	0.310169
1962	3428	1464	1964	937.5	0.318605
1963	3635	1539	2096	963.3	0.195455
1964	3856	1619	2237	1026.4	0.447518
1965	4095	1704	2391	1080.3	0.35
1966	4338	1793	2545	1111.1	0.2
1967	4569	1884	2685	1108.4	-0.01929
1968	4790	1975	2815	1172	0.489231
1969	5026	2065	2961	1259.8	0.60137
1970	5285	2154	3131	1322.8	0.370588
1971	5564	2248	3316	1363.1	0.217838
1972	5853	2352	3501	1422.3	0.32
1973	6143	2464	3679	1491.1	0.386517
1974	6409	2567	3842	1491.9	0.004908
1975	6645	2656	3989	1473	-0.12857
1976	6873	2741	4132	1554.7	0.571329
1977	7108	2829	4279	1594.4	0.270068
1978	7350	2920	4430	1649.4	0.364238
1979	7606	3014	4592	1715.9	0.410494
1980	7873	3113	4760	1733.8	0.106548
1981	8130	3210	4920	1735.7	0.011875
1982	8363	3303	5060	1716.5	-0.13714
1983	8587	3395	5192	1748.4	0.241667
1984	8810	3490	5320	1802	0.41875
1985	9027	3580	5447	1834.5	0.255906
1986	9248	3663	5585	1874.4	0.28913
1987	9475	3745	5730	1902.3	0.192414
1988	9710	3827	5883	1971.8	0.454248
1989	9963	3914	6049	2046.8	0.451807
1990	10245	4004	6241	2138.7	0.478646

Source: Sachverständigenrat, unpublished

[a] calculated as additional income per year in proportion to additional capital stock

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