

ДЕЛЕНИЕ ЕВРОЗОНЫ НА ЦЕНТР И ПЕРИФЕРИЮ И РОЛЬ МИГРАЦИИ

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Как показали Мюрдаль и Кругман, трудовая миграция способна как углубить, так и сократить существующее разделение на ядро и периферию. Целью настоящей статьи является обсуждение современных миграционных потоков в пределах еврозоны в контексте текущего кризиса. С этой целью обсуждаются и сравниваются друг с другом теоретические модели, а также привлекаются эмпирические данные. Исследуются такие проблемы, как увеличится ли в ближайшем будущем разрыв между ядром и периферией, и что в этом случае может сделать политика. В какой степени регионам и государствам-членам предоставлена возможность повлиять на свое развитие, если учесть, что они были лишены значительного числа инструментов экономической политики? Автор делает вывод прогнозом перспектив развития.

Ключевые слова: разделение на ядро и периферию, кризис Евросоюза, трудовая миграция, региональный рост.

THE EURO-AREA'S CORE-PERIPHERY DIVIDE AND THE ROLE OF MIGRATION

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1. INTRODUCTION

In autumn 2011, German chancellor Angela Merkel famously announced that skilled workers from Spain would be welcome to Germany (Roth, 21.11.2011), referring to the high unemployment rate – especially among the young – in Spain and the shortage of skilled workers in Germany's industrial sector. During the current crisis, migration from the southern to the centrally located member states has indeed increased, possibly alleviating the burden of high unemployment in the former and supplying demanded skills to the latter. However, the supply of skilled labour is an important determinant of economic growth, and in particular of re-

gional economies (Faggian and McCann, 2009). Therefore, the emigration of human capital carriers from the periphery to the economic core may also weaken the former's growth prospects (see Horvat, 2004, or Glytsos, 2006).

Within the European Union, the internal market's four freedoms¹ have also the potential to deepen existing disparities. Since (i) the decision to migrate is made by individuals, and (ii) an economy's production potential is determined by its factor endowment, it is microeconomic decisions that shape macroscopic outcomes. Therefore, although it seems desirable that imbalances

¹ These are the the free movement of goods, capital, services and people.

of labour demand and supply are corrected for through interregional migration, it may as well be that the core experiences a permanent inflow of human capital and for this reason regional disparities prevail. Perhaps the most alarming result of Krugman's (1991a, 1991b) highly influential core-periphery model is to show how migration decisions depend on already established structures in economic space. One of his main results corresponds to an increase in spatial concentration of economic activity if economic integration within an economic system deepens. New economic geography may also be understood as a means to overcome unrealistic results, in which in particular its explanatory power regarding sustaining disparities seems attractive. This view is especially relevant with respect to regional issues as conventional neoclassical growth theory is frequently criticised for its prediction of equalising interregional disparities via factor migration.

This paper argues that factor movement decisions depend on their own prospects, and that neither economic geography nor neoclassical growth theory suggest that factor movement helps to balance out income disparities. Quite the contrary is true as expected wages and profits depend on the interplay of all factors. The current crisis shows signs of increasing spatial inequalities, with the core being relatively well off. From this it follows that despite the European Union's official goals of cohesion and convergence, spatial inequality may increase in the future. The structure of the paper is as follows: The second section briefly discusses factor movement according to model design in new economic geography (NEG) and neoclassical growth theory (NGT). After that, the third section provides empirical data on spatial inequality as well as growth and migration tendencies within the EU. Conclusions and an outlook are given in the final section.

2. THEORY

2.1. Economic Geography

As already discussed by Myrdal (1957), a region becomes more attractive if it already is relatively attractive as a matter of cumulative causation, while the advantages of backward regions (such as cheap labour) are insufficient to offset the agglomeration advantages of the core. The core, which dominates the periphery, is already found in a preferable position. Myrdal (1957) distinguishes centripetal backwash effects from centrifugal spread effects, in which the former describe processes that allow the economic core of a system to absorb factors from the periphery. The three most important effects emerge as consequences of trade, labour migration and investment flows:

- Although prosperity in the core increases demand for goods from the periphery, industrial goods (i.e. goods that incorporate a high share of R&D and human capital costs) are produced in the core.
- Labour migration typically moves from the periphery to the core. Although this process in principle may alleviate unemployment in the periphery, typically it is the well-educated and young – who are not necessarily unemployed – who tend to emigrate from the periphery, leaving the old and less educated behind.
- Investments in physical capital do not necessarily flow to where only little physical capital is currently available. Due to agglomeration effects and the presence of qualified workers (who possibly originate in the periphery), investing in the core may remain more attractive.

All these mechanisms are likely to work in favour of the core and hence deepen already existing spatial inequalities.

By not modelling growth as such but rather the relative development of two regions,

NEG models take the interdependence of regions formally into account. They typically consider open economies between which interaction appears, but such interactions take place at some cost, in which the latter increases with distance. In Krugman's (1991a, 1991b) model, short run equilibrium with respect to wages w corresponds to

$$w_i = \left(Y_i P_i^{\sigma-1} + Y_j \tau^{1-\sigma} P_j^{\sigma-1} \right)^{1/\sigma}, \quad (1)$$

where Y symbolises gross regional product, σ is a parameter, and τ symbolises the all-important transport costs (i.e. barriers on trade). It can be seen that wage is also influenced by the price level

$$P_i = [n_i p_i^{1-\sigma} + n_j (\tau p_j)^{1-\sigma}]^{1/(1-\sigma)},$$

where n is the number of firms, and p represents their products' prices. The model assumes that unskilled labour is immobile, while skilled labour moves to where real wages are higher. Therefore in the long run, the core will benefit from firms' tendency to move to a larger product market to save transport costs, and skilled workers' tendency to move to where the products are being produced to save costs. Put differently, skilled labour (= human capital) will move to where human capital is located:

$$\frac{\partial (H_i / (H_i + H_j))}{\partial t} = \varphi \left(\frac{w_i}{P_i} - \frac{w_j}{P_j} \right), \quad (2)$$

where H is the stock of human capital. Probably the most important finding of the model is that deepening economic integration leads to the spatial concentration of production, which happens in the wake of physical capital relocations and the migration decisions of skilled workers, i.e. suppliers of human capital. Another key feature of the model is that agglomeration, although a macroscopic phe-

nomenon, is caused by microeconomic decisions and "happens as the unintended consequence of the aggregation of a wide range of individual choices" (Combes et al., 2008).

2.2. Neoclassical Theory

Krugman's model is considered to be the beginning of the discipline referred to as new economic geography (Roos, 2002) and has spawned myriads of models which are designed to explain persisting or increasing interregional inequalities. This has also provoked the contrasting juxtapositions of NEG and NCT, although Krugman (2010) himself considers his model as neoclassical. A major progress of NEG in terms of formal modelling was to introduce micro preferences to explain the development of interregional inequalities. However, as explained below, the issue regarding NGT's lack of explanatory power regarding regional development is not that the theory would be inappropriate. But rather, the attempt to deduce conclusions from models such as Solow's (1956) or Mankiw et al.'s (1992) is inappropriate as they were designed to study large economies' growth. In this context, the assumption of a closed economy is sufficiently realistic to study the determinants within large, national economies, but certainly not realistic when it comes to the regions of the European Union. An early attempt of a multiregional neoclassical model is the often cited model by Borts and Stein (1964), in which factor movement has a tendency to equalise factor endowments. Liefner and Schätzl (2012), among others, criticise this neoclassical model for explaining migration solely through wage differences.

Neoclassical growth theory is sometimes misunderstood as predicting convergence to identical output levels, an interpretation that is probably partly due to the influential studies of

Barro and Sala-i-Martin (1992) and the countless studies on convergence that followed (for an overview see Islam, 2003). They as well as other authors argue that regional economies are similar to each other and therefore should converge to each other in terms of production (see Barro and Sala-i-Martin, 1995 and Lopez-Bazo, 2003). This view, however, ignores the fact that regional economies are also more open by nature than national economies and therefore more vulnerable to influences from abroad, or decisions made by a superior administrative unit (i.e. the nation state or the European Union). In contrast, once the interplay of the various production factors is taken into account, it becomes clear that also in a traditional neoclassical setting there is not necessarily a trend of convergence. As shown by Sardadvar (2011, 2012), the inclusion of factor movement – in this case: physical capital – may cause at least a temporary divergence.

If a model allows for the fact that endowments with one factor will attract other factors, which will in turn attract the first factor, then the result may be self-amplifying as well. Let's assume, for instance, a neoclassical production function that features variable returns to scale:

$$Y_i = K_i^\alpha H_i^\beta L_i^\gamma, \quad (3)$$

where K is the stock of physical capital and L is crude labour. If this function is differentiated with respect to any of the three production factors, the result is unambiguously positive. Take, for instance, the first derivative with respect to K :

$$\frac{\partial Y_i}{\partial K_i} = \alpha K_i^{\alpha-1} H_i^\beta L_i^\gamma > 0. \quad (4)$$

Assume that the attractiveness of a region regarding the propensity to migrate depends on its marginal productivity. Then, in the case given above, the more factors a region has al-

ready accumulated, the more attractive it will become for migrating factors:

$$\frac{\partial Y_i / \partial K_i}{\partial H_i} = \alpha \beta K_i^{\alpha-1} H_i^{\beta-1} L_i^\gamma > 0. \quad (5)$$

Therefore the higher the amount of human capital, the higher physical capital's marginal product, and the more attractive the economy is for new investments in physical capital. The same is true for each other production factor in eq. (3). From this it follows that if for some reason one region starts out with higher endowments in each factor, it is also more attractive for potential migrants. In other words, the mechanism is similar to Myrdal's and Krugman's models: The availability of qualified and/or crude labour makes a region more attractive for investments in physical capital. This, in turn, makes the region more attractive for potential immigrants, and so on.

3. EMPIRICS

3.1. Spatial Inequality within the EU

As can be seen in fig. 1, disparities vary greatly across the European Union and the euro-area. The map shows gross regional product per capita on the second NUTS² level (275 regions). Within the lowest of the seven quantiles, the range is more than threefold, i.e. even among the least developed, enormous differences exist. At least as important are the differences within countries. In Germany and Italy, some peripheral regions are found in the third septile (from below), while some regions of South Germany and North Italy are found in the seventh septile. Across the euro-area, differences between regions are even more extreme, but not substantially more, as some Greek and Portuguese regions are found in the second septile.

² NUTS is short for Nomenclature des Unités Territoriales Statistiques.

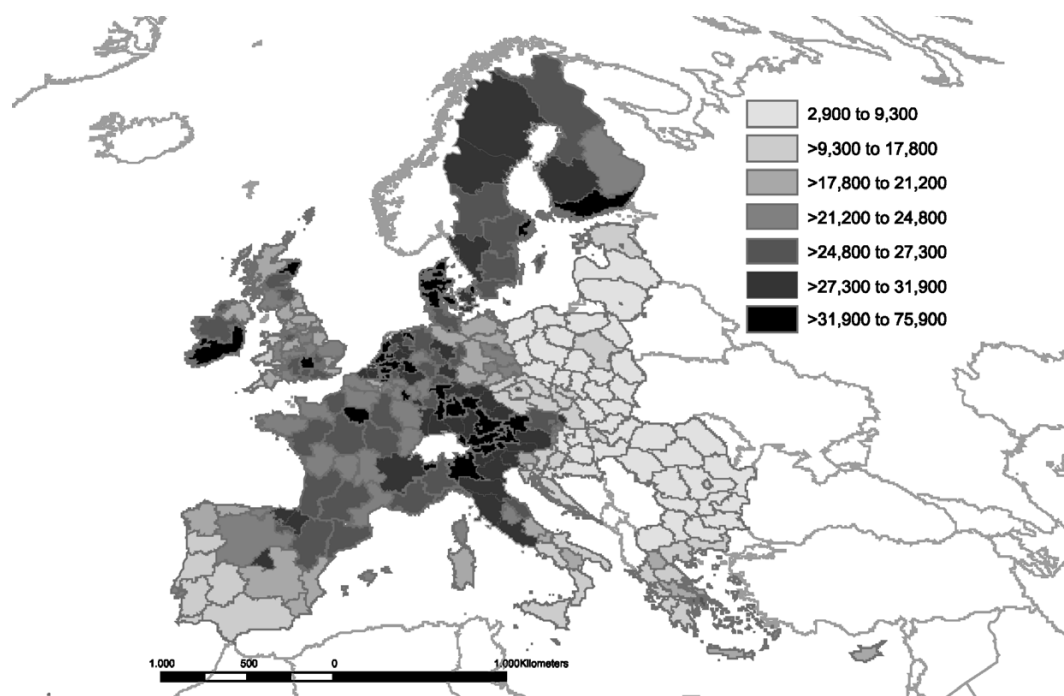


Fig. 1. Gross regional product per capita 2009 in euros; data source: Eurostat

Although the European Central Bank (ECB) has reached its inflation target of 2 % across its members over the years, the rates differ. More importantly, the individual inflation rates do not fluctuate around the 2 %-target. Rather, since the introduction of the euro in 1999, southern countries have persistently remained above, central countries close or far below the 2 %-target. The diagram to the left in fig. 2 displays the cumulative GDP deflators and hence the respective price increases that took place within the countries, mostly due to labour cost increases. It can be seen how the differences in domestic price increases have led to vast differences of price levels over the years: The core countries Austria and Germany are found clearly below the line of the whole euro-area, while the peripheral countries of Greece and Spain are far above. In addition, it can also be seen how France's line is almost identical to the one of euro-area

as a whole, and Italy's line is clearly above the euro-area line, but not as far as Greece's and Spain's. Nevertheless, regardless of whether they met the ECB's target or not, both France and Italy are found clearly above Austria and Germany.

The graph to the right in Figure 2 shows the accompanying unit labour costs. Apparently, differing inflation rates are mainly due to differences in wage increases. It is beyond the scope of this article to speculate as to why wage increases were so different during the first ten years of the euro. However, the most important effect is that the peripheral economies as well as France and Italy have lost competitiveness relative to Austria and Germany as goods produced in the former countries have increased in terms of prices relatively³.

³ For a brief and pointed analysis on the issue of inflation within the euro-area see Flassbeck (2012).

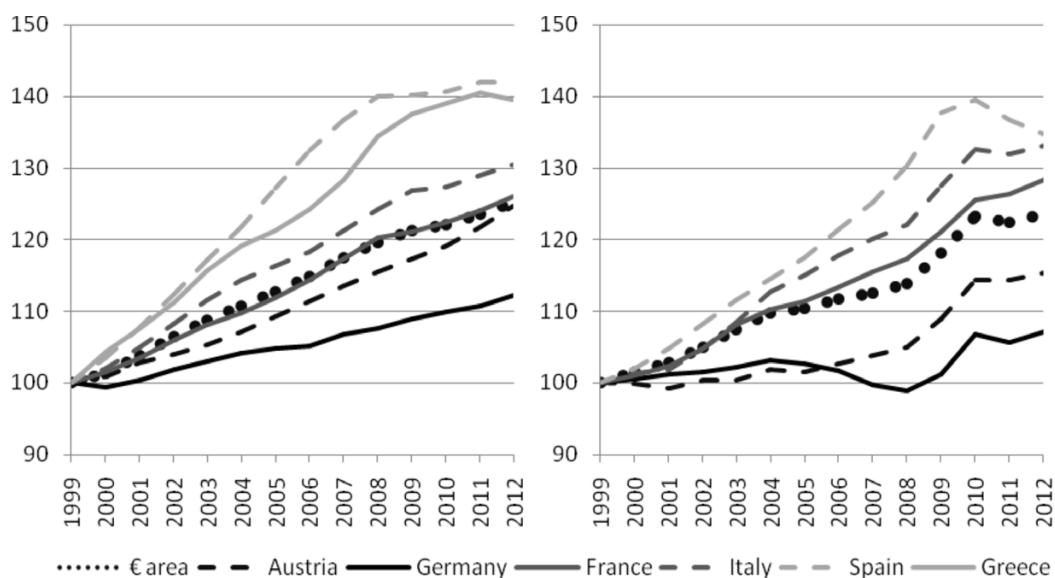


Fig. 2. Developments of GDP deflators (left) and unit labour costs (right); data source: Eurostat

Up to the introduction of the euro, national economies had been able to devalue their currencies and hence overcome problems associated with relatively high inflation rates. As a result of introducing the euro, its member states have given up a further policy instrument usually associated with national economies. In connection with the EU's four freedoms, which include free labour as well as free capital movement, the euro-area's member states arguably take on more and more characteristics which are usually associated with regions. It follows that forces that shape a core-periphery divide within a country are also present within the euro-area. As a consequence, the respective economies have fewer instruments at hand to overcome difficulties or shocks.

3.2. Growth and Migration Tendencies

In February 2013, 26.3 million people were unemployed within the EU, 19.1 million of which reside in the euro-area. In Greece and Spain, the rates were found above an astonishing rate of 26 %, while in Austria and Germany

the rates were around 5 %. Youth unemployment (i.e. under 25 years of age) is extremely high in peripheral countries, reaching 58.4 % in Greece, 55.7 % in Spain, and over one third in Italy and Portugal⁴. The euro-area's 2012 GDP was 1.26 % below the value of 2007. Between states, however, the development was by no means uniform: Greece's GDP fell by over 20 %, Italy's by 6.88 %, Portugal's by 5.66 %, Spain's by 4.12, while France's stayed roughly constant and Austria's and Germany's economies grew by over 3%.⁵

Without being able to devalue the currency if necessary, regional economies are at the mercy of developments abroad. Fig. 3 displays the cumulative GDP-deflator from 1999 to 2007 together with total real GDP growth from 2008 to 2012 for each original member state of the euro. The correlation is clearly negative as those economies who kept their home-

⁴ source of all unemployment data: Eurostat 2013b; employment data: Eurostat 2013a

⁵ Numbers refer to absolute GDP measured in chain-linked volumes, source: official data as available from Eurostat, as of 16-March-2013.

made inflation low were relatively successful regarding GDP growth, while the others experienced negative growth. Not surprisingly, the coefficient of correlation between mem-

ber states' GDP deflators before the crisis and GDP growth after the crisis equals -0.71 . At the same time, those countries that kept wages and hence GDP-deflator low experienced de-

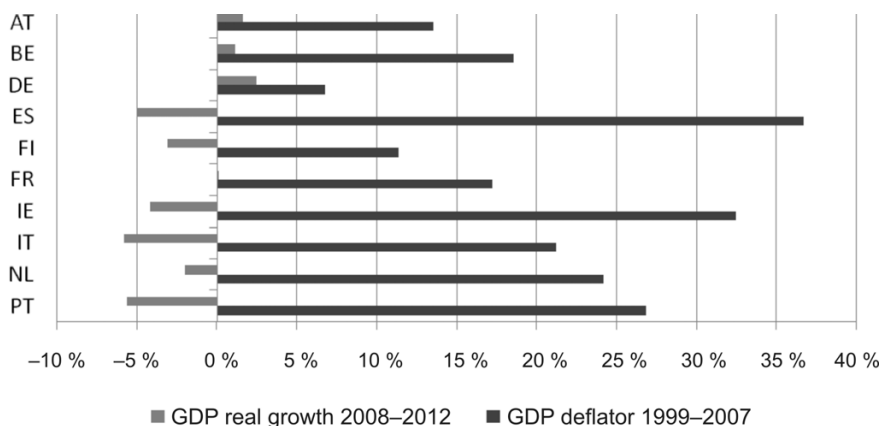


Fig. 3. GDP growth and GDP deflators within the euro-area; data source: Eurostat

creases in their wage shares. For instance, Austria's wage share fell from 71.70 % in 1999 to 66.36 % in 2007⁶. This suggests why Austria may have kept its unemployment level low and its industrial output high, namely by means of low wage increases.

Not surprisingly, people have begun to emigrate from the peripheral regions, and often their targets are the EU's central regions. This phenomenon as such is, of course, not new. For instance, Romania has had negative net migration for most of the past 20 years, cumulating to a net migration number of -1.24 million people from 1989 to 2011. Similarly, the net-migration number for Bulgaria is below $-700,000$. However, the former cohesion countries of Greece, Ireland, Portugal and Spain, all of which had experienced GDP growth rates far above the rest of the EU until the crisis, simultaneously experienced a change from negative to positive net migration rates. For instance, Ireland had had neg-

ative net migration rates for most years until 1994, followed by positive numbers, and then negative numbers again as of 2009. Similarly, Greece, Portugal and Spain had negative net migration rates until 1974, 1992 and 1990, respectively, then positive rates, and now negative numbers again since 2010 (Greece) or 2011 (Portugal and Spain)⁷. Although official numbers for the succeeding years are not available yet, it is highly likely they have continued to decrease.

In this context it is remarkable how the German minister of Labour and Social Affairs, Ursula von der Leyen, celebrates "the new quality of immigration" which would help make her country "younger, more creative and international". According to her, this process benefits young immigrants, who would be starting off in their jobs, and the economy as qualified employees surged into job vacancies (Becker et al., 2013). This view as expressed by

⁶ Calculated from Statistik Austria (2009).

⁷ official data as available from Eurostat, as of 27-February-2013

a minister from the core consciously or unconsciously leaves out the source countries, which may be not as happy.

4. CONCLUSION

In spring 2013 it seems as if the trend of convergence within the European Union, which lasted for most of the past three decades, has reversed or at least come to a halt. Arguably, the crisis is still too short to allow for long term conclusions to be drawn from empirical data alone. However, framework conditions have changed, too, and in this context two things should be stressed.

First, the persisting disparities within national economic systems such as Germany or Italy, where some regions are far more competitive than others, show that it is very difficult if not impossible for the backwards regions to converge. Being exposed to centripetal effects caused by trade, migration and investment propensities, they lack policy instruments that national economies would usually apply to overcome such problems. By seeking their own interests, mobile factors may help the core within a country to thrive, and spatial inequalities prevail.

Second, by giving up the typical instruments of national economic policies, the question emerges whether EU member states and in particular the euro-area members are becoming more and more like regions in terms of economic framework. If emigration, trade, investment outflows and monetary policies are possible causes for regions such as Calabria or Thuringia to lag behind the cores within their superordinate national economies, then the question emerges which forces will prevent Greece or Portugal from continuing lagging behind the cores within the EU and the euro-area. Up to now it seemed that language and cultural barriers keep economically ac-

tive persons from moving across the EU, but such barriers can be overcome. In addition, a first wave of migrants may create a network and motivate others to follow (Pedersen et al., 2008, Nowotny and Pennerstorfer, 2011). Once a critical mass of migration flows takes place from, say, Portugal to Germany, network effects therefore may increase the respective migration flow.

As pointed out by Myrdal (1957), peripheral regions may become trapped in a downward spiral, in which cumulative causation results in the periphery to fall further behind. Nevertheless, he also noted that the state may intervene if this process is not desirable. Concerning the euro-area, the question may be raised as to whether the core has any intention of reversing the current trend within the given framework as long as it benefits from it. Perhaps even more disturbing is the conclusion that keeping wage increases lower than the rest was a successful strategy for the core to increase production and absorb human capital in the wake of increasing unemployment in the periphery. If this is true, then the euro-area's members are caught in a prisoner's dilemma: Regardless of what the others do, the best strategy is to keep wages as low as possible within one's economy. As has been demanded by many, raising wages considerably in the core is probably part of the solution for the euro-crisis. If in this case unemployment continues to be relatively low in the core, wouldn't the core attract even more human capital from the euro-area's periphery?

While it may be argued that the balance between core and periphery within one nation state is a matter of negotiation and may perhaps even benefit the system as a whole, the situation is different within a supranational organisation that consists of 27 member states and 23 official languages. This paper has

shown theoretically that spatial inequality within a system of economies may increase as a consequence of factor movement, and empirically that policies in the various member states are strongly interconnected, and how the euro-area's core benefits from recent developments within the euro-area. A re-study of Myrdal's and Krugman's thinking and giving more priority to factor movement within neoclassical growth theory could help in understanding the current crisis and anticipating upcoming developments.

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