The new East German economy: problems of transition, unification and institutional mis-match[1]

Wendy Carlin

Department of Economics

University College London

The economic strategy implicit in the West German government's approach to the New Länder was one of replication. The argument of this paper is that whilst replication was effective in solving the problems of transition, it brought with it a severe regional problem. Government policy has sought to deal with the regional problem by a programme of subsidizing investment but the costs imposed on the East by the transfer of the wage bargaining and social security systems remain. The West German economy is able to bear its very high direct and indirect labour costs because its institutions are well adapted to produce high quality goods and to promote through innovation the continuous improvement of goods and production processes essential for success in international competition. The heart of the East German economic problem lies with the successful transfer of some but not all West German institutions. The resulting institutional mis-match is likely to be difficult to resolve with the consequence that a very slow process of convergence of the East German economy to the level of output per capita of the West can be expected.

The extension of West German macroeconomic policy, the removal of all internal barriers to trade and factor mobility and a resolute privatization policy centred on the acquisition of East German enterprises by West German companies were expected to solve the key problems of transition. There would be an effective state, credible macroeconomic conditions, powerful market forces, a functioning banking system and effective corporate governance of enterprises. Yet solving the transition problems though incorporation into the Federal Republic has not solved the problems of the East German economy. East Germany is now a market economy but it is heavily dependent on the rest of the Federal Republic. Problems of transition have been supplanted by problems of the incorporation of a poor region into a rich country. As the experience of the Italian mezzogiorno testifies convergence of levels of prosperity between regions within a nation does not occur automatically.

Proximate determinants of regional convergence appear to be relative investment levels and levels of cost competitiveness. Unification policy in Germany has promoted high levels of investment in the New Länder, which would tend to boost convergence but has led to poor cost competitiveness, which hinders convergence. The weakness in cost competitiveness of East German business reflects the specific characteristics of the economy into which the New Länder have been drawn. Labour cost competitiveness comprises two elements: the cost of wages and social security contributions per employee in East as compared with West Germany and relative productivity levels of the two regions. The much more rapid convergence of relative labour costs as compared to relative productivity levels created a competitive disadvantage for East German business. The instant transfer of the West German wage setting and social security systems was responsible for the former; the protracted difficulties in transfering the training system, the inter-firm networks and technology transfer systems are responsible for the persistence of the latter.

Section 1 addresses the issue of economic development in the New Länder from the perspective of the economics of transition. Section 2 examines the regional problem created by the terms of unification and section 3 focuses on the issue of institutional mismatch. Section 4 presents empirical data on the economic performance of East Germany and section 5 concludes with an evaluation of the prospects of the New Länder .

1. East German development as a problem of transition

The key problems for post-communist economic development identified early in the new field of transition economics were the establishment of (i) macroeconomic stability and credibility, (ii) liberalized prices and competition in goods and factor markets and (iii) effective corporate governance for financial institutions and non-financial business under largely private ownership. More recently, the importance of a functioning state able to create a credible environment in the form of predictable, non-arbitrary rules for private business to operate in has been stressed.[2]

The first two problems were solved immediately by unification as was the problem of the creation of a credible government with non-arbitrary taxation rules and credible legal enforcement of property rights and contracts. The solution of the third problem of restructuring, privatizing and creating effective

governance of the financial and non-financial enterprise sectors was twofold. The banking system was reformed before the enterprise sector was restructured.[3] Even before the Economic and Monetary Union of July 1990, the Bundesbank had in practice taken control of the East German state banking system. The Deutsche Kreditbank, the arm of the former State Bank of the GDR comprising the branch network and virtually all enterprise accounts came under the control of West German commercial banks (Deutsche Bank and Dresdner Bank) immediately after Monetary Union. The stock of 'old loans' accrued under the GDR state banking system was isolated in the balance sheet of the Kreditbank, so that Deutsche Bank and Dresdner Bank acquired a branch network and ongoing banking relationships with corporate customers, but no potentially bad enterprise debt.

Second, the privatization agency, the Treuhandanstalt, took effective control of the state enterprise sector including all non-financial enterprises. These two steps enabled East Germany to avoid the 'bad loans' problem characteristic of transition economies in which state-owned banks burdened with bad debt continued to lend to indebted enterprises on the assumption that the state would bail them out. The greater the overhang of bad debt, the more likely would be a bail-out and hence the lower the incentive for banks to effectively monitor their new loans to enterprises.

The East German solution was the complete carve-out of enterprises from the banking system and the centralization of enterprise restructuring in the privatization agency. This can be contrasted to an alternative approach - taken for example in Poland - in which enterprise restructuring was delegated to the banks, which received subsidies to undertake monitoring.[4] The German approach meant that the privatized banks could concentrate on rapidly modernizing the technical operation of the payments system, building up their personal sector business and establishing a client base in the new private and newly privatized enterprises. Taking as given the rapid increase in product wages in East Germany and the consequent unprofitability of the great majority of enterprises, full carve-out may have been efficient. Such an argument depends on the depth of the profitability crisis in the enterprise sector and hence on the burden on bank resources that bank-led restructuring would have entailed, on the possible complementarities and economies of scale available to a state agency and on the existence of an effective budget constraint for the state agency.[5]

The following stylized facts characterize the process of enterprise restructuring and privatization in the transition economies of Eastern Europe. There has been a very wide variety of methods and speeds of privatization and yet patterns of enterprise behaviour have been rather similar. Whilst there is some evidence of improved efficiency and profit orientation of privatized firms as compared with those remaining in state ownership (once possible selection effects have been taken into account) the only clear evidence of deep restructuring involving major investment and strategic decision-making has been observed in cases of foreign ownership. This is normally interpreted as reflecting the weakness of the corporate governance structures of firms and the underdevelopment of the financial institutions characteristic of a well-functioning market economy.[6]

By contrast, privatization in East Germany took place rapidly and resulted in a pattern of ownership in which there were typically clear outside owners with the incentive to maximize profits and with the resources in terms of finance and management expertise to carry out the required restructuring.[7] This outcome raises the question of how such rapid privatization entailing the transfer of control to outsiders was achieved, what role was played by complementary policies and whether the speed of restructuring was too fast. Enterprise restructuring refers to the changes to state-owned enterprises that were required in order that they could survive in the market environment. Such changes included labour shedding, changes in internal organization, the spinning off of non-core activities including social assets, the closure of non-viable units, capital investment and equipment modernization.

The Treuhand presided over the major restructuring of the economic landscape of the former GDR during its four years of operation. It played a substantial role in the breaking up of enterprises and the reduction of employment in them.[8] For example, in 1991, the ratio of multiplant to all enterprises was approximately 50% higher in East than in West Germany - two years later, East Germany had just half as many multi-plant firms.[9] When it began, there were over 4 million people employed in Treuhand enterprises - by the time it closed in 1994, there were less than one-quarter of this number in ex-Treuhand firms. By the end of the intense privatization phase, the East German economy was characterized by a population of firms with an average size well below that of West Germany or the UK.

The Treuhand sought buyers for the core businesses of its enterprises. In general both extensive pre-privatization restructuring and a subsidy on the purchase price were required to attract a buyer. Many enterprises were sold at negative prices. Although in theory auctions are more efficient than sale through negotiation with a small number of potential buyers, the Treuhand was not in the position of selling valuable well-defined products in a market with a large number of prospective buyers.[10] A more accurate picture of the Treuhand's task is to the think of it seeking to buy restructuring plans for its portfolio of enterprises. Seen from this perspective, it is clear why the Treuhand had to take a detailed interest in the identity of the purchaser. This was operationalized in the Treuhand's procedures through the use of contractual guarantees that privatized firms undertake specific levels of investment and employment. A successful bidder had to guarantee to carry out sufficient investment per head to make the enterprise competitive at West German wages in three to five years and was granted a subsidy in the form of a discount on the current asset value according to the number of jobs guaranteed.

For enterprises judged by the Treuhand as non-viable, it organized its own liquidation procedure along the lines of the United States debtor-oriented chapter 11 model in preference to the standard German creditor-oriented bankruptcy law. This allowed the Treuhand to keep firms out of the official bankruptcy process and to take account of the broader social costs of closure.

The rapidity with which enterprises were broken up and employment reduced in East Germany can be explained by the imposition of a hard budget constraint on enterprises by the Treuhand. Most enterprises were loss-makers and they required liquidity to survive. The Treuhand controlled access to liquidity through fairly effectively controlled guaranteed loans and because of the prior privatization of the banking system firms had no access to soft loans. This reduced the scope for managerial resistance to restructuring. Their incentive to engage in restructuring was heightened by the opportunities for managers to signal their quality on the external labour market because of the Treuhand audits of managers, the external evaluation of managers by potential investors and the presence of West German managers on the supervisory boards of large East German enterprises prior to privatization. The third aspect promoting pre-privatization restructuring in East Germany that was not present elsewhere in transition economies was the availability of compensation to the losers from the restructuring process. Initially this took the form of payment for short-time working - even in the case when zero hours were

worked - and was then replaced by special labour market measures of retraining and job subsidies along with generous unemployment and early retirement benefits. Finally, the implementation of the German welfare state provided East Germans with access to health care, education, child-care etc. outside the enterprise thereby lowering the costs to employees of labour shedding.

But was restructuring too fast in East Germany? As will be discussed below, the privatization policy was not the primary cause of the massive loss of industrial jobs in East Germany. Responsibility for that lay with the terms of unification. The application of employment subsidies in the sales and liquidation processes by Treuhand provided some offset to the excessive cost of labour. However, the absence of a general employment subsidy meant that the Treuhand had the incentive to cut employment by more than would have been optimal in the enterprises for which it was seeking buyers. Its employment policy was dictated by the requirement to control its own deficit. The cost of those unemployed was transferred to the budget of other government authorities. Had an employment subsidy applying to all jobs in East Germany been in place, then labour shedding in the pre-privatization phase would have been less extensive. It is possible that the Treuhand's rather successful policy of management buy-outs could have had a broader base leaving an economy less dominated by the subsidiaries of West German (and to a lesser extent foreign) companies.[11]

The need to find profit-oriented owners for former state-owned enterprises is a major problem for transition economies. The privatization method adopted by the Treuhand solved this problem for many East German enterprises. The result of the privatization process was to produce an economy with a very highly concentrated ownership structure. Ownership was dominated by companies (usually West German) and by families (usually from West Germany). Two-thirds of all ownership stakes of West German companies or families were for 100% of the East German firm. Ownership by West Germans was more prevalent in larger than smaller East German firms. It seems that about three-quarters of employment in privatized East German enterprises was in those owned by West Germans and foreigners.

The extent of concentration of ownership by outside companies and families in East Germany suggests the potential for effective control over management by profit-oriented owners. This impression is

reinforced by information on the structure of the boards of privatized firms. Comparison of the board structure of East with West German subsidiaries found that the post-privatization phase in East Germany was characterized by tighter management control by the parent firm than was normally the case for West German subsidiaries. The East German case resembled the high levels of control over management by the parent observed when West German subsidiaries were undergoing reorganization, restructuring or rationalization.[12] One rationale for the strategy of the Treuhand that produced this outcome is that control by a western owner was necessary in order for East German firms to gain access to finance, markets and management.

In common with any case of foreign investment there was a trade-off between these benefits and the danger that owners could use their control to strip the assets (including the markets) of the East German firms. Whilst many cases of exploitation of East German assets have been documented, the broad picture emerging from the privatization process is a high level of investment in the East German firms and high levels of management transfer.[13]

2. East German development as a regional problem[14]

The major economic implication of German economic and monetary union was that East Germany could run a current account deficit with the rest of the country that would be financed by transfers from the West. Unification meant that convergence of per capita income and consumption and hence that of living standards could precede the convergence of per capita output (i.e. GDP). Unlike a country, a region can run a current account deficit indefinitely - or more precisely, for as long as political support remains for the continued transfer of resources from the rich to the poor region. The transfer of resources from a rich to a poor region or from one with lower to one with higher unemployment occurs automatically in a political union: a unified tax and transfer system along with common scales for the payment of central/federal government employees (such as teachers, police officers, civil servants) are all that are required to produce this result. The greater the productivity and unemployment differences, the greater the level of 'automatic' transfer. The extent of transfer will further increase with additional deliberate measures of regional support.

The recent literature on regional convergence suggests that convergence of state output per capita in the United States occurred over the hundred years from the 1880s and in Japan between the prefectures in the post-war period. The successful convergence of the regions of central Italy to those of the North fits this pattern but the failure of the southern regions to converge does not. The Italian Mezzogiorno had a per capita income level of 70% that of the Centre-North when unification occurred in 1862. The gap widened to 55% by the late 1940s and further in the early 1950s. The only period of convergence occurred in the 1960s (by about ten percentage points) followed by divergence in the 1970s and 1980s. The Italian experience underlines the fact that a process of regional convergence is not automatic.

In the standard neoclassical growth model (the 'Solow' model), the reason for a poor region's lower output per head is its lower capital stock per head. The mechanism through which convergence occurs is capital deepening as the higher rate of return on investment in the poor region (due to its lower capital labour ratio) induces 'catch-up' investment. In this model convergence can fail for two reasons: first, the assumption may be false that the only difference between the two areas is their capital per head and hence that the underlying long-run steady state characteristics of the two areas is same. Abramowitz has used the term 'social capability' to capture the idea that different countries could belong to different 'convergence clubs'.[15] In principle this could be true of regions too with the consequence that the neoclassical model would predict convergence through the process of capital deepening but to *different* long-run levels of per capita GDP. The second reason why neoclassical convergence could fail is if market imperfections prevent the necessary investment response. Stepping outside the standard model, there may be agglomeration externalities associated with the rich region that enhance the attractiveness of investment there even though the level of capital per head is higher. The political union of a rich and a poor region allows big deviations from market-determined levels to persist for both regional factor prices and investment levels. On the one hand, government policy can raise investment in the poor region to help offset agglomeration effects or to improve 'social capability' but on the other the transfer of institutional arrangements to the poor region can undermine regional competitiveness.

The dependence of East Germany on the rest of the Federal Republic was much greater after unification than has ever been the case in Italy. The scale of the regional problem arises both from the

initial conditions at unification and from the policies adopted. The relevant initial conditions were the relative decline of the productive capability of the GDR during the forty years of separation and the loss of value of East German industry due to the precipitate collapse of the Soviet Union and other former CMEA trading partners and of the CMEA trading arrangements. Pre-war data suggests little difference in per capita GDP between eastern and western Germany - in fact, there is some evidence that it was higher in the East. By the late 1980s, the per capita GDP of the GDR fell short of that of West Germany by about 30%.

The consequences of the productivity gap at unification for the scale of the regional problem were greatly exacerbated by the early agreement between government, West German unions and employers associations to a rapid convergence of negotiated wage rates and by the extension to the East of the very generous West German social security system. The interaction of the wage agreements and the social security system, in which unemployment benefit depends on the final wage, placed a high floor under the wage, especially for workers previously employed in Treuhand firms (where union-negotiated wage rates were always paid). The early agreements for rapid wage equalization in East Germany were implemented with little controversy or public comment in spite of the visible collapse of the East German economy and rapidly rising unemployment.[16]

As a consequence of the wage and social security policies associated with unification, the New Länder began with an enormous competitive disadvantage. Although the terms of the currency union between the GDR and the Federal Republic are sometimes identified as the source of the competitiveness problem for East Germany, this claim is not compelling. A simple way of seeing this is to consider the impact of the 1:1 rate used for current transactions (a rate less favourable to the Ostmark was used for the conversion of some savings). In the goods market, the translation of a given Ostmark price for an East German product into Deutschmarks at one-to-one typically resulted in a collapse in demand for the product with the consequence that either the Deutschmark price was sharply reduced or the product was withdrawn from sale. According to this logic, an incorrect exchange rate would, through the operation of market forces, have led to a decline in Deutschmark wages in response to the excess supply of East German labour as the labour market equilibrated. Yet an increase not a decrease in wages in Deutschmark was observed after the currency union occurred. The operation of market forces

to correct an inappropriate initial exchange rate used for the currency conversion was impaired by the wage and social security policies, with the result that the disequilibrium in the labour market was exacerbated and not ameliorated.

An empirical examination of the evolution of the gap between per capita income in the North-Centre and the South of Italy confirmed the role of the relative share of investment and the relative level of unit labour costs in industry (a measure of competitiveness). As suggested by theory, convergence is boosted by a rise in the investment effort in the poor relative to the rich region and by an improvment in regional cost competitiveness. The policies adopted at unification fostered a very high level of investment in East Germany. As argued in section 1, the method of privatization was one that promoted this. In addition, the government provided high levels of subsidy for investment in the east. The outcome was a share of investment in GDP double that of West Germany. There is some evidence from an examination of the investment effort and productivity growth in sub-industries of manufacturing that the extent of productivity catch-up to West Germany was fastest in those sub-industries with the highest amounts of investment.

Although investment levels remain high in East Germany, the competitiveness problem persists (as is documented below in section 4). The ending of the brief phase of convergence of the Italian Mezzogiorno has been attributed to unfavourable policy and institutional changes that produced weakening of regional investment and a deterioration in competitiveness. A further factor in the Italian case appears to have been the devolution of administrative power from central to regional government that happened in the early 1970s, and which appeared to shift spending powers to a region in which there were very poorly rooted civic traditions. This opened up a greatly increased scope for rent-seeking behaviour. The pre-war success of Eastern Germany and evidence on the process of administrative reform since unification suggest that the kinds of problems arising from weak administration and the possible integration of a dependence culture that appear to have been so important in Italy's persistent regional problem are unlikely to recur in Germany.

3. East German development as a problem of institutional mis-match[17]

The Federal government's strategy was to achieve the economic unification of Germany through the

replication of West German institutional and production structures in the New Länder. It was assumed that the production profile and patterns of organization of West German companies would be reproduced in the East alongside the transfer of the administrative, industrial relations and social security systems. The early behaviour of West German companies provided encouragement that a strategy based on the large-scale engagement by western business in the east was feasible. Of the 500 large West German firms surveyed about their investment intentions in 1990, more than 60 per cent were preparing for major investment activity in East Germany and another 20 per cent were intending to invest in the near future. The motive for large companies to undertake major investment projects through the purchase of East German companies rested on the assumed value of the markets of these enterprises in Eastern Europe and the Soviet Union. A base in East Germany appeared attractive since unification eliminated the macroeconomic and political risk facing investors elsewhere in the transition countries.

The ambitious plans for private investment in the New Länder based on buoyant expectations of the value of markets in Eastern Europe and of the access to them provided by East German enterprises were rapidly scaled down as the Soviet Union collapsed and the painful process of transition became apparent. The export markets of East German enterprises collapsed within a year of unification and it was clear that the demand from within East Germany could be met from the existing western capacity of German firms. Simultaneously other key components of the replication strategy - wages and social security - had been implemented. It rapidly became clear that even a more modest than originally anticipated engagement of West German companies in the New Länder would require large subsidies.

An explanation of the importance of West German business engagement in the New Länder for the prospects for convergence rests on the claim that the ability of West German firms to pay high direct and indirect labour costs and to compete successfully on international markets is dependent on specific institutional arrangements within and between firms. These arrangements have allowed German industry to retain market share in industries by making intensive use of skilled labour as the key to successful innovation. As has been confirmed by observers using a range of different empirical techniques, West German firms are especially good at incremental innovation with established technologies at the high quality end of the product range. By contrast, they are not particularly good at

frontier or radical innovation in which quite new technologies are being developed.

A competitive strategy based on high quality incremental innovation entails a kind of work organization and skills that create monitoring and incentive problems for management. One reason is that in order for the innovation process to work, it is necessary for skilled workers from engineers to skilled manual workers to have a great deal of autonomy. Secondly, this kind of innovation system requires employees to have general industry technology skills that are supplemented with company-specific skills built up through decentralized problem-solving. The combination of autonomy and transferable skills creates a serious problem for management of how to motivate, monitor and retain such powerful employees. Its solution requires a relational contract between managers and employees based on consensus decision-making. The German works council provides a framework on the workers' side for a contract of this kind with management but the external industrial relations system has a major role to play in guaranteeing the works council its powers and in preventing it from abusing those powers. If there is inappropriate behaviour by powerful workers within the firm, the management can turn to the employers' association and if management fail to stick to its relational contract then the works council can turn to the union.

Whilst the macroeconomic role of the German wage setting system frequently attracts attention, its microeconomic logic is often overlooked. To appreciate the institutional obstacles to the replication strategy for the New Länder, we can see that in the absence of a sufficient presence of German companies operating in the high quality incremental innovation niche, the regional economy has taken on the cost burden of the wage-setting and social security system without reaping the micro-institutional benefits. Although the initial wage increases in East Germany were the result of union and employer association agreements, the social security system comprises part of the explanation for East Germany's persistent competitiveness problem. The reason is that negotiated ('tariff') wage increases are not legally binding. Indeed many small firms in East Germany pay wages below the tariff rates. The problem is twofold. The floor to such wages is set by the social security benefits and this limits the creation of low productivity jobs (for example, in the services sector or in the supply of good or services in competition with producers in neighbouring low wage countries such as Poland or the Czech Republic). For larger firms, membership of employers' associations is attractive because of the

benefits supplied (e.g. in relation to training) but brings with it the need to pay the tariff wage rate.

Two other components of the institutional basis of West German competitive success are difficult to reproduce without a sufficient presence of large German companies in the East: training and technology transfer. Companies play a major role in paying for the acquisition of general industry as well as company-specific skills in Germany. Companies undertake training against the background of a vocational training 'expert community' of unions and employers associations that undertake curriculum development and the monitoring of standards. Only West German owned companies in East Germany train in the West German target range with trainees comprising 6% of employees. Even this level is dependent on special subsidies - one half of new in-firm places in 1994 were subsidized.

Less well-known is the collaboration between companies that enables efficient technology transfer to take place. Long-term relationships between firms appear to play a major role in the translation of radical innovations (usually coming from abroad) into agreed industry standards and in the associated build-up of competences in the new technology through research institutions and research departments of large companies.

Figure 1 provides a summary of major West German institutions, the role they play in sustaining the high quality incremental innovation system in West Germany and the obstacles they present for the development of a self-sustaining growth process in the New Länder.

Figure 1. Institutions in East and West Germany

Institution	Role in West German High Quality Incremental Innovation System	Problems created for the New Länder
Industry-wide collective bargaining system	Employers support the tariff wage system as a counter-weight to the power of skilled workers.	Firms are unable to produce profitably at tariff wage rates. The incentive to invest is lowered.

Training system where companies pay for training in general industry skills	Tariff-wage system supports the training system by helping to prevent poaching of skilled workers and hence assists the maintenance of high levels of training. External certification and access to the internal labour market of large companies provides young people with the incentive to invest in training.	The base of companies is too small to provide sufficient in-firm training places.
Innovation and technology transfer system	Industry associations foster standard-setting and help to minimize relational problems arising from incomplete contracts when companies need to cooperate in innovation.	Long-term relationships are difficult to develop. East German 'independent' firms lack access to technology diffusion networks.

4. East German economic performance

The East German economy has grown rapidly in the years since unification. As shown in Table 1, the average growth rate over the period from 1991 to 1996 was 6.8 per cent per annum compared with the poor performance of the West German economy in the same period in which average growth was less than 1 per cent per annum. This period of rapid growth has produced an impressive amount of catch-up for the New Länder. Evaluating output at 1996 market prices, then the GDP per capita in East Germany in 1991 is estimated at 40% of that of West Germany. By 1996, East Germany was at a level of 57% of West Germany. This speed of catch-up is much faster than that predicted by some early observers[18] - it is similar to that achieved by the Italian Mezzogiorno during its single decade of convergence in the 1960s. However, in the last few years, the speed of convergence has dropped dramatically: in 1997, East German growth has been provisionally estimated at 0.4% below that of West Germany.

Unemployment shot up to over 10 per cent soon after unification and remains at above 15% of the labour force. This is well above West German levels, which has increased in the 1990s to historically high rates. Moreover it is estimated that there are another 12.6% of the East German labour force in hidden unemployment (as compared to less than two per cent in West Germany) (SVR 97/98 T21*).

Table 1. The East German Economy

		1991	1996	1991-96
GDP growth	EG		2.0	6.8
(% p.a.)	WG		1.3	0.9
Unemployment rate	EG	10.7	15.0	
(% of labour force)	WG	5.5	9.1	
GDP per capita WG=100	EG	40.2	57.0	
(at 1996 market prices)				
Gross investment share	EG	42.5	51.0[a]	
(% of GDP current prices)	WG	22.0	18.8[a]	
Unit labour costs in industry WG=100	EG	147.4	124.1[b]	
(wage + non-wage labour costs per unit output)				
Transfers to East Germany[c]				
% of EG GDP		51.5	35.2	
% of WG GDP		3.7	4.0	

Notes:

a 1994 (Data is no longer published for gross investment for EG and WG separately.)

b 1995

c from OECD (1997). Economic Survey of Germany. Table 8, p.43.

Sources: Statistisches Bundesamt (1997) Volkswirtschaftliche Gesamtrechnungen, Fachserie 18, Reihe 1.3, 1996 Hauptbericht. Sachverständigenrat zur Begutachtung der gesamtwirtschaftlichen Entwicklung (1997). Jahresgutachten 1997/98. Own calculations.

The huge investment effort in East Germany that has contributed to the closing of the GDP per capita gap is reflected in a share of investment in GDP in the East of between 40 and 50% over the post-unification period. The comparable figure for West Germany is about 20% (see Table 1). The financing of levels of consumption and investment expenditure well beyond what could be paid for from East German GDP has come predominantly from West Germany. West Germans have been transferring between 3 and 4 per cent of GDP per annum to the East. In spite of the growth of East German output, this transfer still represented 35% of East German GDP in 1996.

Although high investment has promoted the modernization of East German industry, the catch-up of productivity still lags behind that of wages. In 1991, East German industrial labour costs were nearly 50 per cent higher than those in West Germany. By 1995, they were still 24 per cent higher.

Table 2 provides more detailed information on the state of manufacturing industry in East Germany. Manufacturing employment has halved since 1991 in absolute terms taking the share of manufacturing in total employment from 28% in 1991 to less than 16% in 1996. This is a long way below the share in West Germany. The interaction between high investment and the collapse of manufacturing employment is reflected in the increase in the stock of machinery and equipment per worker in East Germany from 28% of that in West Germany in 1991 to over 70% in 1996. It appears that East Germany is moving toward a manufacturing sector with a similar level of capital-intensity to that of the West but one that is very small relative to the size of the economy.

The significance of the size of manufacturing for regional convergence is confirmed by a cross-section regression for European regions.[19] We found that there was a significant positive relationship between the share of employment in manufacturing in a region and its per capita GDP. The regression result predicts that with a manufacturing employment share of 16%, East Germany would have a GDP per capita of 85 to 90% of the European average. This would of course leave it well below the West German level.

Table 2. Manufacturing Industry in East Germany: Selected Indicators

	1991	1996	% p.a. change 1991-6	WG
Employment (’000)	2,049	1,003	-15.7	-3.8 (% p.a. 1991-6)
Manuf. employment/ Total employment (%)	28.0	15.9		26.7 (1996)
Stock of machinery & equipment per worker (WG=100)	28.1	72.2		100
Profitability (gross profit share in value added) (%)	-54.3	2.0		19.0

Sources: Statistisches Bundesamt (1997) Volkswirtschaftliche Gesamtrechnungen, Fachserie 18, Reihe 1.3, 1996 Hauptbericht. Sachverständigenrat zur Begutachtung der gesamtwirtschaftlichen Entwicklung (1997). Jahresgutachten 1997/98. Own calculations.

A useful summary measure for the performance of manufacturing industry is to calculate the gross profit share in value added from national accounts data. The result of this calculation is interesting. In 1991, the gross profit share in East German manufacturing was -54%, which reflected the fact that the bulk of firms were making losses as the value added was only two-thirds of the wage bill. This situation has gradually improved through two processes. On the one hand, the most poorly performing firms have been closed down. As noted in section 1, a great deal of this has occurred through the closure procedure introduced by the Treuhandanstalt. On the other hand, the profitability situation of surviving firms has on average improved as a result of continued cuts in employment and improved sales. By 1996, the gross profit share for the manufacturing sector as a whole in East Germany had turned positive. The continued seriousness of the situation is underlined by the disparity between the 2% profit share for East German manufacturing and the 19% achieved by West German manufacturing (on average over the 1991-96 period). It should be noted that the result for West Germany for this

period was an historically poor one.[20]

Since the recovery of the manufacturing sector is of great importance if East Germany is to reduce its dependence on the west, the steady improvement in performance is noteworthy. The disappointing aggregate growth of East Germany in 1996-7 reflects the slowdown of the construction boom and of the early phase of rapid development of personal services.[21] This aggregate picture masks the improvement in the position of manufacturing and of one part of the services sector that has been lagging - business-related services. Another positive indicator is the evidence that East German firms are increasingly able to make sales beyond the region. A survey in 1994 showed that 52% of turnover of East German firms stayed within the region; by 1996 the proportion had fallen to 43%.[22] The skewed size distribution of manufacturing firms toward small and medium-size categories (see section 1 above) is one factor making the penetration of markets outside the region difficult.

5. Conclusions

The regional and institutional mis-match problems dominate East Germany's prospects. But an additional factor that hampered convergence was the macroeconomic policies of the Bundesbank and the Federal government. Two stages of macroeconomic policy can be identified. Firstly, it was inevitable that unification would raise the level of aggregate demand in West Germany as the extra spending in East Germany pulled in goods and services from the West. This would boost employment. Inflationary pressure was bound to increase unless either there was an appreciation of the Deutschmark, which would have tended to reduce import prices and boost real wages lessening wage inflation or there was a negotiated agreement between the government, employers and unions as to the sharing of the burden of unification. Neither of these moves occurred. Membership of the exchange rate mechanism and the unwillingness of France and the UK to agree to a DM-revaluation ruled out the first. The unwillingness of the Federal government to accept the scale of the burden that unification would entail was at least partly responsible for ruling out the second. The result was a sharp rise in wage inflation in the early 1990s that led inevitably to the Bundesbank tightening monetary policy. The consequences of this were the collapse of the ERM and the onset of recession across continental Europe.

The second stage of macroeconomic policy centres on fiscal policy: tight monetary policy in the early 1990s was followed by a phase of very tight fiscal policy from 1994. Unification inevitably meant a rise in the fiscal burden for West Germany and therefore for the Federal Republic as a whole. A number of economists pointed out soon after unification that it should be seen as an investment project for West Germany and that deficit finance was the appropriate way to pay for it. This rationale clashed with both the dominant domestic concern with reducing the burden of national debt and with the timetable for meeting the Maastricht criteria for European monetary union, one component of which was that national debt to GDP ratios should be below 60%. Even if the national case for a substantial temporary rise in the debt ratio above 60% in order to smooth the costs of unification over time had been accepted, the central role of Germany in the EMU project raised a major obstacle. As a result, the balance between tax and deficit finance to pay for unification was tilted toward the former. This depressed demand in West Germany and increased rate of unemployment required to hold down inflation there, as the evidence suggests that workers in West Germany were less willing to accept cuts in take-home pay due to the unification-related tax increases than was typical for other tax rises.

The macroeconomic straitjacket has worsened the conditions for the successful incorporation of the East German economy into the Federal Republic.Weak growth in West Germany lessened the incentives for West German firms to increase capacity by purchasing Treuhand firms and setting up greenfield plants. Without a sufficient density of West German companies operating in the East technology transfer and serious vocational training on the West German model cannot work. Whilst the continuation of support from the West for investment in East Germany is necessary, institutional innovation will also be required in the East if it is to achieve self-sustaining growth.

Notes

[1]This paper makes extensive use of previous work that I have done - often in collaboration with others - on the economic transformation of the East German economy. The relevant references are listed as appropriate below. Since this paper is based on existing work, I have not generally repeated here the references to the literature reported there.

[2]A standard source for the analysis of transition is the annual *Transition Report* published by the European Bank for Reconstruction and Development.

[3]The transformation of the financial sector in East Germany and the comparison with other transition economies is discussed in Wendy Carlin and Peter Richthofen, "Finance, Economic Development and the Transition: the East German Case", *Economics of Transition* Vol 3 No. 2 (1995) pp 169-195.

[4]For a more detailed discussion, see Philippe Aghion, Olivier Blanchard and Wendy Carlin, "The Economics of Enterprise Restructuring in Eastern Europe" in J Roemer (ed) *Property Relations, Incentives and Welfare*. Proceedings of the IEA Conference, Macmillan (1997) pp 271-318.

[5]See Wendy Carlin and Colin Mayer 'The Treuhandanstalt: privatization by state and market' in O. Blanchard, K. Froot, J. Sachs (eds) *The Transition in Eastern Europe: Volume 2: Restructuring* Chicago: Chicago University Press and NBER, 1994. 189-213.

[6]See for example, EBRD, *Transition Report 1997*, chapter 5. London: EBRD.

[7]For a detailed presentation of the results, in terms of ownership and control, of the privatization process in East Germany, see Wendy Carlin and Colin Mayer, "The Structure and Ownership of East German Enterprises", *Journal of the Japanese and International Economies* 9 (1995) pp 426-453.

[8]For further detail, see Wendy Carlin, "Privatisation and Deindustrialisation in East Germany" in Saul Estrin (ed) "Privatisation in Central and Eastern Europe", London: Longman (1994), pp 127-153.

[9]Detailed data is presented in Carlin and Mayer, "The Structure and Ownership of East German Enterprises".

[10]The general economic argument in favour of the role of auctions in privatization is set out clearly in Klaus M. Schmidt and Monika Schnitzer, 'Methods of Privatization: Auctions, Bargaining, and Giveaways' in Herbert Giersch (ed.) *Privatization at the End of the Century*. Heidelberg: Springer Verlag Berlin pp.97-133. An argument for the limited usefulness of auctions in the East German case is made in Carlin and Mayer 'The Treuhandanstalt: privatization by state and market'.

[11]This argument was made in Carlin, "Privatisation and Deindustrialisation in East Germany". A recent paper that provides comprehensive data on the Treuhand's activities including the management buy-out programme is Dieter Bös, 'Privatization in Eastern Germany: The Never-Ending Story of the Treuhand' in Herbert Giersch (ed.) *Privatization at the End of the Century*, pp. 175-197.

[12]Carlin and Mayer, "The Structure and Ownership of East German Enterprises".

[13]For a detailed analysis of management transfer see I.J.A. Dyck, 'Privatization in Eastern Germany: Management Selection and Economic Transition', *American Economic Review*. Vol. 87, No. 4, September 1997, pp. 565-597.

[14]This section is based on Andrea Boltho, Wendy Carlin and Pasquale Scaramozzino, "Will East Germany become a new Mezzogiorno?", *Journal of Comparative Economics* Vol 24 (1997) pp 241-264.

[15]Moses Abramowitz, 'Catching Up, Forging Ahead, and Falling Behind', *Journal of Economic History*, Vol. 46. No. 2, June 1986, pp. 385-406. William J. Baumol, 'Productivity Growth, Convergence, and Welfare: What the Long-Run Data Show', *American Economic Review* Vol. 76, No. 5, December 1986, pp. 1072-1085.

[16]Karl-Heinz Paque, 'East-west wage rigidity in United Germany: causes and consequences' *Kiel*

Working Papers No. 572, 1993, p. 22.

[17]This section is based on the arguments set out in Wendy Carlin and David Soskice, "Shocks to the System: the German Political Economy under Stress", *National Institute Economic Review*, 1/97 no. 159 (1997) pp 57-76.

[18]For example, Robert J. Barro and Xavier Sala-i-Martin, 'Convergence Across States and Regions', *Brookings Papers on Economic Activity*, No. 1, 1991, pp. 107-182.

[19]Reported in Andrea Boltho, Wendy Carlin and Pasquale Scaramozzino, "Will East Germany become a new Mezzogiorno?" pp.258-9.

[20]Table 3 in Wendy Carlin and David Soskice, "Shocks to the System: the German Political Economy under Stress", p.60.

[21]For a detailed analysis of the evolution of services in East Germany see Deutsches Institut fηr Wirtschaftsforschung, *Wochenbericht* 3/98, pp. 43-73.

[22]DIW *Wochenbericht* 32/97 p. 552.