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**EU ENLARGEMENT, MIGRATION AND
LESSONS FROM GERMAN UNIFICATION**

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*LABOUR ECONOMICS AND PUBLIC POLICY
AND TRANSITION ECONOMICS*



Centre for Economic Policy Research

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ABSTRACT

EU Enlargement, Migration and Lessons from German Unification*

The Paper studies the role of international implications after EU enlargement. Based on a formal model, with migration costs for both capital and labour, it predicts a two-sided migration from the new to the old EU countries, which is later reversed. As the migration pattern chosen by market forces turns out to be efficient, migration should not be artificially reduced by means of legal constraints or subsidies to the new member countries. The Paper draws the parallel with German unification and points out the lessons to be learned by Europe. The analysis concludes with a brief discussion of the 'second best' problem posed by the existence of welfare states in the old member countries.

JEL Classification: F15, F22, H50

Keywords: EU enlargement, migration, welfare state

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NON-TECHNICAL SUMMARY

EU enlargement resembles German unification. In both cases a large and well functioning economy has been, or will be, expanded by the addition of a poor and underdeveloped economy, and, indeed, even the relative magnitudes of the enlargements are similar. While German unification increased the population of the market economy by one quarter, the planned EU enlargement will roughly increase it by one sixth. However, a number of policy mistakes made German unification work out so badly that it can only be hoped that the European enlargement does not involve similar problems. German unification has implied an annual public transfer cost of 5% of GDP for West Germany. Duplicating the German policies at an EU level would put the respective figure at 4.5% of the west European GDP or more than 300 billion euros per year. The Paper tries to draw lessons from the German experiment that would help avoid such a resource cost at the European level.

The German policies are compared with the results of a theoretical migration model that clarifies fundamental aspects of the transformation process of opening the borders and allowing free migration of capital and labour. The model shows that the result of the free migration decisions, of people and of direct investors, will only be a temporary westward migration, which will later be reversed and that such a two-sided migration pattern is likely to bring about a first-best allocation of resources if governments do not intervene in the markets. Thus, neither artificial barriers to migration nor social transfers are needed to achieve a first-best allocation of resources.

The reason for the two-sided migration lies in the idiosyncratic migration costs of capital and labour. Although there are similarities in the migration costs of these two factors of production, there are also important differences in relation to the relative importance of set-up costs and permanent costs. Capital primarily faces set-up costs that result from institutional, logistical and informational constraints. These costs tend to slow down the adjustment of the capital stock, but have little influence on its long run allocation. Labour, on the other hand, primarily faces permanent costs that may last for the whole time a worker lives in another country. These costs include the cost of regular visits back home, of high rents and of the discomfort of not living at home. The permanent costs do not slow down the migration of labour: unlike capital, labour can move quickly across the borders. However, they do affect the long-term equilibrium and tend to stabilize the initial allocation of labour. The differences in the migration costs of capital and labour result in a characteristic adjustment pattern that will characterize the transformation process in the new member countries. Policy makers should accept this pattern and no attempt

should be made to stop migration by erecting new walls or subsidizing the economies of the new members.

This statement may need to be qualified if minimum wages or generous welfare payments in the old member countries are taken into account. However, reforming the old members' welfare systems would still be better than subsidizing inefficient structures in the east. Such reforms could include the home country principle for welfare payments, as well as wage subsidies that enhance the flexibility of the labour markets.

1 Introduction

Now that NATO has expanded towards the East, the European Union will follow. The EU has started participation negotiations with Estonia, Poland, the Czech Republic, Hungary, Slovenia and Cyprus and most of these countries will undoubtedly become full members within a few years.

In all likelihood, the new members will enjoy the four basic liberties of the EU right from the start, among them the right to trade freely and to migrate to, and work in, any of the more developed EU countries. As wages in the new member countries currently range from 8% (Estonia) to 23% (Slovenia) of the wages in the more developed EU countries (like Germany), a mass migration towards the West seems likely. Many people in the West disapprove of this development, arguing that the West will be overburdened and that the economies of eastern and western Europe alike will be hurt. Some commentators advocate postponing the enlargement until convergence without labour migration has been completed, others argue that fiscal transfers and harmonization of social standards are necessary to prevent the easterners from migrating to the West.

The discussion parallels the one that took place about German unification, and indeed the economic similarities are striking. In both the German and European enlargements a large and well functioning economy has been, or will be, expanded by the addition of a poor and underdeveloped economy, and, indeed, even the relative magnitudes of the enlargements are similar. While German unification increased the population of the market economy by one quarter, the planned EU enlargement will roughly increase it by one sixth, from 375 million to 435 million. However, a number of policy mistakes made German unification work out so badly that it can only be hoped that European enlargement does not involve similar problems. German unification has implied an annual public transfer cost of 5 % of GDP for west Germany. Duplicating the German policies at an EU level would put the respective figure at

4.5 % of the west European GDP or more than 300 billion euros per year. The paper will try to draw lessons from the German experiment which would help avoid such a resource cost at the European level.

The German policies will be compared with the results of a theoretical migration model that clarifies fundamental aspects of the transformation process of opening the borders and allowing free migration of capital and labor¹. The model shows that the result of the free migration decisions of people and direct investors will only be a temporary westward migration which will later be reversed, and that such a two-sided migration pattern is likely to bring about a first-best allocation of resources if governments do not intervene in the markets. Thus, neither artificial barriers to migration nor social transfers are needed to achieve a first best allocation of resources.

The reason for the two-sided migration lies in the idiosyncratic migration costs of capital and labor. Although there are similarities in the migration costs of these two factors of production, there are also important differences in the relation to the relative importance of set-up costs and permanent costs. Capital primarily faces set-up costs which result from institutional, logistical and informational constraints. These costs tend to slow down the adjustment of the capital stock, but have little influence on its long run allocation². Labor, on the other hand, primarily faces permanent costs that may last for the whole time a worker lives in another country. These costs include the cost of regular visits back home, of high rents and of the discomfort of not living at home. The permanent costs do not slow down the migration of labor: unlike capital, labor can move quickly across the borders. However they do affect the long term equilibrium and tend to stabilize the initial allocation of labor. The differences in the migration costs of capital and labor result in a characteristic adjustment pattern that will be worked out in the next section.

¹ The present model was discussed in a non-technical way in Sinn and Sinn (1991) in the context of German unification.

² See Abel and Blanchard (1983).

Although the paper is mainly concerned with the first-best transformation strategy, the concluding remarks will contain a brief comment on the second-best problem of how to react to a given set of government interventions in the West, such as minimum wages or unemployment benefits. It will point to ways of carrying out social policies that achieve their goals without impeding the market mechanism.

2. A Simple Transformation Model with Two-sided Migration

The model focuses on a small economy which joins a large one. The small economy represents the new member countries of the EU, which presumably are underdeveloped and where capital intensity in production and wage rates are both low. The large economy is the group of old member countries which are well developed, with high capital intensity and a high wage rate. While commodities, financial capital and technological knowledge migrate freely across the borders without any migration costs, movements of capital and labor do involve such costs. For convenience, commodity prices are normalized to unity and the rate of interest within the union is assumed to be fixed at the rate r .

The migration costs of capital are adjustment costs of the usual type whose magnitude depends on the size of investment I : $\varphi(I)$, $\varphi(0) = 0$, $\varphi' > 0$, $\varphi'' < 0$. The adjustment costs slow down the movement of capital. Labor, by contrast, can migrate quickly, but it faces migration costs in the sense that many people do not want to work in another country. With X the stock of guest workers in the old member countries, the guest workers' cost of working there is $\psi(X)$, $\psi(0) = 0$, $\psi' > 0$, $\psi'' > 0$. Note that $\psi(X)$ does not represent the once-and-for-all cost of migration, but the periodic cost connected with life in a foreign country, such as the cost of returning home regularly, of paying a higher rent or of not having the pleasure of living at home. Some guest workers face a low utility loss and return home only rarely, while for others the opposite is true. Let $\psi(X)$ denote the aggregate guest workers' cost of living in the old member countries, where the guest workers are ranked in inverse order of their preference

for staying at home. Then $\psi'(X)$ measures the individual migration cost of the X -th guest worker in this order.

As knowledge can freely be transferred, the new and old member countries use the same linear homogeneous production function $f(K, L)$, where K is real capital and L the employment of labor. The constant supply of labor by the new member countries is L^* , and

$$(1) \quad X = L^* - L$$

is the number of guest workers sent to the old member countries. Due to the small country assumption, the wage rate in the old member countries is fixed at the rate w^* , while the wage rate in the new member countries, w , is endogenously determined³. Given the wage rate in the new member country, workers with a high preference for their homeland, $\psi' > w^* - w$, work at home, since the wage differential is insufficient to compensate for the cost of working abroad. Conversely, workers with $\psi' < w^* - w$ migrate, since the wage differential is large enough to cover this cost. The marginal migrant who is indifferent between migration and staying at home is characterized by

$$(2) \quad \psi'(X) = w^* - w.$$

Note that, unless otherwise stated, all equations refer to all points in time $t > 0$, where zero is the point in time at which the new members join the union. In principle, variables like X , L or w should be read as $X(t)$, $L(t)$ or $w(t)$, respectively.

It is assumed that no migration was possible before the enlargement of the union and that, because of a low initial capital endowment, K_0 , the marginal product of labor was below the wage rate and marginal product of labor in the old member countries:

$$(3) \quad X(t) = 0, \quad \psi'[X(t)] = 0$$

³ Anticipating a result to be derived from the model, the star is chosen for parameters that will also characterize steady state values of model variables.

$$w^* - f_L(K_0, L^*) > 0, \quad f_L(K_0, L^*) = w(t),$$

for $t \leq 0$.

We model an equilibrium without deficiencies in private expectations in order to avoid the risk of artificially producing a kind of market failure that even benevolent governments could not correct. The representative firm in the new member country chooses the time paths of employment L and net investment I so as to maximize the present value of its real cash flow, taking the (exogenous) interest rate and the (endogenous) time path of the wage rate as given:

$$(4) \quad \max_{\{L, I\}_{t=0}^{\infty}} \int_0^{\infty} \{f[K(t), L(t)] - w(t)L(t) - I(t) - \phi[I(t)]\} e^{-rt} dt$$

subject to

$$K(0) = K_0 = \text{const.},$$

$$\dot{K} = I.$$

The current value Hamiltonian of this problem is

$$(5) \quad H = f(K, L) - wL - I - \phi(I) + \lambda I.$$

It results in the optimality conditions

$$(6) \quad \frac{\partial H}{\partial L} = f_L - w = 0,$$

$$(7) \quad \frac{\partial H}{\partial I} = -1 - \phi'(I) + \lambda = 0$$

and

$$(8) \quad \dot{\lambda} - r\lambda = -f_K.$$

Using (7), a basic differential equation for the development of investment can be derived from equation (8):

$$(9) \quad \dot{i} = \frac{r[1 + \varphi'(I)] - f_K(K, L)}{\varphi''(I)} .$$

In a market equilibrium the optimality conditions of households and firms are simultaneously satisfied, and all markets are cleared. Thus, in equations (1), (6) and (9) there are the same values of L and w . It follows from equations (1), (2) and (6) that

$$(10) \quad w = f_L(K, L) = w^* - \psi'(L^* - L) ,$$

which implies a functional relationship of the kind

$$(11) \quad L = \phi(K)$$

between the employment of capital and labor. Implicit differentiation of (10) gives

$$(12) \quad \phi'(K) = -\frac{f_{LK}}{-\psi'' + f_{LL}} > 0 .$$

This equation shows that an increase in the employment of labor will result from a capital investment.

According to (3) the initial stock of capital is too small to avoid emigration, and according to (9) this stock of capital can only gradually change with the passage of time. It follows therefore from (10) that there will be an immediate emigration wave and that the wage rate realised thereafter will be below the wage rate in the old member countries by the amount of the marginal migration cost $\psi'(X)$. Since the assumption of an immediate transfer of knowledge implies that both regions have the same production functions, they also have the same factor price frontiers. Thus, the marginal product of capital gross of adjustment

costs in the new member countries will be above that in the old member countries if, as can be assumed for a mature economy, the latter equals the market rate of interest r .

Figure1: Factor price equalisation between the new and the old member countries

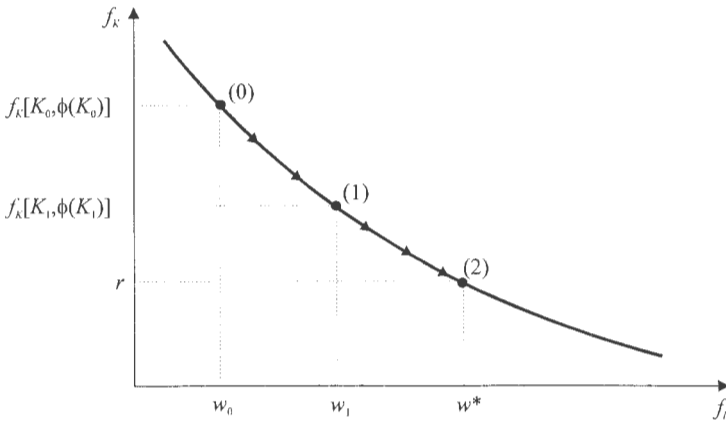


Figure 1 illustrates these findings. Capital intensity was very low before the emigration, and before the above equilibrium was established. After a transfer of knowledge there would have been a situation like (0). Due to a lack of technological knowledge, the true values of the wage rate and the marginal product of capital before joining the union may even have been lower than indicated by point (0), but this is not essential in the present context. Spontaneous emigration, which can be expected immediately after the enlargement of the union, induces a jump from (0) to (1). To the extent a capital import follows the fall of the borders, there will thereafter be a gradual south eastern movement along the factor price frontier from (1) towards point (2), where the marginal products of capital and labor equal those in the old membership countries and where K has reached its steady state level K^* . The movement from (1) to (2) satisfies the following equations which describe the reaction of the marginal products to an accumulation of capital, taking the endogenous increase of employment described by (12) into account:

$$(13) \quad \frac{df_L[K, \phi(K)]}{dK} = f_{LK} + f_{LL} \cdot \phi' > 0,$$

$$(14) \quad \frac{df_K[K, \phi(K)]}{dK} = f_{KK} + f_{KL} \cdot \phi' < 0$$

and

$$(15) \quad f_L[K^*, \phi(K^*)] = w^*, \quad f_K[K^*, \phi(K^*)] = r.$$

These equations show what happens if capital adjusts. The question, however, is whether, and to what extent, such adjustment will occur. The answer is given by equation (9) which, because of (11), can also be written as

$$(16) \quad \dot{I} = \frac{r[1 + \varphi'(I)] - f_K[K, \phi(K)]}{\varphi''(I)}.$$

Figure 2 illustrates the implications of this differential equation and the definitional differential equation $\dot{K} = I$. The diagram is fully covered with potential adjustment paths that are compatible with (16). The curve where $\dot{I} = 0$ indicates those combinations of I and K where the numerator of (16) is zero. It separates two regions where the economy would have to move in different directions. Some paths cut the $\dot{I} = 0$ curve horizontally, others hit the abscissa vertically. One, and only one, path leads to the point with co-ordinates $(I = 0, K = K^*)$. Only this path can be a market equilibrium. Higher paths have positive investment when $K = K^*$ and will therefore lead to a situation where the marginal product of capital is below the market rate of interest. Lower paths imply a halt to capital accumulation before the marginal product of capital has reached the market rate of interest. Neither can be optimal since $\varphi(I)$ cannot be negative and since it is possible to make $\varphi(I)$ as small as is wished by choosing a sufficiently low value of I .

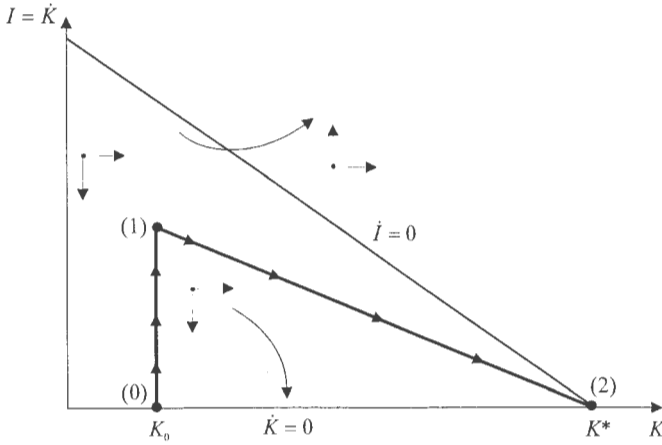
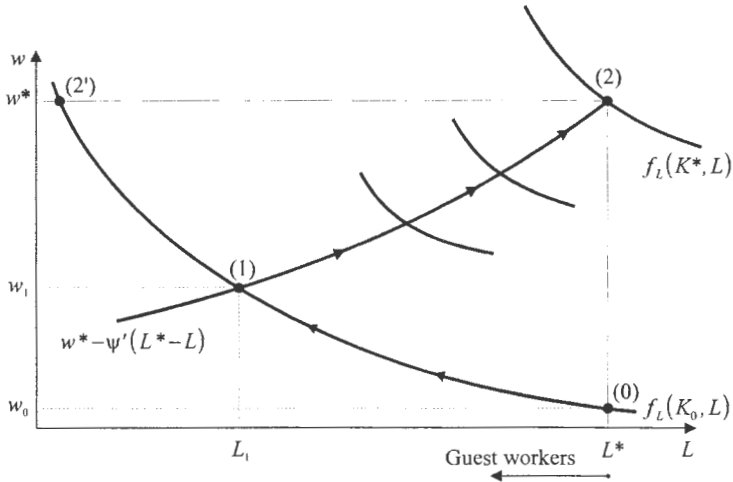
Figure 2: *The time paths of capital and investment*

Figure 2 demonstrates that the optimal adjustment strategy is characterized by an initial jump of investment from (0) to (1) and then a gradual decline from (1) to (2). Thus the stock of capital will initially grow rapidly, but the rate of growth will decline as the stock of capital approaches its steady state level, where a full factor price equalization is reached.

Figure 3: *Adjustment of the labor market*

To complete the picture, figure 3 shows what happens in the labor market. The figure contains a labor supply curve and a set of alternative labor demand curves. The lowest of the demand curves, $f_L(K_0, L)$, represents the situation before a capital import takes place, i.e. at the time of enlargement. The wage rate and the employment level are characterized by point (0). Since the wage rate is below that in the old member countries, there is an initial emigration wave which makes labor scarce and pushes the wage rate upward. The new short term equilibrium immediately after the enlargement is (1), where the labor demand curve cuts the supply curve. The supply curve represents the workers listed in inverse order of their reservation wages. The reservation wage rate is the wage rate in the old member countries w^* minus the marginal migration cost ψ' . In the new short term equilibrium, the number of workers who have migrated to the old member countries, and the number of jobs that have disappeared in the new member countries, is $L^* - L_1$.

With the passage of time, the accumulation of capital results in a gradual outward shift of the labor demand curve towards the position $f_l(K^*, L)$, and accordingly there is a chain of consecutive short-term equilibria along the labor supply curve that converge toward point (2) as time goes to infinity. During this development, the number of guest workers shrinks again, and finally, they all will have returned to, and work in, their home country.

The following proposition summarizes this result.

Proposition 1: *Enlarging the union by adding less developed countries implies a two-sided migration pattern. In the short run, given the insufficient stock of capital, part of the work force of the new member countries migrates to the old member countries. The increased scarcity of labor in the new member countries raises the wage rate and destroys the less efficient jobs there. As migration costs nevertheless keep the wage rates in the new and old member countries separate, capital will then gradually move to the new member countries. The increase in the stock of capital raises labor demand, the wage rate, and employment, which implies a return migration back to the new member countries. The process comes to a halt when wages are equal and the old work force is reinstalled in the new member countries.*

3. The Efficiency of the Market Solution

The question now is whether the two-sided migration pattern that was found is efficient or policy measures are appropriate for correcting and improving the transformation process. Suppose the European Commission could command the movements of capital and labor and suppose it wanted to maximize European welfare. Would it choose a transformation strategy other than the one selected by market forces? Should it really open its borders before the new members have matured and reached a development level similar to that of the old members? To answer these questions the socially optimal transformation pattern has to be calculated and compared with the market solution.

For the present purpose, welfare can be measured by the increase in EU wealth, adjusted for migration costs, that results from the enlargement, since this increase equals the increase in the present value of consumption that Europeans can afford. Technically speaking, the increase in wealth is the present value of the cash flow net of migration costs resulting from the enlargement. The Commission's goal is therefore

$$(17) \quad \max_{\{K, L\}_0^{\infty}} \int_0^{\infty} \{f[K(t), L(t)] + w^*[L^* - L(t)] - I(t) - \varphi[I(t)] - \psi[L^* - L(t)]\} e^{-rt} dt$$

subject to

$$K(0) = K_0 = \text{const.}$$

$$\dot{K} = I.$$

Note that changes in the cash flow earned in the old member countries are captured by adding the wage income earned by the guest workers, $w^*[L^* - L(t)]$, and by discounting with the market rate of interest, r , assuming that w^* and r reflect the marginal products of labor and capital, respectively. The current value Hamiltonian of this problem is

$$(18) \quad H = f(K, L) + w^*(L^* - L) - I - \varphi(I) - \psi(L^* - L) + \lambda I,$$

and the necessary conditions for a maximum are

$$(19) \quad \frac{\partial H}{\partial L} = f_L - w^* + \psi' = 0,$$

$$(20) \quad \frac{\partial H}{\partial I} = -1 - \varphi' + \lambda = 0$$

and

$$(21) \quad \dot{\lambda} - r\lambda = -f_K.$$

Obviously, these conditions are identical with those that characterize a market equilibrium. Equation (19) follows from (2) and (6), and equations (20) and (21) correspond to (7) and (8). The investment and migration patterns implied by these equations are identical with those of the market model as depicted in figures 1 through 3.

Proposition 2: *The transformation process chosen by market forces as defined by Proposition 1 maximises the welfare of the union. Thus the Commission should not try to modify this transformation process. In particular, it should neither impose constraints on the migration of workers nor try to prevent migration by subsidizing the new member countries.*

4. Lessons from German Unification

As was mentioned earlier, the problem of EU enlargement is very similar to that of German unification. In both cases a region impoverished by the destructive forces of communism is added to a well functioning and prosperous market economy, and in both cases a widespread fear of mass migration has induced, or may induce, countervailing policy measures. The German experiment provides important lessons to be learned by Europe as a whole.

In fact, the German experiment should be a warning to those who prefer to interfere with the transformation process brought about by market forces, because it was associated with massive lay-offs and turned out to be extremely expensive for the West. Aggregate employment went down by one third even though the share of government employees has remained about 20 % higher than in west Germany. In the manufacturing sector, employment even declined by two thirds, leaving a desert of abandoned ruins. Currently, the east German absorption of goods and services is 675 billion German marks, but GDP is only 452 billion. Absorption is 50 % higher than production, a lonely record in the history of modern economies. One third of absorption comes from the West, about 79 billion in the form of private capital transfers and the rest, 144 billion or about 5 % of west German GDP, as public transfers from the west German government sector. Since unification the west German government has transferred about 1.1 trillion German marks to east Germany, a sum that has

mostly been financed by public borrowing and forced Germany to violate the Maastricht treaty.

It is inconceivable that the cohesion of the European Union is strong enough to survive similar consequences of an eastward enlargement. A replication of the German policies at a European level would cost 2600 billion euros within a decade or, after some initial phase, 4.5 % of the current EU GDP per year.⁴

Germany has had to learn painfully why it is not wise to fight against the forces of a market economy. Arguing that wages would be equalized anyway in the long run and that measures to prevent mass emigration had to be taken, the politicians supported a policy of artificially adjusting the eastern wages much earlier than the market forces would have done. While the east German wage rate was only 7 % of the west German one in 1989, the union wage was fully equalized as early as 1997. Only the west German wage drift and frequent violations of the wage treaties exerted a somewhat mitigating effect, so that eastern wages now seem to have stabilized at about 72 % of western wages. Undoubtedly, the more than tenfold increase in eastern wages is the main reason for the east German disaster, ranking even before the problematic policies of the Treuhand agency⁵.

Apart from the official arguments used to defend the wage policies, the deeper reason for their being taken has to be sought in the fact that the wage negotiations were proxy negotiations, that they were carried out by people other than those who would have had to bear their consequences. The negotiations took place as early as 1991 and they specified the full time path of the eastern wages relative to the western wages for a period of five years, which was later extended to another year. However, at the time, privatization had just started, and so there were no entrepreneurs in east Germany who could have expressed their interest in low wages. What happened was that *west* German entrepreneurs negotiated about *east* German wages with east German workers and their *west* German union advisors. All participants in these negotiations had an interest in high wages, either in order to increase

⁴ This corresponds to about 5000 euros per person per year.

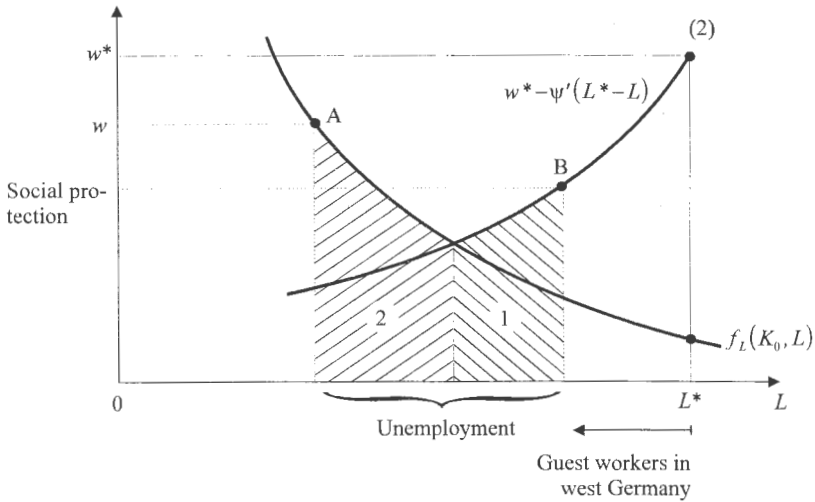
⁵ The Treuhand tried to make revenue by selling two thirds of the east German economy in the market place, but in the end it produced losses of more than two hundred billion German marks. The Treuhand can also be blamed for not participating in the wage negotiations, thus neglecting its task of protecting the east German capital stock.

their labor incomes and potential unemployment benefits or, what was more important, to eliminate the risk that low wage competition by eastern firms would reduce profits and jobs in the west.

Although the high wage policy was defended by arguing that it was needed to avoid mass migration, it certainly was not an appropriate means of achieving that end. The massive lay-offs that this policy induced were a strong incentive to migrate to the west where jobs for skilled eastern workers were easily available. Because it was afraid of this migration, the west German government decided to pump huge sums of public money into east Germany. Most of this money was used for social purposes, generating incomes without work such as unemployment benefits, social aid and early retirement schemes. As a result, a very generous welfare state has been established in east Germany. Indeed, it is so generous that east German pensions are, on average, higher than the west German ones.

The social support given to the east Germans can be seen as a “stay-put premium”, as a subsidy for not migrating to the west. It is the direct consequence of the false belief that mass emigration could have been stopped with overdrawn wages. This policy mistake has required subsequent policy interventions to patch up its undesired consequences.

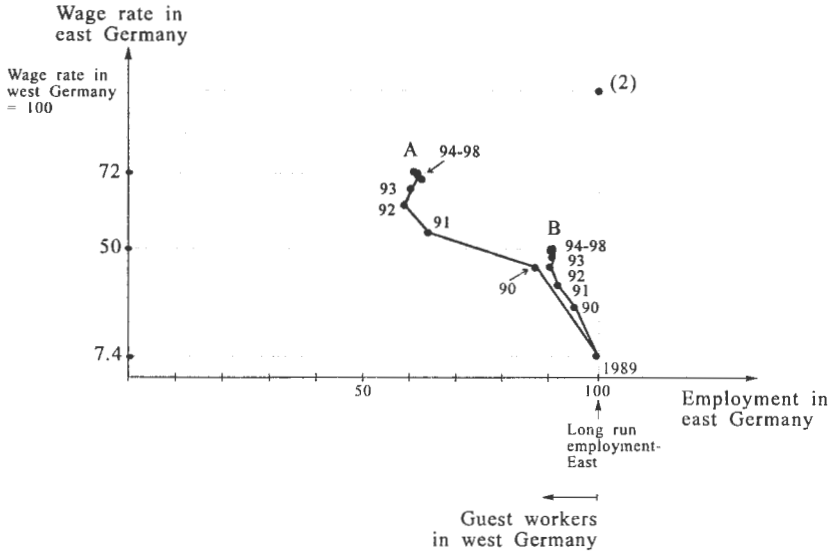
The mistake has likely involved huge social costs for Germany. According to the analysis of the last section, it would have been optimal after unification to increase wages to a point where the last work place destroyed had a productivity equal to the west German marginal product of labor net of marginal migration cost. Measured by this criterion, the policy of paying high wages and high stay-put premia has incurred two types of social cost. For one thing (1), it has failed to allow workers who were rightfully dismissed to emigrate and to participate in the west German production process. For another (2), it has, without replacement, destroyed jobs whose productivity was above the productivity, net of migration costs, that west German jobs would have offered. Figure 4 illustrates these two types of social cost with the two shaded areas labelled accordingly.

Figure 4: *The welfare cost of Germany's policy interventions*

The welfare cost illustrated in figure 4 is of a static nature. It is the cost at one particular point in time, given the then available stock of capital. Over time the labor demand curve shifts to the right due to capital accumulation, and the wage rate may further adjust. Also, with the change of the wage rate, the magnitude of pensions and unemployment benefits changes. This alters the level of the stay-put premium. In general, points A and B will move through the diagram with the passage of time, depicting specific “employment” and “migration paths”.

Figure 5: *Germany's transformation path*

(A = employment, B = migration)



Sources: IAB, *Werkstatthericht - Aktuelle Daten vom Arbeitsmarkt*, February 1999, table 3.1; IAB, *Mitteilungen aus der Arbeitsmarkt- und Berufsforschung* 31, table 5b, variant II & table 1, B, 1998; Statistisches Bundesamt, Fachserie 16, Reihe 2, several issues.

Legend: The left-hand curve shows the development of effective employment as a percentage of potential employment adjusted for demographic changes. Each point on the curve relates the effective full-time employment in east Germany to the east German wage rate which is measured as a percentage of the west German wage rate. The right-hand curve measures, from the right axis to the left, that part of the work force that has moved to west Germany. Each point on the curve relates the number of emigrated workers to the stay-put premium received from being unemployed in east Germany. Identifying the stay-put premium with the unemployment benefit, it equals 63 % of the east German wage rate. The horizontal distance between two points for each given year measures the effective unemployment rate in east Germany. The effective unemployment rate is much bigger than the official unemployment rate because it includes hidden unemployment in the form of early retirement, short time work, participation in temporary public work programs and voluntary withdrawal from the work force, a phenomenon primarily affecting women.

Figure 5 shows what these paths have really looked like since unification. Initially, in 1990, there was a rapid jump in the wage rate due to the 1:1 conversion of the currencies which effectively had meant a revaluation of more than 300 %. The subsequent wage negotiations increased the wage rate further to its current level of a good 70 %. The consequences were massive and immediate lay-offs. The lay-offs came to a halt in 1993 when

productivity increases offset the remaining wage increases occurring at that time. Unemployment benefits and pensions followed the wages and prevented the emigration of most of the people who had lost their jobs. In 1998 the number of commuters and more permanent emigrant workers had, it seems, reached a maximum with about 930,000 people while 3.7 million full-time equivalent jobs had been lost⁶. Obviously, the divergence between the employment and migration paths followed by Germany signals that there has been the kind of welfare loss illustrated in figure 4 in each year after unification. How the voyage through the diagram will continue remains to be seen. As explained in the last section, a convergence of Germany's unification policy towards economic rationality would mean a convergence of the employment and migration paths, too, with point (2) as their final destination.

5. Concluding Remarks on the Adjustments Necessary in the West

The analysis thus far has abstracted from the welfare state and its interventions in the labor market. Taking these interventions into account may qualify the analysis and provide a justification for the policy of creating artificial disincentives for migration. If people migrate to the West simply to become welfare recipients, there surely are efficiency losses from migration. In such a situation it could be efficient to subsidise the new member countries to keep the people there, and under certain conditions such a policy would even be cheaper for the old member countries than having to maintain the immigrants⁷.

However, the subsidies would be a third-best, rather than a second-best solution, and the West would hardly be able to afford them, as the German example has shown. Apart from the undesirable policy of postponing the enlargement, a cheaper alternative would be restricting the welfare programs of the old member countries to their own nationals. It is true

⁶ The number does not include jobs that disappeared for geographical reasons.

⁷ See Wildasin (1991) and Sinn (1988).

that the EU currently applies the residence principle for welfare payments, which means that an EU citizen is entitled to receive welfare in the country he lives in and not in the country he comes from. However, this principle could easily be changed to a home country principle, according to which welfare claims would always be directed towards the country of nationality, regardless of where a person resides. The home country principle would in any case be a useful tool for the EU to prevent the forces of systems competition from eroding the welfare state and would be a precondition for a true and full realization of the four basic liberties of the EU treaty⁸.

Even with the home country principle, free migration could be a problem however if the migrants replaced part of the existing work force which would then be entitled to the support of the welfare state. To avoid this replacement effect it is necessary to make the labor markets in the EU more flexible. The conditions for receiving unemployment benefits, welfare payments, early retirement schemes, and other subsidies for not working would have to become stricter, and the payments as such would have to be curtailed. If the governments used the funds saved to provide employment subsidies for low paid workers, the necessary flexibility in the labor markets could be achieved without sacrificing social objectives.

Replacing ordinary welfare payments with wage subsidies, and the residence principle with the home country principle, would be the essential ingredients of a successful policy of preparing the old member countries for the migration wave to be expected after EU enlargement and would allow the welfare gain from free migration analysed in this paper to materialize.

⁸ See Sinn (1990).

References

- Abel, A., and O. Blanchard (1983), "An Intertemporal Model of Investment and Savings," *Econometrica* 51, pp. 675-692.
- Sinn, G., and H.-W. Sinn (1991), *Kaltstart. Volkswirtschaftliche Probleme der deutschen Vereinigung*, J.C.B. Mohr (Paul Siebeck): Tübingen; English translation: *Jumpstart. The Economic Unification of Germany*, MIT Press: Cambridge, Mass. 1992 .
- Sinn, H.-W. (1988), "The Sahel Problem," *Kyklos* 41, pp. 187-213.
- Sinn, H.-W. (1990), "Tax Harmonization and Tax Competition in Europe," *European Economic Review* 34, pp. 489-504.
- Wildasin, D. (1991), "Income Redistribution in a Common Labor Market," *American Economic Review* 81, pp. 757-774.