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TWO MEZZOGIORNOS

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ABSTRACT

The analogy between the economic problems of the Mezzogiorno region and East Germany has been initially contested by many authors. This paper argues that there are striking similarities in the two regions, in terms of the causes of their economic predicament. With an aggregate labour productivity of 55% relative to the rest of the country, both are true transfer economies, whose consumption exceeds production by far. Beyond locational disadvantages, the present paper identifies overdrawn wages, high social security spending and the Dutch disease problem as core reasons for the poor economic performance and discusses possible cures.

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1. The old and the new Mezzogiorno

The economic problems of the Italian Mezzogiorno are well known and have been extensively studied by many authors.[1] Despite massive aid from the north, the economy of the south does not seem to catch up with the north. Its economy lags behind and is unable to develop the kind of productivity that would enable it to successfully compete with other regions in Europe. By way of contrast, the north has performed marvellously. Lombardia, Emilia Romagna, Trentino-Alto Adige and Valle d'Aosta are now among the highly productive regions of Europe, matching regions like Rheinland-Pfalz, Haute-Normandie or Noord-Brabant.[2]

There now seems to be a second Mezzogiorno – East Germany. After German reunification many authors asked themselves whether a comparison between East Germany and the Mezzogiorno was justified, but they typically came to a negative conclusion.[3] The initial growth performance of east Germany after unification was so promising that a comparison with the Mezzogiorno seemed far fetched. Today, however, time has brought more evidence. The evidence shows that the fundamental differences between Italy's south and Germany's east that some authors had expected initially, have not materialised. In fact, as this paper will argue, there is a striking similarity between the two regions both in terms of the characteristics and the causes of the economic problems from which they suffer.

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[1] See Prasad and Utili (1998), Boltho et al. (1997), Taylor and Bradley (1997), Faini , Galli, Gennari and Rossi (1997), Bertola and Ichino (1995), Castronuovo (1992) and Panther (1991).
[2] Eurostat, Press Release of February 3rd,2000.
[3] See Panther (1991).

2. Historic Differences and Present Similarities

Different Histories

In order to place the problem in the right perspective, a look at the history is useful. From a historical point of view it would be hard to find any two regions in Europe that were as different as east Germany and southern Italy were before the second world war.[4] At the time, southern Italy was a predominantly agrarian region with an agricultural share in the work force of about 56% in 1936, and its per capita income was 60% of that of the rest of Italy, the Centro Nord[5]. East Germany (using today's definition), on the other hand was more productive than west Germany with an agricultural share of only 22,1% and a per capita income of 27% above that of West Germany. In fact, east Germany was most productive region of continental Europe, hosting some of the world's most advanced firms in the areas of precision engineering, optics, chemicals and aircraft production.

[4] In this paper we define east Germany as the former territory of the GDR (East Berlin, Mecklenburg-Vorpommern, Sachsen, Thüringen, Sachsen-Anhalt, Brandenburg) and west Germany as the remaining parts of Germany in today's boundaries. Similarly, southern Italy (the Italian Mezzogiorno) is defined as the provinces of Abruzzo, Molise, Campania, Puglia, Basilicata, Calabria, Sicilia and Sardegna and "northern" Italy or the "Centro Nord" as the rest of Italy, again in its current borders.

[5] See Zamagni (1993).

Table 1: *Southern Italy and east Germany before the War*

GDP per capita in US$ (at 1937 prices)

Country	GDP per capita (1937)
Germany	340
West	324
East	413 (=127% of West)
Italy	135
Centro Nord	157
Mezzogiorno	94 (=60% of Centro Nord)
Bulgaria	75
Czechoslovakia	170
Hungary	120
Poland	100
Romania	81
Yugoslavia	80
USA	570
France	265
United Kingdom	440

Sources: Kaser and Radice (1985, S.372), Williamson, J.G. (1965, S. 68-70) and own calculations.

After the war, east Germany became the industrial showcase of the eastern bloc, with an enormously high labour share of manufacturing in the order of 34%. By contrast, the corresponding manufacturing share in southern Italy was only about 20%.

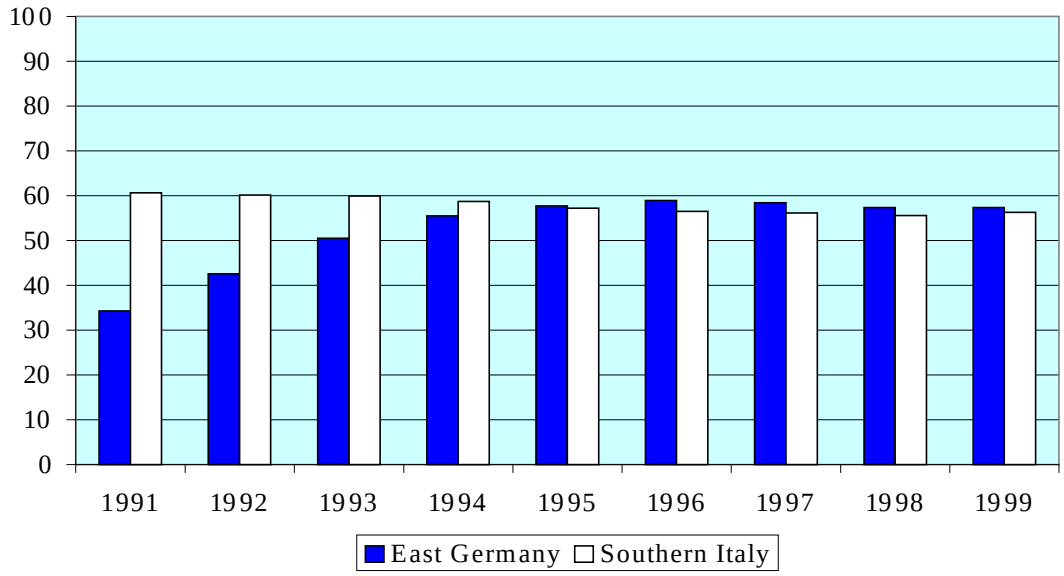
Low per Capita Output, Low Growth and no Visible Convergence

Given these historical differences, it would be more than surprising if the two regions were similar today. Yet, they are. The most striking similarity is shown in figure 1 which illustrates the labour productivity aggregates in the two regions relative to the rest of their respective countries for all years for which common data are available. While south Italian labour

productivity has been slightly below 60% with a declining tendency over the period considered, east German productivity was very low in 1991, but increased rapidly thereafter. This rapid increase induced the initial optimism among the politicians and some economists. Currently, however, no further increase is visible. Since 1996, where aggregate labour productivity peaked at 59%, the level has not increased any further and is even declining. In fact, it seems that both Mezzogiornos' productivity figures have been unable to permanently exceed the 60%-level. Of course, no one knows whether this is mere chance and how the future will be. However, at present, no change in this situation is visible.

Figure 1: *Aggregate labour productivity relative to rest of country*[6]

(in terms of GDP/population at working age)



Sources: Associazione per lo Sviluppo dell'Industria nel Mezzogiorno (SVIMEZ): Conti economici delle regioni italiane 1970-98.

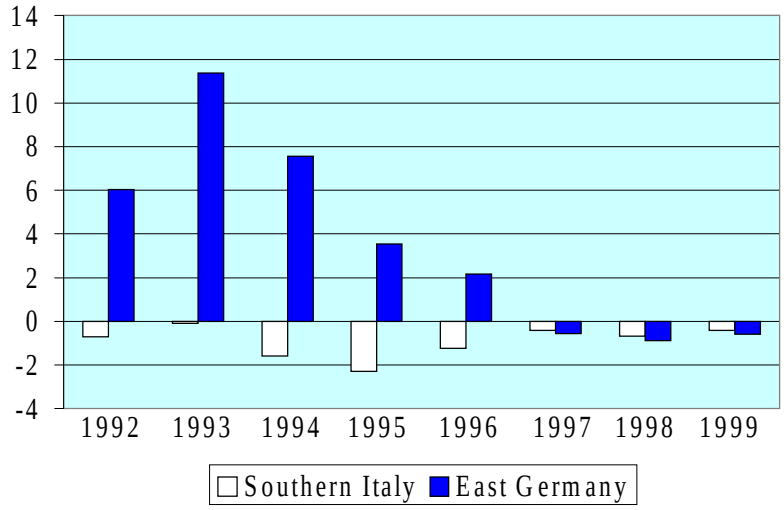
The halt in convergence is also demonstrated in figure 2 which compares the growth, or better shrinking rates of the two Mezzogiornos relative to the rest of their respective

[6] In 2000, Germany's system of national accounts has been changed in a way which makes it more difficult to trace the productivity figures back to the former communist region, because the two parts of Berlin are no longer distinguished. The quoted figures were recalculated from the new GEP figures on the basis of the old borders by the ifo Institute.

countries, again for all years for which common data are available. The figure shows that, over the last four years, the respective regions have drifted away from the more productive parts of their countries rather that converging with them.

Figure 2: "*Convergence" rates of the two Mezzogiornos with rest of respective countries*

(Difference in growth rates between east and west Germany and between southern Italy and Centro Nord)



Sources: Associazione per lo Sviluppo dell'Industria nel Mezzogiorno (SVIMEZ): Conti economici delle regioni italiane 1970-98 and own calculations.

The time period for east Germany is too short to be sure about a lack of convergence. However, in the Italian case, sufficient information is available. In the 1950ies the Italian Mezzogiorno had shown a substantial amount of growth, allowing for some sort of catching up process. However, thereafter, from about 1960 – the introduction of the "erga omnes" wages rule -- no further convergence has been visible. To provide harder evidence of this fact, we applied a statistical test based on unit root procedures looking at the time path in the cross regional differences in real per capita income. Taking all available data from 1970 – 1998 into account, we reject the hypothesis of convergence. In fact, we find that there is a significant

time trend in the output differences which implies that the two regions have been drifting apart. The appendix explains the details of our test.

Transfer Economies

The low productivity of the two Mezzogiornos would result in huge income differentials relative to the more developed parts of their countries, if the two regions had to live on their own. However, substantial fiscal transfers via central budgets have effectively reduced the size of these differentials.

In Germany, the main fiscal transfers flow via the social security system since unification not only brought the same currency and the same economic laws, but also the integration into the same social health, pension and unemployment systems. More than 60% of all transfers fall into these categories. In addition, the Solidarpakt Ost defined a financial transfer among the Länder in the order of 32% of the total or currently about 25 billion € per year. Other advantages result from special tax allowances and federal expenses on east German infrastructure. In total, an annual sum of about 70 billion €, or about 5000 € per inhabitant, is currently given to east Germany. In the first decade after unification, a total net resource transfer of about 750 billion € has been transferred to the east.

Germany had hesitated to increase taxes to finance these transfers. It is true that there is a solidarity tax charged on everyone, but its revenue is only 10.25 billion € per year, not more than 14% of the annual total. Most of the funds channelled to the east have been borrowed in the capital market. This is probably the major reason for the high German interest rates and the breakdown of the EMS in 1992 (see Sinn 1999), and it explains why Germany was unable to meet the Maastricht debt criterion. The west German public debt was about 450 billion € in 1989. Now the total German public debt is 1.15 trillion €.

Table 2: *Public resource transfers from west to east Germany*

(bill. €)

Economic promotion, infrastructure, improvement of general living conditions	20.9
Treuhand	0.6
Social expenditure	46.1
Financial aid to Länder and Gemeinden (Solidarpakt Ost)	24.5
Other (defence, personal cost, etc.)	8.4
Revenue flows from East to West (-)	-26.0
Total	75.5

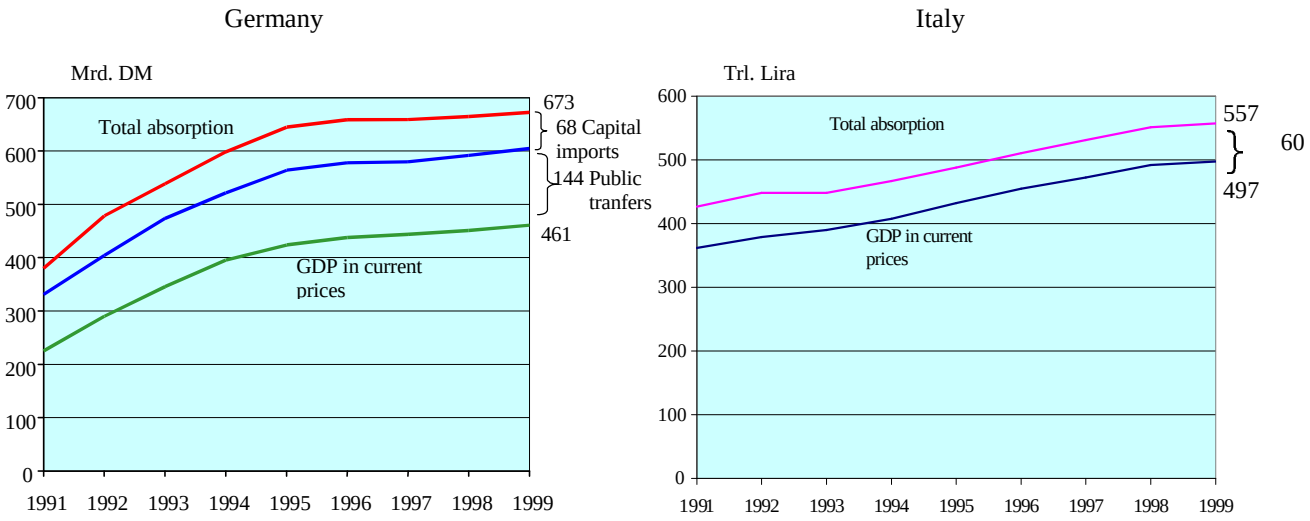
Source: Bundesministerium der Finanzen, 1998, homepage.

In Italy, there are various channels for transfers from the north to the south, but as Italy is not a federal state, the transfers are not regularly documented. In 1987, the Bank of Italy estimated the net transfers from the Centro-Nord to the Mezzogiorno to amount to 35 bill. Euro. Galli and Onado (1990) estimate the transfers to amount to 43 bill. Euro in 1988. Although there is the *Patto di Stabilita Interno* which resembles the German *Länder-Finanzausgleich*, Faini and Galli (1993) argue that most funds are channelled in a hidden way through the federal budget. Minimum pensions, the national health service, unemployment insurance and public expenditures which are financed by the federal government are probably the major redistribution mechanisms. Faini and Galli (1993) further point out that financial subsidies to investment, first introduced in the 1960s, have reduced the cost of long term capital in Southern manufacturing by about 40%. There are even more indirect transfers than these. For example, public firms have to invest most of their funds in southern Italy and, according to Alesina et. al. (1999), public employment also plays a major role in the redistribution process. In fact, while the shares of employees in the government sector are

between 12% and 15% in Central Nord, the Mezzogiorno has a share of 22 %.[7] Expressed as public employees per resident in working age (between 15 and 65 years of age), the numbers are less dramatic, but point in the same direction. While in the north of Italy, there are 6.5 public employees per resident, the equivalent figure for the south is 8 - thus public employment in the South is about 20% higher than in the north. By contrast, east Germany has only a government share which is three percentage points more than in the west. Recently, the internal Italian subsidies have gone down and have partly been replaced with EU subsidies, which in 1999 amounted to about 3 billion €.

[7] ISTAT, 1996, Ministero del Tesoro.

Figure 3: *Absorption, GDP and import surplus*



Sources: SVIMEZ, German Statistical office, Ministry of Economics, German Institute for Economic Research and German National Bank.

Note: The official absorption statistics for Germany are available only until 1994. In the subsequent years, absorption has been calculated from the official GDP and transfer figures by adding an estimate of the private capital import based on Ifo's investment data base.

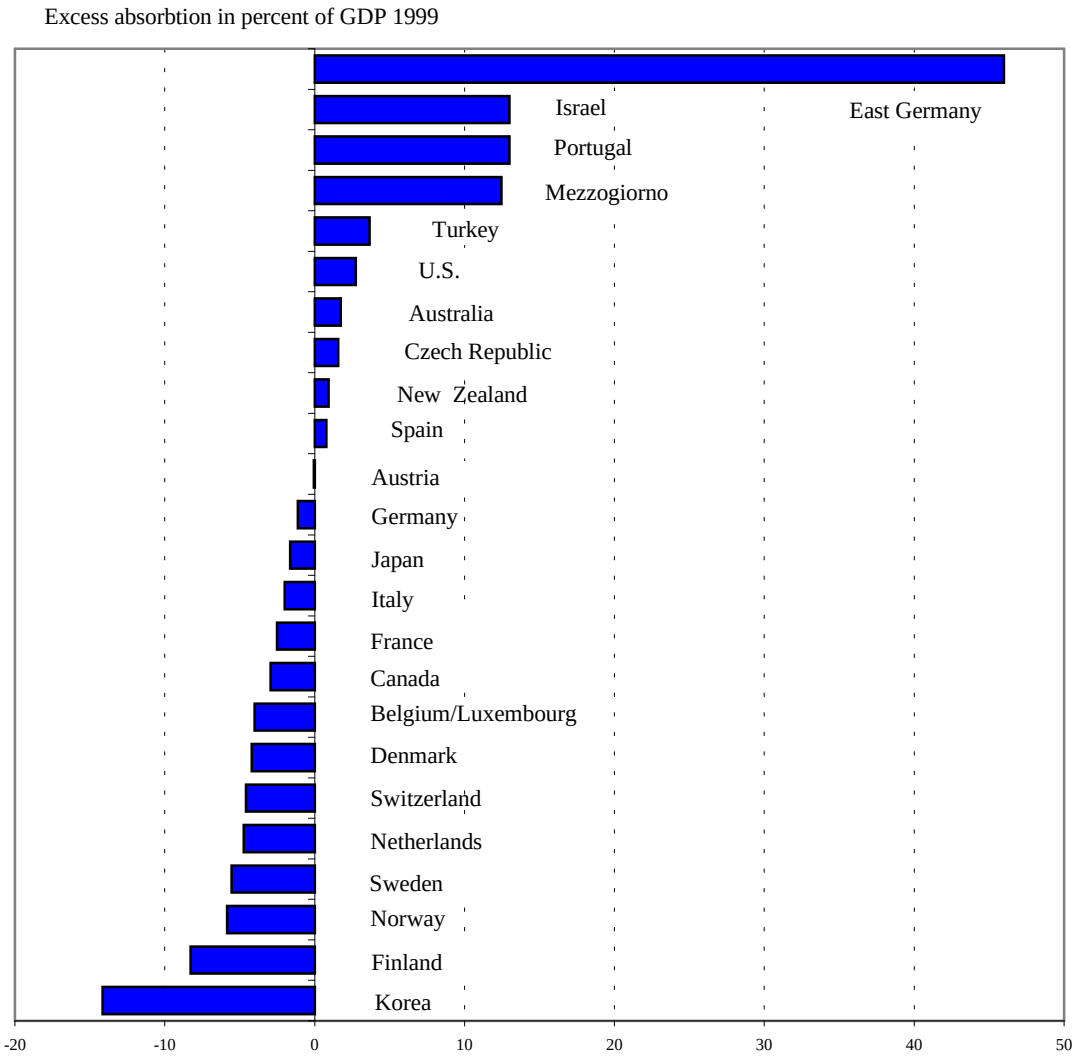
The public transfers and private capital movements made it possible for the people living in the Mezzogiornos to consume more than they produced. Figure 3 shows the time paths of aggregate absorption – the resources consumed by private households, firms and the government – and GDP. The difference between these two variables is the import surplus. The figures also demonstrate, how much of this surplus is financed with public transfers and private capital flows.[8] In the east German case, the import surplus is currently about 46% of east German GDP, and in the Italian case its is about 12% of south Italian GDP.

The two regions' dependency on resource imports is extraordinary. Figure 4 ranks different countries and regions of the world with regard to their respective net import shares in GDP. It can be seen that east Germany, in particular, contrasts sharply with the others depicted in the figure. Southern Italy, on the other hand resembles economies like Israel and

[8] In the East German case private capital flows comprise about 3,5 billion € borrowed by east German government bodies.

Portugal which are heavily financed by the US and the EU. The Italian Mezzogiorno is a veritable transfer economy, but it has found its master with its German counterpart. In the Italian Mezzogiorno every seventh Lira spent comes from the north, but in east Germany every third deutschmark comes from the west.

Figure 4: *Import surpluses of different regions and countries*



Sources: OECD Economic outlook, SVIMEZ, German Statistical office, Ministry of Economics, German Institute for Economic Research and German National Bank

Obviously, the south Italian reliance on external resources is much smaller than the east German one if compared to the south Italian GDP. However, southern Italy is relatively much larger than east Germany. While east Germany is inhabited by 18% of the German population, southern Italy includes 36% of the total Italian population. Moreover, the private capital import to southern Italy is less important than the private capital import to east Germany which is still is heavily subsidised. These two aspects explain why the order of magnitude of the resource transfers appears more similar when the transfers are related to the GDP of the paying region rather than that of the recipient region. While internal German public and private transfers comprise 6.2% of the west German GDP, the internal Italian transfers amount to 4.2% of north Italian GDP.

It is not surprising that transfer economies have high incomes despite their low productivity. In 1997 east German disposable household income per capita was 85% of the west German one, and southern Italy's disposable income per capita was 65% of the respective figure in Centro Nord. Pensions are even 10% higher in east than in west Germany because more women were working in the communist state and because the GDR pension claims had been converted with overly generous terms.[9]

3. The Reasons

The lack of productivity convergence between the Mezzogiornos and the more developed north of Italy and west of Germany cannot easily be explained with a primitive two-factor variant of the neo-classical model. Operating in the same country implies the same legal system and full access to the technological knowledge which is available in the more developed region. Thus, the production function should be the same and, with constant returns

[9] See Nierhaus (1999).

to scale, capital and labour movements imply equal factor prices. Equal factor prices, in turn, imply equal capital intensities and equal labour productivities.

When the neo-classical model is enriched with location preferences of the population and capital adjustment costs, it will not imply an immediate convergence, but a gradual convergence with two sided guest-worker flows during the adjustment phase, which in the end will also lead to a full equalisation of factor prices and productivities.[10] So, why is it then that convergence does not occur?

Locational Disadvantages

To find an answer, a yet more extended version of the neo-classical model could be considered where land and similar idiosyncratic location factors are taken into account, which cannot be altered. If a region has a worse location than another one, say, because its transport costs to existing centres are high and/or its infrastructure is bad, it will have a lower "total" factor productivity with regard to capital and labour. In the case of location preferences of the labour force, this will imply a low capital intensity of production, a low labour productivity and low wages.

Such a situation could apply in the two Mezzogiornos which are both located at the outskirts of the EU and are still lacking in adequate quality of their local infrastructure. If it prevails and if a steady state growth path with a constant regional structure prevails, investment per capita will be lower than in the rest of the country. The lower level of per capita investment will not have to show up in terms of construction investment, because local land prices are low, but in terms of low levels of equipment investment which consists mainly of traded commodities.

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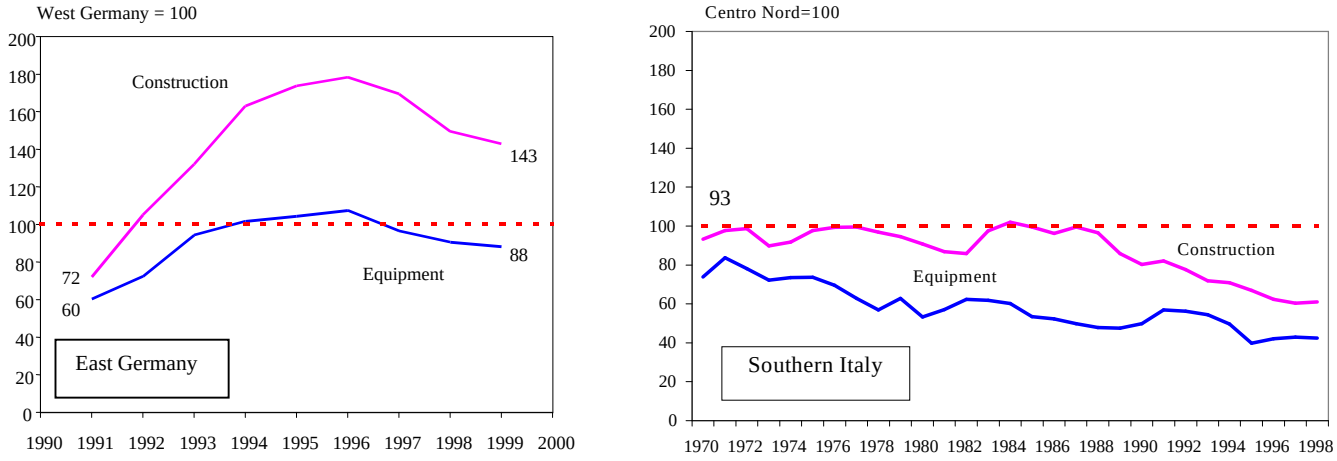
[10] See Sinn (2000). Ordinary neo-classical growth models of the Solow or „endogenous growth" variety are not well suited to studying regional convergence, because they abstract from labour migration and assume an internal capital formation from domestic savings rather than capital movements.

Figure 5 illustrates the time paths of construction and equipment investment in the two Mezzogiornos. The figure shows that east Germany is performing much better than southern Italy, with an impressive level of construction investment and substantially more equipment investment. However, recently even the east German equipment investment per capita has fallen significantly below the west German value, indicating a clear halt in convergence of the relative capital endowments. In southern Italy equipment investment was only about 40% of that in northern Italy, and in east Germany it was about 88% of that in west Germany.

Figure 5: *Per capita investment in construction and equipment relative to developed region*

(in terms of investment/population in working age)



Sources: SVIMEZ, Statistisches Bundesamt 2000, Fachserie 18 (Investitionen in Bauten); ifo Investorenrechnung; Statistisches Bundesamt 1999 Fachserie 1, Reihe 4.1.1 (Erwerbsfähige); Müller (2000). Investment in equipment for Germany 1999: estimate of the ifo Institute.

Unemployment

Roughly speaking, the observed level of investment seems to be compatible with the neo-classical model thus described. Note, however, that the neo-classical model would predict full

employment. The low wage would imply a low population density, since many natives would work and live in other regions, but it would not imply unemployment. As table 3 shows, this prediction is not compatible with reality, though. In the Italian Mezzogiorno, unemployment is 22%, but in the north it is only 6,5%, and the respective figures for east and west Germany are 17,2% and 8,2%. Obviously the two Mezzogiornos do have severe employment problems.

Table 3: Unemployment rates in 1999 (%)

	Mezzogiorno/east	Centro Nord /west
Italy	22.0	6.5
Germany	17.2	8.2

Sources: SVIMEZ and Bundesanstalt für Arbeit.

The neo-classical model can explain unemployment with wages that exceed the market clearing level, and under the assumptions made it would be sufficient for such an outcome if the Mezzogiorno wage were equal to the wage in the region with the better location conditions. The high wage creates unemployment, which, because of the Harris-Todardo argument, prevails in a migration equilibrium. It drives capital away, and although it tends to increase the capital intensity inside the firms, it further reduces the aggregate capital intensity and the aggregate labour productivity in terms of the number of people in working age.

Proxy Negotiations

The question remains why wages have been set at a level above the market clearing wage. Surprisingly, the answers for the two Mezzogiornos are very similar indeed.

In Italy, regions could set their wages separately during the fifties and early sixties, and this was the time when the south showed signs of catching up with the north. However, in

the late sixties, trade unions gained power (in the autunno caldo movement) and succeeded in equalising the wages throughout Italy in collective nation-wide wage agreements.[11] The system of nation-wide wage formation has been operating since then and has effectively equalised union wages in the north and the south. In 1999, the system was modified by reintroducing the possibility of regional wage differentiation, but as of today this modification has not had any influence.

In east Germany, wages were only about one third of those in the west after the German currency union in 1990, but the subsequent wage negotiations brought about a rapid wage adjustment, even though Germany's collective wage bargaining is carried out on a regional rather than national level. The reason why the German negotiations nevertheless resulted in a wage adjustment lies in the fact that it was the west German competitors of the east German firms that had effectively taken over the task of negotiating the east German wages. In 1991, when the decisive wage settlements took place, the Treuhand agency had just started to privatise the ex-communist economy, and at that time there were no private entrepreneurs who could have participated in the wage negotiations. Thus west German employers stepped in as proxy negotiators. Moreover, the newly founded unions were under full western control. Thus, in the negotiations westerners sat at both sides of the tables, and they unanimously agreed to fully equalise the union wages as quickly as possible, which basically meant tripling them. They even agreed to unusual five-year contracts which fully specified the wage equalisation path in order to bind future east German firms and to effectively prevent them from threatening their markets.

It is unclear to the authors whether similar motives were driving the collective negotiations in Italy, too. However, it seems plausible to assume, given that the wage had to be uniform, that the employers and unions of the north had a much larger influence on the

[11] See Attanasio and Padoa Schioppa (1991).

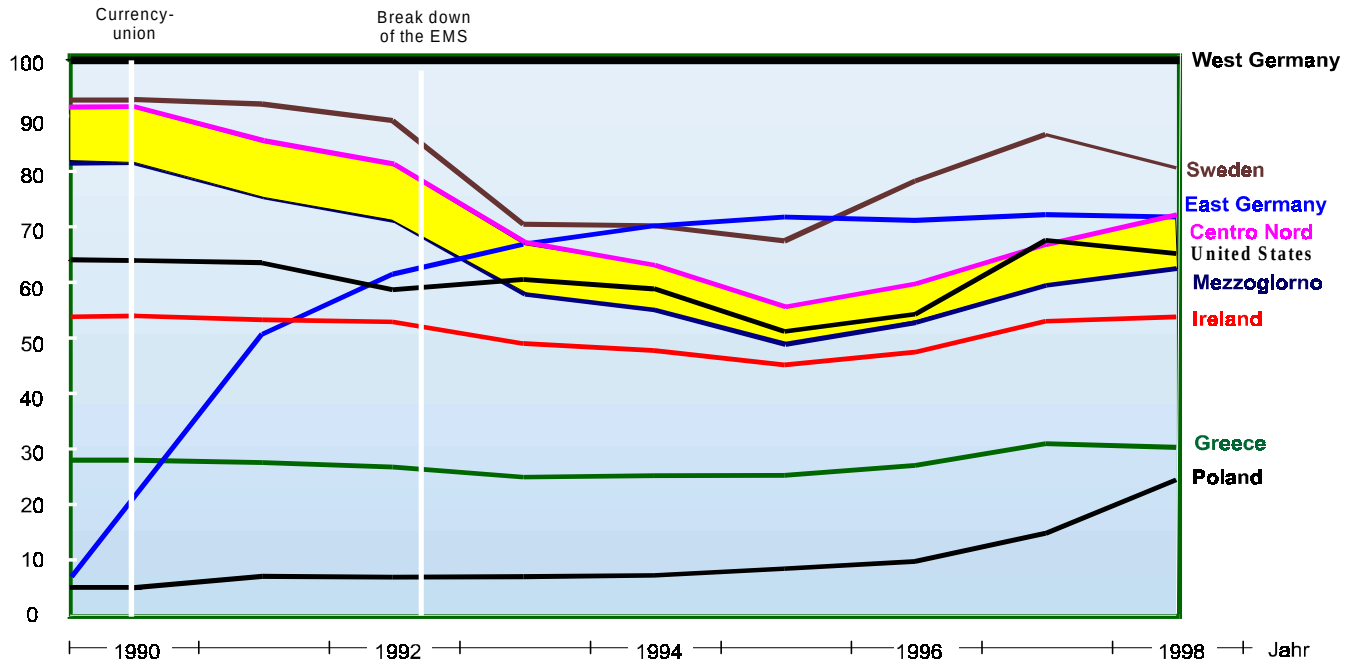
determination of the Italian wages than those of the south and that they followed their own objectives, disregarding the problems of the Mezzogiorno.

Overdrawn Wages

The implications of the Italian and German wage negotiations are shown in figure 6, which gives the time paths of hourly wage cost in manufacturing for different countries and regions. In this figure, the west German wage cost in manufacturing is set equal to 100, since it is the highest in the world. All other wage costs are expressed in relation to the German one.

Figure 6: *Hourly wage cost in manufacturing relative to west German cost*

(At current exchange rates)



Source: OECD, *Main Economic Indicators* (various issues); Statistisches Bundesamt, *Fachserie 16, Reihe 5*, (various issues, Tabelle 1.1: Index der durchschnittlichen Bruttostundenverdienste der Arbeiter im Verarbeitenden Gewerbe); *Economics of Transition* Vol.4 (2), 1996, table 6, S. 543 (Wages and salaries for Poland 1990-95); Deutsche Bundesbank, *Monatsbericht*, (various issues); Statistisches Bundesamt, *Statistisches Jahrbuch*.

The figure shows that east German wages have increased dramatically in the last decade although a full equalisation of actual wages has not taken place. Before unification, the east German wage cost in manufacturing was 7% of the west German wage, when calculated at the then prevailing exchange rate. Now it is over 70%. Wages were quadrupled by the one-to-one currency conversion in 1990 because this was an effective revaluation by the factor 4.3. And thereafter they were tripled in the proxy negotiations which did not, however, the for reasons explained below, fully affect the actual wages. No economy in the world could have survived the a ten-fold increase in the relative wage that was experienced by east Germany in only ten years. It should be stressed that the figure refers to the manufacturing sector whose wages are more moderate than those of others because the

competitive pressure is higher. In the government sector and elsewhere actual wages have reached about 85% of those in the west.

That the east German wage policy was beyond all economic reason, can best be seen by comparing the east German wages with those of other countries. The figure shows that the east German wages surpassed the Irish wages as early as 1991 although the east German economy had nearly completely collapsed in a depression that was much more severe than the great depression at the end of the twenties. In 1992 when the German depression still was pronounced the east German wage curve cut the US wage curve, and in 1992/1993 it even cut the south and north Italian wage curves. The Swedish wage curve was hit in 1995, but due to a recovery of the Swedish crown east German wages have remained below the Swedish ones since then.

The Italian wages were, on average, at about 80% of the West German wages in the beginning of the nineties when a thousand lira cost about 1,40 deutschmarks, but with the collapse of the EMS in 1992 the value of the lira began to sink down to a minimum of about 0,82 deutschmarks in 1995. Also the Scala mobile was abolished in that year which allowed real wages to fall. Both effects reduced the wages to about 50% of the German wages and boosted the competitiveness of the Italian economy. Since then the south and north Italian wages have come up again and are now at 62% and 72%, respectively, of the west German ones.

Through the period considered the wage gap between northern and southern Italy has remained at about 15% of the northern level. As in Germany, this gap is probably due to the fact that north Italian wages exceed the nation-wide union wages on average, while south Italian wages are rather close to the union wages.

It is remarkable, though, that the wage gap between east and west Germany is about twice as large as the gap between the two Italian regions considered. In west Germany there is a gap between union and actual wages of about 15% . With a zero gap in the east, this in itself

would have resulted in a wage convergence to 85% of the western level, just as in Italy. The reason why the gap is much larger than this lies in the fact that east German firms found a way to avoid the union wages altogether. Most of the new firms founded in east Germany after 1991 decided not to join the employers unions in order not to be covered by the initial wage agreements, and many other firms have simply violated the wage contracts with the tacit agreement of the unions. Many firms went bankrupt and were founded again as new legal entities in order to circumvent the binding power of the collective wage contracts. The result is that currently about 85% of east German firms and more than 55% of east German employees have wage contracts below the union wages. The economy has found a way to partly heal the initial mistakes. Nevertheless, the initial wage agreements and the supportive public statements by politicians have been able to catapult the east German wages to where they are now and if only for psychological reasons it will be hardly possible to return to more moderate wages in the near future.

As was shown in figure 1, the two Mezzogiornos both have an aggregate productivity which is less than 60% of the respective productivity in the more advanced parts of the two countries. Thus, it seems, the wages should also stand at the 60%. However they do not. The east German wages are more than 70% of the west German ones and the south Italian wages are 85% of the north Italian ones. This is the problem

That the wages are too high becomes particularly obvious when the Irish situation is considered. Thirty years ago, when Ireland joined the EU, Ireland had a GDP per capita which was only a quarter of that of Germany. Today it has reached about 90 percent of the German GDP. Ireland is the fastest growing region in the EU with real growth rates of about 8% per year. The Irish GDP per capita of the population in working age is currently 80% more than the respective figure in southern Italy and 46% more than the east German value, but the Irish wage cost per hour is only 85% of the respective south Italian figure and only 76% of the

east German one. It is clear why Ireland is a much better location for mobile capital than southern Italy or east Germany and why its general economic performance is so much better.

4. Dutch Disease in Italy and Germany

Despite the possibility of explaining the combination of low productivity, high wages and a lack of convergence as a long-run equilibrium phenomenon, it is not clear that the situation will always be like that. After all, as already mentioned, Italy has allowed regional wage differentiation in 1999, and in east Germany an increasing number of firms simply quit the employers' associations. This new development will bring more dynamism to the labour markets whose consequences will have to be guarded.

Unfortunately, however, there is at least one important reason why optimistic expectations do not seem to be justified at this stage. This is the existence of the welfare state which, as was explained above, is channelling vast amounts of resources into the two retarding regions. The welfare transfers are partly motivated by the wish to compensate for the regional disadvantages, partly they are the seemingly self-evident implication of nation-wide social security systems. But whatever their causes, they effectively change the incentive structure in the economy and draw human resources away from productive activities towards others for which the government is willing to pay. This may involve rent seeking with public projects and criminal activities, but the most important element undoubtedly is the direct repercussion on the labour market. In Germany, early retirement schemes, unemployment benefits, retraining programmes and, in particular, social welfare, have to be mentioned, which all have effectively increased the reservation wage and pulled parts of the labour force away from the regular labour market. In Italy the situation is very similar, but the emphasis is on different aspects of the welfare system.

In Italy the pension system has a particularly strong diverting effect on the labour market, because the rules under which early retirement is possible are very generous. While in

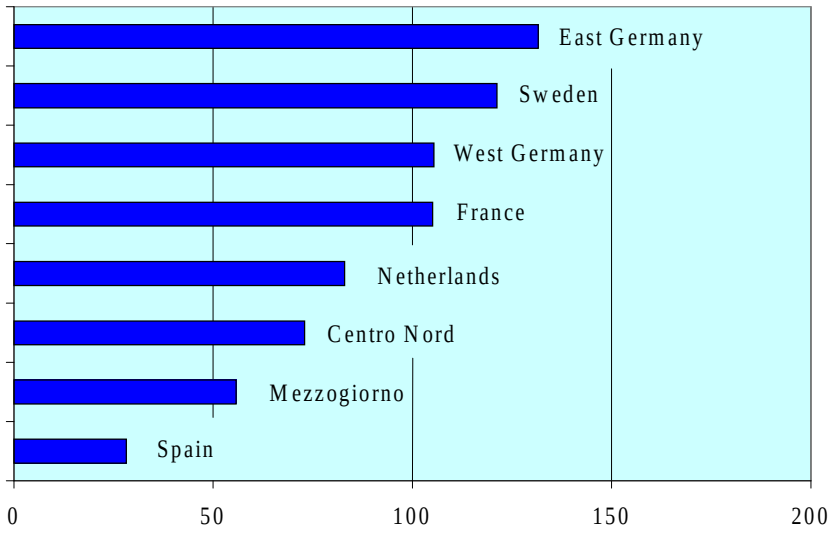
Germany two thirds of the population between 55 and 64 years of age are still working, in Italy, this share is only 43%. On the other hand, unemployment benefits are paid in Italy only for a relatively short time period of up to 6 months. In Germany, the maximum number of months is 32, which is two and a half years.

In Germany, social aid programmes are a particular problem since they implicitly define a minimum wage income below which no one is willing to work. In east Germany, an individual receives about 9,416 € per year, and a family of five receives 16,022 €, and in west Germany the figures are even slightly higher. In a country where the annual average wage income net of taxes and social security contributions is about 16,000 € these figures are definitely too high. It is impossible to run a market economy when the minimum income guaranteed through the welfare system is equal to the average net-of-tax wage income.

To gain a more systematic overview of the problem, figure 7 offers an international comparison which contrasts the social aid level for a family of five with the respective country's or region's average net wage income. The figure confirms the impression that the problem is particularly severe in east Germany, where social aid is at a record level. In Italy, by contrast, the share of wages in social aid is rather small by international standards.

Figure 7*: Share of social aid in net wage income in various countries*

(Social assistance received by a family of five per month as of 1 January 1998, in €.)



Source: OECD, Economic Outlook 1999; Bundesministerium für Arbeit und Sozialordnung; ifo Institute and CESifo Data Base for Institutional Comparisons in Europe (DICE).
Note: The tax burden of a family of five was computed as the income tax plus employee social security contributions less cash benefits and was deducted from gross wages to obtain the net wage income. The gross income is that of an average worker in manufacturing.

With regard to the private industry the disincentives created by the public transfers to southern Italy and east Germany are very similar to the Dutch disease phenomenon which was intensely discussed by economists in the early eighties.[12] If a country detects a large quantity of natural resources, which it can sell on the world market, the domestic currency tends to appreciate, and with rising wages some of the labour force is relocated to the resource sector. The international competitiveness of the manufacturing sector falls, and resource exports crowd out commodity exports produced by that sector.

It is true that none of the two Mezzogiornos enjoy an abundance of natural resources, and they do not have a separate currency either. The effects observed in the Dutch disease case nevertheless reappear. For one thing, it does not matter whether a region receives a gift of nature or a gift from another region. The inflow of financial funds has similar

[12] See Bruno and Sachs (1982) and Van Wijnbergen (19684 a and b).

consequences. For another, the terms of trade effect does not need a formal currency appreciation. It may also be brought about by internal price adjustments.

In the case of the two Mezzogiornos the various types of idleness – from retirement via sickness and unemployment to laziness -- which are financed with the social transfers are similar to the occupation in the resource sector, and the appreciation shows up in the increase of the wage rate and the prices of land and non-traded commodities resulting therefrom. These effects may perpetuate the problems discussed in the previous section despite the new flexibility of wages resulting from most recent developments.

As was mentioned, in Holland the resource sales crowded out some of the export-intensive manufacturing industry. Table 4 shows that this aspect too, has its analogy in the two Mezzogiornos. The table compares the sectoral composition of employment in the four regions considered and reports the differences in the respective percentage points of employment shares. It shows that, relative to the north, southern Italy lacks 7 percentage points of manufacturing employment and, relative to the west, east Germany lacks about 10 percentage points. The latter is particularly alarming if it is considered that, during the existence of the GDR, the east German manufacturing share exceeded the west German one by 4.4 percentage points, being one of the highest in the world.[13]

[13] See Sinn and Sinn (1992, p. 41).

Table 4: *The sectoral composition of the privately employed labour forces in the Italian and German regions*

	Centro Nord	Mezzo-giorno	Italian difference	West Germany	East Germany	German difference
Agriculture	0.03	0.10	0.07	0.04	0.03	-0.01
Manufacturing	0.24	0.17	-0.07	0.25	0.15	-0.10
Construction	0.04	0.06	0.02	0.07	0.15	0.08
Services	0.55	0.54	-0.01	0.56	0.55	-0.01
Government	0.13	0.22	0.09	0.08	0.11	0.03

Source: SVIMEZ and Statistisches Bundesamt, Mikrozensus 1999.

This completes the analysis of the causes of the Mezzogiorno problem. It is debatable whether the term “disease” was really appropriate for the Dutch restructuring process, because this process manifested a useful reaction to the new resource situation. However, in the case of southern Italy and east Germany, the term clearly is appropriate for describing what is going on. The artificial wage equalisation and voluminous transfers for non-market activities is a dangerous blend of interventions in the market economy that will prolong the sickness of the Italian and German Mezzogiornos.

5. The Cures

If there is a disease, a cure is needed. One obvious cure is, as explained, decentralised wage bargaining, and it seems that the first steps towards such a system have already been taken in the two countries. It is not enough, however, that the negotiations are shifted from the centre to the provinces. Germany has a system which is based on provinces, and yet this system proved unable to correct the initial mistakes in the proxy negotiations. An arguably better

system is one where only wage guidelines are negotiated on the province level, and where the single companies would then have the right to agree on lower wages if they wished. Thereby, many marginal firms which are at the brink of bankruptcy could be rescued, and new firms could more easily get started. In east Germany, the association of the metal and electric industries of Thuringia has recently negotiated such a revolutionary new wage contract. This might be a good example for others.

Decentralised bargaining would not help very much, however, unless the social system is reformed. In Germany, and to a lesser extent in Italy, social aid is a major problem for the labour market. Currently the system is designed such that the government pays people for being idle, and, as explained, this fact implies that social aid is too high a lower boundary on wages. The alternative is to pay people for working, as is done with the Earned Income Tax Credit of the United States which recently was also introduced in Finland. In Germany the government takes away one deutschmark of aid if the individual earns one additional deutschmark. In the US, the government instead adds 40 cents to every dollar earned up to a certain income target. Unlike the German system this system does not impose a lower boundary on wages but, to the contrary, induces people to actively seek jobs even if they are badly paid, because they can then claim more money from the government. This reduces the wage for unqualified labour and creates jobs. The jobs are created everywhere, in households and firms even without more capital formation. However, when wages are lower, it can be expected that more capital will flow into the region. The overall labour productivity in the sense of GDP per population in working age increases, and at least some productivity convergence can take place.

While the American system is run on such a low scale that it was unable to avoid the problem of the working poor, Italy and Germany could install more generous systems, fitting their social democratic traditions. This system would not necessarily be more expensive than the current one. In fact, it can easily be shown that the government will save

money if the labour demand elasticity is above unity and a total income for unqualified labour equal to the current level of social aid is aimed at. Conversely, if the government is willing to spend the same amount of money on social aid as today, the degree of target achievement for social policies will increase if all people whose wages fall because of the new system receive social aid.

In Italy such a system is less urgent than in Germany not only because social aid is lower relative to wages, but also because black market activities seem to be more common among the recipients of social aid. Black market work is better than no work. Yet, a system that induces black market activities is certainly inferior to one which relies on official labour contracts, because it is unable to fully exploit the benefits of specialisation and economies of large scale.

This remark also applies to the Italian pension system which is hardly sustainable in a country which has the lowest birth rates in the world. The necessary pension cuts enforced by the changing demographic composition of the population could easily be enacted by increasing the retirement age instead of cutting the pension per year. Policemen do not have to retire at 50 to become black market employees of lawyers thereafter.

Apart from decentralised bargaining and the Earned Income Tax Credit, it would probably make sense in Germany and Italy to target the public transfers to infrastructure investment than to social support, because this would help overcome the locational disadvantages which are the ultimate reason why wage equalisation policies have been so harmful.

In 1989 the Italian Prime Minister Andreotti had argued that he liked Germany so much that he preferred having two Germany rather than one. But this applies to Italy as well. Indeed, had there been two Germany and two Italy, the kinds of problems studied in this paper would not have arisen, because neither the artificial wage equalisation nor the problematic resource transfers would have occurred. However, we hope that the reader will

agree with the authors that national unity is a value beyond economics for which it may well be worth sacrificing five percent of GDP. We are sure that the Italians will not demolish Garibaldi's statutes and the Germans will maintain those of Bismarck. After all, there are possibilities of curing the problems as we have shown.

Appendix

A statistical analysis of the time series properties of output differences between the Centro Nord and the Mezzogiorno

This appendix discusses the question of whether the Mezzogiorno converges with northern Italy. Figure 1 clearly illustrates that the per capita incomes of the Centro Nord and Mezzogiorno of Italy are far from having converged to the same levels. This impression is confirmed by Boltho et al (1997) who show that there has been a catching up process of the Mezzogiorno during the fifties, but not during the subsequent decades. They show in a cross section of Mezzogiorno regions that initial conditions only mattered for the growth performance during the 1950's, thus proving evidence of beta-convergence as defined by Barro (1991). The results by Boltho et al (1997) are confirmed by Boldrin and Canova (2000) for several less developed regions in Europe.

However, what is less obvious is whether the time path of the regional differences is moving towards a dynamic steady state where per capita incomes are different or towards a process of divergence in the long run. We will show that the latter is the case, i.e. the two parts of the country are indeed drifting apart.

We apply the recently developed time series approach of Bernard and Durlauf (1996). According to these authors, two series have reached a dynamic steady state if the long term forecasts made at a given date are equal. The two series have thus converged if

$$\lim_{T\to\infty} E(y_{cn}(t+T) - y_{mez}(t+T) \mid \Im_t) = 0 ,$$

where E denotes the expectations operator, y denotes per capita GDP, t, time and $\Im$ denotes the information set a period t. The subscripts *cn* and *mez* indicate the Centro Nord and the Mezzogiorno.

In practice, the test for this definition of convergence amounts to testing whether the cross regional differences in real per capita income are a zero mean stationary stochastic process. This can be done with standard unit root procedures. In order to correct for the small sample bias, inherent in time series studies based on annual data, we employ finite sample critical values suggested by Cheung and Lai (1995).

Previous evidence from time series tests on output convergence is mixed. While Bernard and Durlauf (1995) find only little evidence of output convergence, Cheung and Garcia Pascual (2000) show that some earlier results of non-convergence are attributable to the low power of the unit root test.

In the following we formally test for the presence of a unit roots or deterministic component in the difference of the real per capita income in the Centro Nord and the Mezzogiorno of Italy. The augmented Dickey and Fuller (ADF) test allowing for both an intercept and a time trend is used. Let X_t be the output difference at time *t*. The ADF test is based on the regression equation:

$$\Delta X_t = \mu_0 + \mu_1 t + \alpha X_{t-1} + \alpha_1 \Delta X_{t-1} + ... + \alpha_p \Delta X_{t-p} + \varepsilon_t ,$$

where Δ is the first difference operator and ε_t is an error term. The Akaike information criterion (AIC) is used to determine *p*, the lag parameter. We start with the most general model as given above and subsequently drop insignificant parameters. The results of the regression are reported in table 1 for the aggregate production and 1 a to 1 c for three major sub-sectors.

The clear significance of the constant in table 1, μ_0, reflects the difference in the levels, which are obvious from figure 1. This would be enough to reject the convergence hypothesis according to the definition by Bernard and Durlauf (1996). In a less strict sense, one could still interpret the presence of a constant as evidence in favor of *conditional convergence*. However, we also reject this concept of convergence, because we cannot reject the null hypothesis of a unit root in the series, when looking at the Augmented Dickey Fuller (ADF) test. This implies that changes in the cross country differences of real per capita GDP are permanent shocks and do not die out completely after a certain period of time. Furthermore, the time trend, μ_1, is significant and positive. Although quite small, this implies that the two regions are in fact significantly diverging over time.

Furthermore, it is of interest to understand which sector in the economy is driving the divergence of the two regions. Is the problem of Southern Italy a *sectoral* problem of the agricultural sector, rather than a *regional* problem, as often claimed? Tables 1a-c report the unit root tests for three major sectors of the economies: agriculture, industry and services. Overall, the results indicate that the divergence phenomenon between the two regions is not explained by the agricultural sector, as often argued, but rather by the divergence of output

per unit of labor in the industry sector - the only one with a significant constant and a significant time trend in the output differences. Table 1a shows that the output differences in the agricultural sector and services sector are not significantly different from zero, nor do they display a significant time trend. For the industry sector, on the other hand, both the constant and the time trend are significant. The deterioration of the industrial sector is again a common phenomenon in the Two Mezzogiornos.

Table 1: *Unit Root test results:*
output differences per unit of labour in Mezzogiorno vs. Centro-Nord

	Coefficient	Std. error	t-stat.	P-value
μ_0	0.047*	0.021	2.20	0.037
μ_1	0.003*	0.119	2.70	0.013
α	-0.519*	0.225	-2.30	0.030
α_1	-0.428*	0.159	-2.68	0.013
ADF				0.435

Note: The ADF test statistics calculated from the levels of the annual real per capita GDP data are reported. The lag parameter selected by the Akaike information criterion was equal to one. "*" indicates significance at the five percent level (see Cheung and Lai, 1995).

Table 1a. *output differences per unit of labour in the agriculture sector*

	Coefficient	Std. error	t-stat.	P-value
μ_0	0.043*	0.028	1.53	0.138
μ_1	0.007	0.863	0.85	0.404
α	-0.413	0.241	-1.71	0.100
α_1	-0.524*	0.175	-2.98	0.007
ADF				0.724

Note: see table 1.

Table 1b: *output differences per unit of labour in the industry sector*

	Coefficient	Std. error	t-stat.	P-value
μ_0	0.010*	0.045	2.24	0.034
μ_1	0.017*	0.007	2.34	0.027
α	-0.422*	0.162	-2.60	0.015
ADF				0.296

Note: Note: see table 1.

Table 1c: *output differences per unit of labour in the services sector*

	Coefficient	Std. Error	t-stat.	P-value
μ_0	0.054	0.036	1.52	0.140
μ_1	0.001	0.001	0.94	0.353
α	-0.136	0.107	-1.26	0.218
ADF				0.872

Note: see table 1.

References

Attanasio, O., P., and F. Padoa-Schioppa, 1991, "Regional Inequalities, Migration and Mismatch in Italy, 1960-86," in: F. Padoa-Schioppa, ed., *Mismatch and Labour Mobility*, Cambridge University Press: Cambridge; New York and Melbourne, 237-320.

Alesina, A., S. Danninger and M. Rostagno, 1999, "Redistribution through Public Employment," *IMF Working Paper* 99/177.

Barro, R. J., 1991, "Economic Growth in a Cross-section of Countries," *Quarterly Journal of Economics* 106, 407-443.

Bernard, A. B., and S.N. Durlauf, 1995, "Convergence in International Output," *Journal of Applied Econometrics* 10, 97-108.

Bernard, A.B., and S.N. Durlauf, 1996, "Interpreting Tests of the Convergence Hypothesis," *Journal of Econometrics* 71, 161-174.

Bertola, G., and A. Ichino, 1995, "Crossing the River: A Comparative Perspective of on Italian Employment Dynamics," *Economic Policy* 12, 361-420.

Boldrin, M., and F. Canova, 2000, "Inequality and Convergence: Reconsidering European Regional Policies," *Economic Policy*, forthcoming.

Boltho A., Carlin W., and P. Scaramozzino, 1997, "Will East Germany Become a New Mezzogiorno?" *Journal of Comparative Economics* 24: 241-264.

Bruno, M., und J. Sachs, 1982, "Energy Resource Allocation: A Dynamic Model of the Dutch Disease," *Review of Economic Studies* 49, S.845-859.

Castronuovo, S. A. , 1992, “Mezzogiorno: The Theory of Growth and the Labor Market,” *Journal of Regional Policy* 4, 333-365.

Cheung, Y.-W., and K. S. Lai, 1995, “Lag Order and Critical Values for the Augmented Dickey-Fuller Test,” *Journal of Business & Economic Statistics* 13, 277-80.

Cheung, Y.-W., and A. Garcia Pascual, 2000, “Testing for Output Convergence: A Re-examination,” *CESifo Working Paper* 319.

Faini S., G. Galli, P. Gennari and F. Rossi, 1997, “An Empirical Puzzle: Falling Migration and Growing Unemployment Differential Among Italian Regions,” *European Economic Review* 41, 571-79.

Faini, R., G. Galli and C. Gianni, 1993, “Finance and Developement: The Case of Southern Italy,” in: A. Giovannini, ed., *Finance and Development: Issues and Experience,* Cambridge University Press.

Galli, G., and M. Onado, 1990, “Dualismo territoriale e sistema finanzario,” Banca D’Italia, Numero Speciale die Contributi all’analisi economica del Servizio Studi.

Kaser, M.C., and E.A. Radice, 1985, eds., *The Economic History of Eastern Europe, 1919-1975*, vol.1, Economic Structure and Performance between the two Wars, Clarendon: Oxford.

Nierhaus, W. (1999), “Höhere Rentenanpassungen in Ostdeutschland erforderlich?“ *Ifo Schnelldienst* Nr. 19, S. 20-24.

Panther, S., 1991, “Die ehemalige DDR, Osteuropa und die `Neue Wachstumstheorie‘,“ in: J. Backhaus, ed., *Systemwandel und Reform in östlichen Wirtschaften*, Metropol: Marburg.

Prasad, E. S., and F. Utili, 1998, “The Italian Labor Market: Stylized Facts, Institutions and Directions for Reform,” *IMF Working Paper* 98/42.

Sinn, G., and H.-W. Sinn, 1992, *Jumpstart. The Economic Unification of Germany*, MIT Press: Cambridge, Mass. (First published as Kaltstart, J. C. B. Mohr (Paul Siebeck): Tübingen 1991.

Sinn, H.-W., 1999, "International Implications of German Unification," in: A. Razin and E. Sadka, eds., *The Economics of Globalization*, Cambridge University Press: Cambridge, 33-58.

Sinn, H.-W., 2000, "Germany's Economic Unification: An Assessment after Ten Years," *Review of International Economics*, forthcoming.

Taylor J., and S. Bradley, 1997, "Unemployment in Europe: A Compartive Analysis of Regional Disparities in Germany, Italy and the U.K.," *Kyklos* 50, 221-245.

Williamson, J. G., 1965, *Regional Inequality and the Process of National Development*, University of Chicago Press: Chicago.

Van Wijnbergen, S., 1984a, "The Dutch Disease: A Disease after all?" *Economic Journal* 94, S. 41-55.

Van Wijnbergen, S., 1984b, "Inflation, Employment and the Dutch Disease in Oil-Exporting Countries: A Short-Run Equilibrium Analysis," *Quarterly Journal of Economics* 99, 233-250.

S. Zamagni, V., 1993, *The Economic History of Italy 1860- 1990*, Clarendon Press: Oxford.