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Learning from Latin America's experience: Europe's failure in the 'Lisbon process'

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February 2010

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ABSTRACT

Learning from Latin America's Experience: Europe's Failure in the "Lisbon Process"*

The current paper investigates the cross-national relevance of Latin American "dependencia theory" for five dimensions of development (democracy and human rights, environment, human development and basic human needs satisfaction, gender justice, redistribution, growth and employment) on a global scale. It tries to confront the very basic pro-globalist assumptions of the "Lisbon process", the policy target of the European leaders since the EU's Lisbon Council meeting in March 2000 to make Europe the leading knowledge-based economy in the world with a "Latin American perspective". A realistic and politically useful analysis of the "Lisbon process" has to be a "Schumpeterian" approach. First, we analyze the "Lisbon performance" of the world economy by multivariate, quantitative means, looking into the possible contradictions that might exist between the dependent insertion into the global economy and other goals of the "Lisbon process". Dependency from the large, transnational corporations, as correctly predicted by Latin American social science of the 1960s and 1970s, emerges as one of the most serious development blockades, confronting Europe. Secondly, we analyze European regional performance since the 1990s in order to know whether growth and development in Europe spread evenly among the different regions of the continent. It emerges that dependency from the large transnational corporations is incompatible with a balanced, regional development. Finally, we discuss cross-national and historical lessons learned from the views of dependency and Schumpeterian perspectives for current policy-making in Europe, and opt for an industrial policy approach in the tradition of former EU-Commission President (1985-1995) Jacques Delors.

JEL Classification: J01, O52, O54, P50

Keywords: Lisbon process, European Union, Latin America, Dependency theory

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1. Introduction

Profound economic crises, like the current one, as the Great Depression of the 1930s and the “oil crisis” of the 1970s, seem to be an appropriate time for reconsidering some basic principles of economics and the upswing of “dependency theory”. From a European perspective, especially in an enlarged European Union, now comprising 27 countries, many of them with a typical profile of what classic Latin American social science would call a “semi-periphery”, the basic question must be asked as to whether the dependent insertion into the global economy is still a general receipt for a sound and successful development? Or is there a lesson to be learnt from the experience of the world periphery and semi-periphery, and from classic Latin American dependency research, which was generally critical about the long-term polarizing social effects of relations of dependency? In a recent EU-Presidency country non-paper by the Swedish government, written in 2009, we read:

“Trade and economic integration, combined with new technology, bring new markets, competitors and trade partners closer. They help to decrease poverty, promote democratic values and increase international stability. They bring enormous opportunities but also tougher global competition and make increased demands on European markets, companies and individuals to adapt to change. This holds true even more so today when facing global financial and economic unrest. Therefore, we need to take further action to reap the benefits from globalisation by strengthening Europe’s competitiveness.” (Eco-efficient Growth in the Age of Globalisation. Swedish non-paper on the Lisbon strategy post-2010, Stockholm, 2009)

This paper will confront the basic underlying assumptions of this European political economic strategy with a “Latin American perspective” and will perform one of the largest ever overall cross-national tests of the effects of dependency, culture, geography, recent world economic history and pension reforms on five dimensions of development (what we call here the “global Lisbon process”, consisting of the five dimensions: democracy and human rights, environment, human development and basic human needs satisfaction, gender justice, redistribution, growth and employment). What lessons are then to be drawn for the basic assumptions of the “Lisbon process”, the policy target of the European leaders since the EU’s Lisbon Council meeting in March 2000 to make Europe the leading knowledge-based economy?

With each enlargement wave, Europe becomes more and more comparable to the more advanced countries of Latin America, by first integrating the semi-periphery Ireland (1973), then Greece, Portugal and Spain in the 1980s and now the new member countries of the “big bang enlargement” of 2004. Very early on, the Norwegian social scientist Johan Galtung not only discovered for the “global North” the foundations of dependency theory with his famous 1971 essay, but in 1982 he portrayed the European Union as nothing else but a powerhouse of transnational corporation interventionism. To our knowledge, Seers and associates were the first to introduce with their 1978 study the notion of an “underdeveloped Europe”. European policy making, by and large, today pretends that a free-for all opening of the markets is a good solution, everywhere and anytime. At the recent elections to the European Parliament, political parties, which oppose heavily these current EU-Commission policies from the right and left, and which do not belong to the mainstream center-right or center left parliamentary caucuses in the European Parliament (EPP-ED (European People’s

Party), PES (Social Democrats), ALDE (Liberals), Greens – EFA) see <http://www.europarl.europa.eu/elections2009/default.htm?language=EN> gained more than 30 % of the popular vote in the following 12 of the 27 EU member countries (ordered in descending percentage points of the political weights of such more radical parties which question the basic European consensus): Latvia, Lithuania, Czech Republic, Estonia, UK, Austria, Cyprus, Netherlands, Italy, Poland, France and Portugal.

Globalization critics, like the platform “Attac” undoubtedly play an ever larger role in the politics of several European Union countries and were instrumental in defeating the government in the French referendum on the European Constitution in 2005.

As it is well known, in March 2000, the EU Heads of States and Governments agreed to make the EU “*the most competitive and dynamic knowledge-driven economy by 2010.*” Although some progress was made on innovating Europe's economy, there is a consensus that the reform process was not going fast enough and that the ambitious targets were not reached a decade later, as foreseen at the March 2000 Lisbon Council². As it is also widely known, the 14 main structural “Lisbon” agenda indicators, created to measure progress in meeting the Lisbon targets, play an important role in European policy making³. The Lisbon lists of indicators, apart from the highly publicized debt-related Maastricht criteria of the European Monetary Union, are perhaps the most important checklists for government success or failure in Europe today. They are omnipresent in the public political as well as scientific debate and are defined by Eurostat as:

List of Lisbon indicators:⁴

1. GDP per capita in PPS (to be maximized)
2. Labor productivity (to be maximized)
3. Employment rate (to be maximized)
4. Employment rate of older workers (to be maximized)
5. Educational attainment (20-24) (to be maximized)
6. Research and Development expenditure (to be maximized)
7. Comparative “price levels”⁵ (to be minimized)
8. Business investment (to be maximized)
9. At risk-of-poverty rate (to be minimized)
10. Long-term unemployment rate (to be minimized)
11. Dispersion of regional employment rates (to be minimized)
12. Greenhouse gas emissions (to be minimized)
13. Energy intensity of the economy (to be minimized)
14. Volume of freight transport (to be minimized)

² Available freely on the Internet at http://epp.eurostat.ec.europa.eu/portal/page/portal/structural_indicators/indicators/short_list. For a short survey of the Lisbon process, see also: <http://www.euractiv.com/Article?tcaturi=tcm:29-117510-16&type=LinksDossier>

³ http://epp.eurostat.ec.eu.int/portal/page?_pageid=1133,1403427,1133_1403432&_dad=portal&_schema=PORTAL

⁴ The Commission maintaining that a low value of indicators 7 and 9-14 is a good result.

⁵ For a neo-classical critique of this concept see also Yotopoulos, 1996, and Yotopoulos and Sawada, 2005. From the viewpoint of neo-dependency theory see Kohler/Tausch, 2003. It is interesting how little debate on this politically binding concept exists in Europe.

The Commission (2005) classified the Lisbon reforms into five categories:

1. Product and capital market reforms;
2. Investments in the knowledge-based economy;
3. Labor market reforms;
4. Social policy reforms;
5. Environmental policy reforms.

The current paper will now confront the underlying, pro-globalist logic of the Lisbon strategy with what we perceive as the essence of the classical “Latin American” structuralist and dependencia argument, developed in the late 1960s, i.e. four decades ago, in a long-term structural analysis of the preconditions of successful social, economic and environmental development, thus confronting the very basic assumptions of the “Lisbon process” with such a “Latin American perspective”. Especially we will analyze, whether the dependent insertion into the global economy, operationalized by:

Foreign saving [(I-S)/GNP],
Low comparative international price level [ERD], and
Transnational capital penetration [MNC PEN 1995]

will offer better explanations of the five main dimensions of global development (democracy and human rights, environment, human development and basic human needs satisfaction, gender justice, redistribution, growth and employment) than standard predictors of global development performance, like:

- State interventionism (absence of economic freedom)
- Percentage of the population adhering to the Muslim faith
- Membership in the European Union before the Eastern enlargement of 2004
- Dummy for being landlocked
- Urbanization ratio
- Dummy for transition economy
- Development level [$\ln(\text{GDP PPP pc})$] and its square [$\ln(\text{GDP PPP pc})^2$]
- World Bank pension reform

So, firstly we analyze the “Lisbon performance” of the world economy by multivariate, quantitative means, looking into the possible contradictions that might exist between dependent insertion into the global economy and the goals of the “Lisbon process”. Secondly, we analyze in this paper also European regional performance since the 1990s in order to know whether growth and development in Europe spread evenly among the different regions of the continent. Regional development reveals important implications for the overall development process, as has been demonstrated recently by Heshmati (2007) in an analysis about the trajectory of regional inequality in 10 countries (China, Colombia, India, Indonesian Java, Philippines, Poland, Russia, South Africa, USA, and Zambia).

Again, it emerges that dependency from the large transnational corporations is incompatible with a balanced, regional development. Finally, we discuss lessons learned from the views of dependency and Schumpeterian perspectives for current policy-making in Europe.

At the time, Osvaldo Sunkel put the worldview of Latin American social science into prisma and correctly foresaw the current development crisis of the European continent:

'The interpretation so far advanced suggests that the international capitalist system contains an internationalized nucleus of activities, regions and social groups of varying degrees of importance in each country. These sectors share a common culture and 'way of life', which expresses itself through the same books, texts, films, television programs, similar fashions, similar groups of organization of family and social life, similar style of decoration of homes, similar orientations to housing, building, furniture and urban design. Despite linguistic barriers, these sectors have a far greater capacity for communication among themselves than is possible between integrated and marginal persons of the same country who speak the same language (...) Modernization implies the gradual replacement of the traditional productive structure by another of much higher capital intensiveness (...) On the one hand, the process of modernization incorporates into the new structures the individuals and groups that are apt to fit into the kind of rationality that prevails there; on the other hand, it expels the individuals and groups that have no place in the new productive structure or who lack the capacity to become adapted to it. It is important to emphasize that this process does not only prevent or limit the formation of a national entrepreneurial class, as indicated by Furtado, but also of a national middle class (...) and even a national working class. The advancement of modernization introduces, so to speak, a wedge along the area dividing the integrated from the segregated segments (...) In this process, some national entrepreneurs are incorporated as executives into the new enterprises or those absorbed by the TRANCO (i.e. transnational corporations), and others are marginalized; some professionals, forming part of the technical staff and the segment of employees are incorporated, and the rest are marginalized; part of the qualified labor supply and those that are considered fit to be upgraded are incorporated, while the remainder are marginalized.

The effect of the disintegration of each social class has important consequences for social mobility. The marginalized entrepreneur will probably add to the ranks of small or artisanal manufacture, or will abandon independent activity and become a middle class employee. The marginalized sectors of the middle class will probably form a group of frustrated lower middle class people trying to maintain middle class appearance without much possibility of upward mobility and terrorized by the danger of proletarianization. The marginalized workers will surely add to the ranks of absolute marginality, where, as in the lower middle class, growing pools of resentment and frustration of considerable demographic dimension will accumulate (...) Finally, it is very probable that an international mobility will correspond to the internal mobility, particularly between the internationalized sectors (...) The process of social disintegration which has been outlined here probably also affects the social institutions which provide the bases of the different social groups and through which they express themselves. Similar tendencies to the ones described for the global society are, therefore, probably also to be found within the state, church, armed forces, political parties with a relatively wide popular base, the universities etc.' (Sunkel, 1973: 18-42).

Does such an analysis apply for the EU-27 and the global economy in 2009? Five years after European Union accession and two decades after the transformation process in the East of the continent had begun it is time to take a more systematic and global view on what has been achieved since 1989, and what problems might be ahead in East Central Europe and in the EU-27 as a whole.

That such a perspective is permitted, or even recommended in the scientific debate about the region and about the EU-27 is far from clear. Kornai, not too distantly ago, pointed out that mainstream economics relinquishes the profound criticism of the capitalist economy to “*those professing radical views*” (Kornai, 2005, final Chapter, Presidential address, International Economic Association). Kornai went on to say that even when the economic profession accepts the fact that there may be problems, it lulls itself into believing that these problems can be reassuringly resolved by applying appropriate measures. It denies, Kornai says, that the system may have inborn, insurmountable genetic defects. Compared to the rapid political and human rights transformation, which the region experienced, and which Kornai continues to call an “unparalleled success”, all achieved in a climate of democracy and non-violence, one is at least permitted to speak about the negative sides as well – not in the form of a balance sheet, but as an agenda for future policy and research.

For Kornai, some of these main contradictions are:

1. The real income of a significant proportion of the population has remained unchanged, or even deteriorated
2. “A dramatic restructuring”, which has taken place in the area of income distribution
3. The employment rate has significantly declined and open unemployment has appeared, and job security disappeared
4. Public security was deteriorating
5. Corruption
6. Disorders in the political arena
7. “*It can be stated with certainty that capitalism gives birth to disparity. But tax policies favoring the rich while afflicting the impoverished, or poorly distributed state subsidies, can make matters even worse.*” (Kornai, 2005)

Applications of “dependency thinking” to the realities of East Central Europe were attempted, among others, by Batou and Szlajfer (2009), Bernhard and Szlajfer (1995), Foster and Szlajfer (1984) and Szlajfer (1990). But also in Western Europe, and not only in the “old Europe”, such a perspective is necessary. Dissatisfaction with the “Lisbon process” of the European Union is widespread, relevant optimistic recent voices from the Commission notwithstanding.⁶ As shown in Graph 1, in terms of real purchasing power, Europe by far lags behind the US, its main Lisbon process competitor.

Insert Graph 1 Real purchasing power about here

The message of this graph is clear – the US, Norway and Switzerland are still ahead of the EU-27, the EU-15 and the Euro zone; and Japan declined from 1996 to 2008, while the non-EU-27-members Norway and – since 2005 also Switzerland – are on a trajectory overtaking the EU-27. Instead of surging ahead, the core regions of Western Europe relatively stagnated since the beginning of the Lisbon process in 2000.

Authors like Joseph Alois Schumpeter, and later world system and dependency writers like Samir Amin, Volker Bornschier, Fernando Henrique Cardoso, Raul Prebisch, and

⁶ For a survey of the literature on the Lisbon strategy and its evaluation see: European Commission (2003, 2005), European Commission Report (2005), and Eur-Lex (2005).

Osvaldo Sunkel, were always aware of the crises, cyclical imbalances, regional shifts, and of the rise and decline of entire regions and even continents in the process of capitalist development. We return in a way to the “old Galicia” of 1909 to 1911, where Schumpeter gained valuable insights into the nature of world development as a young University professor. Schumpeter could well observe in Czernowitz (then a German-language university on the very eastern outer rim of the Austro-Hungarian Empire, now Chernivtsi University in Northern Bukovina, Ukraine) at first hand this “creative destruction”, which capitalism constituted in the Galician periphery of the Empire. Several of his major works, like “*The Nature and Essence of Theoretical Economics*” (1908, translated 2009) “*The Theory of Economic Development: An inquiry into profits, capital, credit, interest and the business cycle*” (1912, first translated 1934) were all heavily influenced by his early experiences at the outer rim, and not by the experience of the “center”.

Like many other development theorists of the first generation of development economists after the Second World War, whose stars began to rise long after Schumpeter already went to America, Kurt Mandelbaum, Paul Narcoz Rosenstein-Rodan, and Hans Wolfgang Singer, all shared with Schumpeter the observation that capitalism never was a smooth equilibrium process. Mandelbaum, Rosenstein-Rodan and Singer, and the dependency theorists in Latin America, whom they so heavily influenced, were deeply convinced that capitalism is NOT crisis-free growth, full employment, environmental sustainability and the end to social exclusion.⁷

At the end of the day, a realistic and politically useful analysis of the “Lisbon process” has to be “Schumpeterian” in its question writing – not excluding the contradictions inherent in the process of capitalist development, which we witness since the year 1989 at the pan-European level.

The rest of this study is organized as follows. In Section 2 the main theories under scrutiny are outlined. Section 3 presents the data and research design. Computation of the dimension index used for evaluation of the Global Lisbon Process is outlined in Section 4. The results are presented in Section 5 and further discussed in section 6. The final section summarizes and concludes this study.

2. The main theories under scrutiny here

European Union policy making nowadays makes basic pro-globalist assumptions, like the one that a low comparative international price level is absolutely necessary for socio-economic development. Comparative price levels depend on the relationship between tradables and non-tradables. Countries with low price levels in non-tradables generally have low comparative price levels. But does a haircut in France really have to be as inexpensive as in Bangladesh for the Lisbon process in Europe to be successful? For dependency and later world systems theory, going back to its four “founding fathers” Samir Amin, Giovanni Arrighi, Andre Gunder Frank and Immanuel

⁷ For a selection of such studies see: Mandelbaum (1945), and Rosenstein-Rodan (1964)

Wallerstein, ascent and decline in world society is largely being determined in our age by the following ‘five monopolies’:⁸

- The monopoly of technology, supported by military expenditures of the dominant nations,
- The monopoly of control over global finances and a strong position in the hierarchy of current account balances,
- The monopoly of access to natural resources,
- The monopoly over international communication and the media, and
- The monopoly of the military means of mass destruction.

Dependency authors in the traditions of Cardoso (1977), Furtado (1976), and Sunkel (1966, 1978, 1994 and 2003, for the later, European reception of dependency thought see also Murshed, 2002; Murshed and Raffer, 1993; Raffer, 1987; Raffer and Singer, 1996, 2001; Tausch and Ghymers, 2007; Tausch and Prager, 1993) generally explained backwardness and stagnation by the ever-growing dependent insertion of these countries into the world economy. Starting with the writings of Prebisch (1983, 1988) and Rothschild (1944), their leading spokespersons all would stress the unequal and socially imbalanced nature of development in regions that are highly dependent on investment from the highly developed countries, even in the richer countries of the European Union. Short-term spurts of growth notwithstanding, long-term growth will be imbalanced and unequal, and will tend towards high negative current account balances.

Later world system analyses – that started with the writings of the Austro-Hungarian socialist Karl Polanyi after the First World War - tended to confirm and expand this dependency argument. Capitalism in the periphery, like in the center, is characterized by strong cyclical fluctuations, and there are centers, semi-peripheries and peripheries. The rise of one group of semi-peripheries tends to be at the cost of another group, but the unequal structure of the world economy based on unequal transfer tends to remain stable.

Dependency and world system theory has a disturbing message for the European integration process even today, some four decades after the first analyses by Cardoso, Furtado, Sunkel and many others were written in the late 1960s and early 1970s. Their perspective would generally hold that poverty and backwardness in semi-periphery countries like the new member states of the European Union, which joined the “club” in May 2004, are caused by the peripheral or quasi-peripheral position that these nations or regions have in the international division of labor. Ever since the capitalist world system evolved, there is a stark distinction between the nations of the center and the nations of the periphery. Fernando Henrique Cardoso once, at the height of the debate, summarized the quantifiable essence of dependency theories as follows:

- There is a financial and technological penetration by the developed capitalist centers of the countries of the periphery and semi-periphery,
- This produces an unbalanced economic structure both within the peripheral societies and between them and the centers,
- This leads to limitations on self-sustained growth in the periphery,

⁸ See Amin (1976), Arrighi (1995), Frank (1983, 1990 and 1998) and Wallerstein (2000).

- This favors the appearance of specific patterns of class relations, and
- These require modifications in the role of the state to guarantee both the functioning of the economy and the political articulation of a society, which contains, within itself, foci of inarticulateness and structural imbalance (Cardoso, 1979).

It is now very tempting to look at the European realities with, so to speak, Latin American eyes. Our geographical presentation of our own variables used in the analysis will be kept to a minimum. Among the dependent variables, we just mention MNC penetration, unequal transfer and the resource balance as the three “master variables” of dependency. Unequal transfer is strongest in the periphery, and weakest in the centers, with the semi-periphery showing medium levels of exposure to unequal transfer (see Map 1.A and 1.B). Our map might be even termed to be an update of this Wallersteinian concept to the realities of the turn of the last Century and Millennium, with the centers having values that correspond to the zones of lighter color, the semi-peripheries in grey colors, and the peripheries in dark colors.

Insert Map 1.A Comparative price levels, World, about here

Insert Map 1.B Comparative price levels, Europe, about here

In general terms, we observe today high levels of MNC penetration in the “dominion economies” like Australia and Canada, in Western Europe, in some parts of Eastern Europe, in Central Asia, other parts of the former USSR, in many parts of Latin America, Southern and Western Africa, in Egypt, in Tunisia, and in China and Southeast Asia (see Map 2.A to 2.D).

Insert Map 2.A MNC penetration, World, about here

Insert Map 2.B MNC penetration, Europe, about here

Insert Map 2.C Increase in MNC, World, about here

Insert Map 2.D Increase in MNC, Europe, about here

MNC penetration received a vast attention in the published titles of the comparative research literature of the last three decades, above all in the writings of the Swiss sociologist Volker Bornschier (2002) and his associates (1977, 1979 and 1985). While different authors disagree on the direction of the influence of MNC penetration on the human condition, they all underline the strong influence of MNC penetration on employment, economic growth, income distribution and overall development.

Foreign saving, for its turn, is strongest in many parts of Latin America, Southern Africa, in the “new Europe” and in China and in several countries of Southeast Asia (see Map 3.A and 3.B). In the classical dependency-oriented literature, it has been dealt with extensively, among others, in the works of Paul Israel Singer.

Insert Map 3.A Foreign saving, World, about here

Insert Map 3.B Foreign saving, Europe, about here

3. Data and developing the research design

It seems to be important at this point to emphasize that our three indicators of dependency measure three different types of “dependent development”:

- MNC penetration measures the different degrees of weight that foreign capital investments have in the host countries, i.e. the UNCTAD percentages of the stocks of multinational corporation investments per total host country GDP. This research tradition has been especially developed by the Swiss sociologist Volker Bornschier and his school.
- What current European policy-making calls “low comparative price levels” but what dependency theories call “unequal exchange/unequal transfer” (Kohler/Tausch, 2003, furthermore Raffer, 1987, Yotopoulos, 1996, and Yotopoulos/Sawada, 2005) is operationalized here simply by ERD or ERDI, the exchange rate deviation index, which measures the degree, to which globalization has contributed to lowering the international price level of a country; i.e. it is an indicator about the openness of the price system *vis-à-vis* the pressures of dependent insertion into the global economy. The result of this is an unequal transfer from the peripheries to the centers, which used to be high-price countries until very recently. ERD is calculated by the ratio between GDP at purchasing power parities, divided by GDP at current exchange rates.
- For dependency authors, foreign savings show the weight that foreign savings, mostly from the centers and richer semi-peripheries, have in the accumulation process of the host countries in the periphery and semi-periphery. It is calculated by the difference between the share of investments per GDP and the share of savings per GDP.

The choice of a country to be included in the final analysis (134 countries⁹) was determined by the availability of a complete data series for these independent variables (if not mentioned otherwise, UNDP data). The data for this study were described and presented in great detail in the analysis Tausch, 2008, so our description will be kept to a minimum here¹⁰.

⁹ Albania; Algeria; Angola; Argentina; Armenia; Australia; Austria; Azerbaijan; Bahrain; Bangladesh; Belarus; Belgium; Belize; Benin; Bolivia; Botswana; Brazil; Bulgaria; Burkina Faso; Burundi; Cambodia; Cameroon; Canada; Chad; Chile; China; Colombia; Congo; Congo, Dem. Rep. of the; Costa Rica; Côte d'Ivoire; Croatia; Cyprus; Czech Republic; Denmark; Dominican Republic; Ecuador; Egypt; Estonia; Ethiopia; Fiji; Finland; France; Gabon; Gambia; Georgia; Germany; Ghana; Greece; Guatemala; Guinea; Guinea-Bissau; Guyana; Haiti; Honduras; Hungary; Iceland; India; Indonesia; Iran, Islamic Rep. of; Ireland; Israel; Italy; Jamaica; Japan; Jordan; Kazakhstan; Kenya; Korea, Rep. of; Kyrgyzstan; Lao People's Dem. Rep.; Latvia; Lebanon; Lesotho; Lithuania; Luxembourg; Madagascar; Malawi; Malaysia; Mali; Mauritania; Mauritius; Mexico; Moldova, Rep. of; Mongolia; Morocco; Mozambique; Namibia; Nepal; Netherlands; New Zealand; Niger; Nigeria; Norway; Pakistan; Panama; Papua New Guinea; Paraguay; Peru; Philippines; Poland; Portugal; Romania; Russian Federation; Rwanda; Saudi Arabia; Senegal; Singapore; Slovakia; Slovenia; South Africa; Spain; Sri Lanka; Swaziland; Sweden; Switzerland; Syrian Arab Republic; Tajikistan; Tanzania, U. Rep. of; Thailand; Togo; Trinidad and Tobago; Tunisia; Turkey; Uganda; United Kingdom; United States; Uruguay; Uzbekistan; Venezuela; Viet Nam; Yemen; Zambia; Zimbabwe.

¹⁰ The results in Tausch (2008) are based on Microsoft EXCEL multiple regressions. The SPSS XV regressions reported in the present study are a continuation and refinement of the earlier research results, reported in Tausch, 2008. On the reliability problems of common statistical software programs, like Microsoft EXCEL, especially when collinearity of the predictor variables is higher (as is the case in the present regression equations), see Altman and McDonald (2001). Our tests revealed the basic validity of the argument, put forward by Altman and McDonald, which has vast and serious implications for the entire social science profession. SPSS and Microsoft EXCEL regressions reveal, our tests showed, the

So, in this study we utilize data from 134 countries. For each we have information about 12 independent variables which are grouped into six dimensions. The number of dependent variables is 17, divided into five dimensions. These indicators of development are jointly used to construct a multidimensional Global Lisbon Process index. The aim is to shed lights on the development in EU and characterize it by three types of dependency.

The design of our study is based on usual, SPSS XV ordinary least square standard regression of the “kitchen sink type” (Durlauf *et al.*, 2008) of economic growth and economic performance in the research tradition of Barro, 2003. The independent variables of our model for around the year 2000 or later comprised the following list. As we said, we used this list to construct a single “global Lisbon process” indicator. The independent variables include:

1. Development level \ln (GDP PPP pc). This variable should control for the effects of rising incomes on development (UNDP HDR, 2000)
2. Development level, square (maturity effects) \ln (GDP PPP pc)². This variable should control for the effects of economic maturity on development (UNDP HDR, 2000)
3. Dummy: landlocked country (Easterly, 2000)
4. Dummy: transition country (Easterly, 2000)
5. EU-15-membership (EU member by the year 2000, dummy variable)
6. Foreign saving (I-S)/GNP (calculated from UNDP 2000)
7. MNC PEN 1995 (UNCTAD World Investment Report, current issues)
8. Percentage of Muslims per total population (Nationmaster¹¹)
9. State interventionism (absence of economic freedom; Heritage Foundation and Wall Street Journal website for economic freedom¹², by around 2000)
10. Unequal transfer (calculated from UNDP, concept: ERDI, reciprocal value of comparative “price levels”, developed on the basis of the ERD-Index Yotopoulos *et al.*, the Commission maintaining that a low value is good result; data source UNDP HDR, 2000)
11. Urbanisation (Easterly 2000)
12. World Bank pension reform¹³ (World Bank sources, quoted in Tausch (2007))

The independent variables listed above correspond to the following dimensions:

same R², regression constants, and overall F-tests, but the significance of the predictors changes in Microsoft EXCEL regressions is not stable, depending on the ordering of the independent variables, while SPSS results are stable, regardless of the ordering of the independent variables.

¹¹ See nationmaster.com at: http://www.nationmaster.com/graph/rel_isl_per_mus-religion-islam-percentage-muslim

¹² These data are contained in <http://www.freetheworld.com/>; also: <http://www.heritage.org/research/features/index/>. We used the latter website as the source of our data. It has to be kept in mind that the “worst” countries on the economic freedom scale have the numerically highest values, while the best countries have the numerically lowest values. Lao People's Dem. Rep. – the economically “unfreest” country in our sample, has the numerical value 4.6, while the economically freest country, Singapore, scores 1.45. We thus decided to call our indicator “state interventionism”.

¹³ Argentina; Australia; Bolivia; Chile; Colombia; Croatia; Denmark; El Salvador; Hungary; Kazakhstan; Mexico; Netherlands; Peru; Poland; Sweden; Switzerland; United Kingdom; Uruguay.

1. Dependent insertion into the global economy
 - Foreign saving [(I-S)/GNP]
 - Low comparative international price level [ERD]
 - State interventionism (absence of economic. freedom)
 - Transnational capital penetration [MNC PEN 1995]
2. Percentage of the population adhering to the Muslim faith
3. Membership in the European Union before the Eastern enlargement of 2004
4. Geography
 - Dummy for being landlocked
 - Urbanization ratio, 1990
5. Recent world economic history
 - Dummy for transition economy
 - Development level [$\ln(\text{GDP PPP pc})$ and its square [$\ln(\text{GDP PPP pc})^2$]
6. Pension Reform efforts
 - World Bank pension reform

The dependent variables for this analysis correspond to standard knowledge in comparative political science and sociology. They were all standardized, as we will explain below, on a scale ranging from 1 (best value) to 0 (worst performance); with the indicators, whose high numerical values imply a bad development performance (% people not expected to survive age 60; ecological footprint, quintile ratio (share of income/consumption richest 20% to poorest 20%), civil liberty violations, CO2 emissions per capita, political rights violations, and unemployment) being reversed. Thus all indicators now imply that a high numerical value is a good development performance. Although we presume all the indicators as to be known generally, we refer our readers to a brief summary of the Happy Planet Indicator, available from <http://www.happyplanetindex.org/list.htm>, and the Yale/Columbia environmental data series, available at <http://sedac.ciesin.columbia.edu/es/esi/>, which might be perhaps not so well-known to the readers. The dependent variables were measured, if not specified otherwise, by around the middle of the first decade of the new Millennium. The list of the dependent variables, to be projected onto a combined and single final indicator, comprises:

1. Economic growth, 1990-2003 (UNDP HDR, 2005)
2. Eco-social market economy (GDP output per kg energy use) (UNDP HDR 2000)
3. Female economic activity rate as % of male economic activity rate (UNDP HDR 2000)
4. Freedom from % people not expected to survive age 60 (UNDP HDR 2000)
5. Freedom from a high ecological Footprint, 2004 (Happy Planet Organization)
6. Freedom from a high quintile ratio (share of income/consumption richest 20% to poorest 20%) (UNDP HDR 2005)
7. Freedom from civil liberty violations, 1998, and 2006 (Easterly, 2000, and Freedom House, 2007)
8. Freedom from high CO2 emissions per capita (UNDP HDR 2000)
9. Freedom from political rights violations, 1998, and 2006 (Easterly, 2000, and Freedom House, 2007)
10. Freedom from unemployment, 2003 (UN statistical system website, social indicators)

11. Gender development index (GDI) 2004 (UNDP HDR, 2006)
12. Gender empowerment index (GEM), 2004 (UNDP HDR, 2006)
13. Happy Planet Index (HPI), 2004 (Happy Planet Organization)
14. Human development Index (HDI), 2005 (UNDP HDR 2005)
15. life expectancy, 1995-2000 (UNDP HDR 2000)
16. Life Satisfaction, 2004 (Happy Planet Organization)
17. The Yale/Columbia¹⁴ environmental sustainability index (ESI-Index), 2005

The list of our dependent variables is thus again multidimensional:

1. Democracy and human rights
 - Absence of democracy: political rights and civil rights violations (based on Freedom House, 2000, reported in Easterly, 2000 and Freedom House, 2007)
2. Environment
 - CO2 emissions per capita
 - ESI-Index ((Yale/Columbia environment sustainability index project website)
 - GDP output per kg energy use (“eco-social market economy”)
 - Ecological Footprint
 - Happy Planet Index
3. Human development and basic human needs satisfaction
 - % people not expected to survive age 60
 - Human development index
 - Life expectancy, 1995-2000
 - Life Satisfaction²⁰
4. Gender justice
 - Gender development index 2004 (UNDP HDR, 2006)
 - Gender empowerment index, 2004 (UNDP HDR, 2006)
 - Female economic activity rate as % of male economic activity rate (UNDP HDR 2000)
5. Redistribution, growth and employment policies
 - Economic growth 1990-2003
 - Share of income/consumption richest 20% to poorest 20%
 - Unemployment 2003 (from United Nations statistical website)

In Graph 2, we summarize our vision of the “global Lisbon process” from what is known from the international indicators. The dimension of human rights and gender equality is conspicuously absent from the original Eurostat Lisbon ¹⁴ list. Our list, by contrast, integrates the five dimensions: growth, environment, human rights, basic human needs, and gender equality.

Insert Graph 2 Global Lisbon process about here

¹⁴ <http://sedac.ciesin.columbia.edu/es/esi/>. The EXCEL spreadsheet for 2005 is freely available from this site.

4. A composite dimension index

The Global Lisbon Process (GLP), combining the development performance of all the variables, mentioned in Graph 2 is corresponding to the following equation:

$$(1) \quad GLP_i = \alpha + \beta_1 X_{1i} + \beta_2 X_{2i} + \dots + \beta_j X_{ji} + \varepsilon_i$$

where α is the intercept, β is a vector of unknown parameters to be estimated, ε is an error term, and X a vector of j indicator of progress for country i . The vector X include: first part curvilinear function of development level, second part curvilinear function of development level, stock of transnational investment per GDP, comparative price levels, foreign saving, dummy for transition economy, percentage of the population adhering to the Muslim faith, European Union membership, state interventionism, urbanisation, dummy for landlocked country, and the dummy for World Bank pension reform.

The “Lisbon process” for us is constituted in the following way. To evaluate the global Lisbon process indicators at once, we constructed a UNDP-type index from the data. This type of index is to identify indicators with linear relationship and create a composite index that helps to rank individual countries using a single index. The methodology is used to compute a number of composite indicators that are used to form the Global Lisbon Process.

Here, the Global Lisbon Process is composed of 17 major components labeled as dimensions. These dimensions are listed and explained below. Each dimension components is generated from a number of indicators. This type of index was initially introduced to compute the UNDP “Human Development Index” (HDI). It has also been used in computation of a “Globalization Index” (Heshmati, 2006), “Lisbon Development Strategy-Index” (Heshmati and Oh, 2006), and “Child Well-being-Index” (Heshmati, Tausch and Bajalan (2008)). This index can serve as a model for computation of a GLP. The GLP index can alternatively be estimated parametrically using Principal Component Analysis (see e.g. Heshmati, 2006; Andersen and Herbertsson, 2003; Tausch and Heshmati, 2005).¹⁵ The non-parametric approach has the advantages that it does not require a functional form to be assumed. The GLP index is computed based on the normalization of the 17 individual dimensions and the subsequent aggregation using a weighting system as follows:

$$(2) \quad GLP_i = \sum_{j=1}^J \sum_{m=1}^M \omega_{jm} \{ (X_{jmi} - X_{jm}^{\min}) / (X_{jm}^{\max} - X_{jm}^{\min}) \}$$

where i indicate country, m and j are within and between dimension subscripts, ω_{jm} are the within dimension and between dimension weights attached to each indicator (X), min and max are minimum and maximum values of respective indicator across countries.

¹⁵ For recent surveys on the literature on the use of composite indices in different development research context see also Archibugi and Coco (2004) and Grupp and Moguee (2004).

The index in (2) is suitable for indicators with an expected positive effect on development. In cases where the indicators are expected to have a negative impact on development the corresponding index is written as:

$$(3) \quad GLP_i = \sum_{j=1}^J \sum_{m=1}^M \omega_{jm} \{ (X_{jm}^{\max} - X_{jmi}) / (X_{jm}^{\max} - X_{jm}^{\min}) \}$$

where the two indices differ only by the nominator of the ratio. Alternatively, prior to the normalization in (2) the negative indicators are transformed to inverses, $(1/X)$ reversing their expected impact from negative to positive.

The component's weights in equations (2) and (3) are chosen on an ad hoc basis and are constant across countries. This GLP index can be used as a benchmark index, and as in the computation of the "globalization index" (Heshmati, 2006), finds the ranking of countries to be sensitive to the way the indicators are measured, normalized and weighted. The weighting approach here is similar to the commonly used HDI, which is based on educational attainment, life expectancy and real GDP per capita (see Noorbakhsh, 1998; Kang, 2002; Katz 2006; and Lockwood, 2004), where all indicators are given equal weight.

In our case, with the exception of few indicators which are already normalized indices, we calculated the 17 different dimension normalized indices for the global Lisbon process, using the formula 2 and 3. Due to missing values, we were satisfied with simply calculating the means from the 17 available different components:

GLI = the means from the following component index for the dimension:

1. Economic growth
2. Eco-social market economy
3. Female economic activity rate as % of male economic activity rate
4. Freedom from % people not expected to survive age 60
5. Freedom from a high ecological Footprint
6. Freedom from a high quintile ratio
7. Freedom from civil liberty violations
8. Freedom from high CO2 emissions per capita
9. Freedom from political rights violations
10. Freedom from unemployment
11. Gender development index
12. Gender empowerment index
13. Happy Planet Index
14. Human development Index
15. Life expectancy
16. Life Satisfaction
17. Yale/Columbia environmental sustainability index

Needless to say, Graph 3 shows that the global Lisbon indicator and the UNDP Human Development Indicator are closely and positively interrelated.

Insert Graph 3 Global Lisbon process and its relationships about here

5. The results

First, we present our results on a global scale. The regression results from the 18 models including the estimated coefficients, their standardized errors, weights, *t*-tests and error probabilities to measure the effects of the 12 predictor variables on the dependent variables, each measuring a positive development performance, is summarized in Table 1.¹⁶ It should be emphasized again, that all indicators were standardized, and that a high numerical value for each indicator implies a “good” development performance.

Insert Table 1 Determinants of development performance about here

The causal links for the global Lisbon performance can be further specified in Graph 4. It portrays the determinants of the global Lisbon Process Indicator. The full arrows indicate positive influence of the predictor on the global Lisbon process, while the dotted arrows negative influence on the process.

Insert Graph 4 Final causal model about here

The summarizing Table 2 finally shows the rankings of the highly developed countries in the global Lisbon process. European decision makers would be well advised to re-think their strategies, indeed. Not the United States (rank on the global Lisbon scale – 38) should be the target country, but the European welfare democracies Switzerland, Austria, Sweden, Norway, Denmark, Finland, the Netherlands, and Ireland, who all maximized the Lisbon process, combining its 17 different components.

Insert Table 2 Global Lisbon Process about here

Pushing Europe downwards the path of a passive reliance on multinational corporation penetration will only increase the growth impediments of the growingly multicultural Europe.

Secondly, our general approach receives a qualified support by our study about economic growth in the European regions. In Map 4, we report the transnational corporations’ foreign direct investment intensity in Europe.

Insert Map 4 Transnational corporation investment about here

Our final regional development equations reported in Table 3 show that regional convergence in Europe is significantly blocked by MNC penetration, this time measured by the weight which MNCs exert over total employment.

Insert Table 3 Determinants of economic growth about here

Some of the beta-weights for the control variable “development level” and its square in the multiple regressions are above 1.0, due to the high collinearity of this variable.

6. Discussion

It would be virtually impossible for reasons of space to compare the results of this study one by one with earlier results published in the wide and ever more expanding research literature on MNC penetration and socio-economic development. A

¹⁶ Only statistically significant predictors coefficients are reported here.

scientometric analysis of the vast dependency-oriented research literature in the major international social science journals revealed that as of July 4th, 2009, 328 major international studies quoted the path-breaking Galtung analysis (1971), and a further 74 major international studies were based on the Sunkel essay (1973), which both must be regarded as the catalyst essays for the two follow-up pioneering quantitative dependency studies, authored by Chase-Dunn (1975) [which had in turn 213 follow-up studies], and Rubinson (1976) [which yielded 170 follow-up studies]. Bornschier, Chase-Dunn, and Rubinson (1978), which then built on the essays by Chase-Dunn (1975) and Rubinson (1978), were the first to study introducing the concept of MNC penetration as major operationalizations of dependency theory. This essay initiated 185 follow-up studies, all published in the major global peer reviewed social science journals, and the later essay, Bornschier/Ballmer-Cao, devoted to the issue of economic inequality as a consequence of MNC penetration, 74 studies¹⁷. Later tests of the Bornschier hypotheses could nothing but support and refine the original argument, independently from the research design (see *inter alia* Beer, 1999; Kentor, 1998; Tausch and Prager, 1993, just to mention a few).

It is important to emphasize as well that the independent dependency theory variables under scrutiny here must not be confounded with the Kearney-Index oriented research results on globalization; for our present independent variables measure the dependent insertion of countries into the world economy, while the Kearney index has much to do with openness, connectivity, and also infrastructure (see Kearney A. T. 2002; 2003; furthermore Addison and Heshmati, 2003; Heshmati, 2006, 2007; Heshmati and Tausch, 2007). The Kearney Index measures, besides the dimension of foreign direct investment, government transfers; Gross Domestic Product; international organization membership; international travel; internet hosts; internet users; peacekeeping missions; population; remittances and personal transfers; secure Internet servers; telephone traffic; trade; and treaties. Not surprisingly, in 2007 the ten most globalized countries according to the Kearney methodology were Singapore, Hong Kong, the Netherlands, Switzerland, and Ireland, followed by Denmark, the United States, Canada, Jordan and Estonia.¹⁸ The typical peripheries and semi-peripheries of the world system are generally ranked very low on the Kearney index.

By and large, our present research results support the original dependency theory arguments, reported in Bornschier, Chase-Dunn, and Rubinson (1978), and Bornschier/Ballmer-Cao, which were based on analyses of the then “B-phase” in the waning Kondratiev cycle from 1960 to the mid 1970s, for the current period in the world economy. The fact that some research results, reported in the literature, do not exactly correspond to other research results, must be qualified in the light of the following phenomena:

- The time frame of the study in the 50 to 60 year long wave economic Kondratiev cycle,
- The sample composition of the study, and
- The influence of other predictors, like development level, urbanization rate etc.

¹⁷ ISI Web of Knowledge, Thomson Reuters, as available at Innsbruck University Library, Austria

¹⁸ <http://www.atkearney.com/index.php/News-media/hong-kong-jordan-and-estonia-debut-among-the-top-10-in-expanded-ranking-of-the-worlds-most-globalized-countries.htm>

Arguments in the literature, which stress that cycle time plays an important role in the logic of development, can be found, among *alia*, in Bobróvnikov (2004), Bornschier (1996), and Tausch and Herrmann (2001). Our cross-national SPSS XV results support dependency thinking, but they do refine the analysis in important ways. Foreign savings, in a neo-Keynesian fashion, can be an important asset in the development process and contribute significantly and positively towards the positive performance of countries on the following performance index indicators, in many ways alleviating the social tensions, which arise out of a savings process, based on internal savings: Global Lisbon Index; political rights; civil liberty, freedom from a high percentage of people not expected to survive age 60; life expectancy; freedom from high CO2 emissions per capita; the Gender Development Index GDI; and the Human Development Index, HDI. However, the performance of foreign savings for the employment performance of a country is significantly negative, reflecting the partial correctness of the many reservations, which dependency authors like Paul Israel Singer had against a too high reliance on foreign savings.

The next indicator on our list of dependency-oriented research variables is low comparative international price levels. As it is well-known from the literature, especially Pan Yotopoulos (2005) has shown in his works what he perceives as the negative effects of low comparative price levels; while the mainstream of pro-globalist economists would regard them, just as foreign savings and multinational corporation penetration, as a positive development asset. However, our empirical evidence reveals that these low comparative price levels, as correctly predicted by Yotopoulos, negatively affect the environmental balance of poorer countries. The argument made by Yotopoulos and Sawada (2005) is worthwhile remembering here: currency substitution represents an asymmetric demand from Mexicans to hold dollars as a store of value, a demand that is not reciprocated by Americans holding pesos as a hedge against the devaluation of the dollar. Yotopoulos and Sawada go on to say:

“In free currency markets hard currencies fluctuate, while soft currencies depreciate systematically (...) The alternative scenario deprives devaluation of any of its remedial properties that in the conventional view lead to a process of stable interactions and equilibrium [...] Mexico cannot service its foreign debt from the proceeds of producing non-tradables. These are traded in pesos. It has instead to shift resources away from the non-tradable sector to produce tradable output in order to procure the dollars for servicing the debt (...) The process (...) can create a negative feedback loop that leads to resource misallocation in soft-currency countries (...) This shift of resources represents misallocation and produces inefficiency and output losses (...) Distortions inherent in free currency markets lead to a systematic devaluation of soft currencies – to “high“ nominal exchange rates. Devaluation of the exchange rate means increasing prices of tradables and leads to increased exports. But not all exports are a bargain to produce compared to the alternative of producing non-tradables (...) Countries graduate from being exporters of sugar and copra to exporting their teak forests, and on to systematically exporting nurses and doctors, while they remain underdeveloped all the same. If this happens, it may represent competitive devaluation trade as opposed to comparative advantage trade.”

The often-hailed beneficial effects of foreign capital penetration do not materialize at all, thus re-iterating a consensus of the almost 200 studies, now having been published globally on the original Bornschier research findings from the late 1970s and early

1980s. There are no positive effects on our 18 indicators (17 components and 1 final combined indicator) of development, and as correctly predicted by the dependency literature in the tradition of Volker Bornschier, Christopher K. Chase-Dunn and Richard Rubinson, social polarization dramatically increases by a development model, based on a very high foreign capital penetration. The significant negative effects on the development performance in our study are: civil liberty; eco-social market economy; freedom from CO2 emissions per capita; political rights, employment; and the Global Lisbon Index.

Globalization critics often portrayed World Bank pension reforms in many countries around the globe as the ultimate triumph of global capitalism and the apotheosis of financial capital (for a critique of the current debate, see Tausch, 2007). However, our analysis shows that such dire predictions are not true and that the eco-social balance of the economy is positively and significantly affected by such reforms, most probably because such pension reforms usually go hand in hand with very profound and reformist changes in the overall price mechanism.

Our analysis also sheds new light on the often-contested dimensions of culture, geography, and development history in the broadest sense. Let us start with the empirical test of the stream of literature, influenced by Samuel Huntington (1996) and his hypothesis that Islam is absolutely incompatible with the development of a modern, democratic society and economy. Our results suggest that Muslim culture has by contrast even the following positive and significant effects on the development performance, as measured by the following performance index indicators: freedom from a high quintile ratio; and freedom from a high percentage of people not expected to survive age 60.

Thus, it can be shown that income redistribution and basic human needs – *ceteris paribus* – are positively influenced especially by the manifold Muslim welfare foundations, which positively affect the outcomes on this dimension. But Muslim societies, however, suffer – again *ceteris paribus* – from deficits along the three-fold front of “new social problems” – the environment, gender, and human rights, as partially and correctly already predicted by the writings of Inglehart (2007) and his school: the Global Lisbon Index; the ESI-Index; female economic activity rates as % of male economic activity rates; civil liberty; political rights; and the Gender Empowerment Index (GEM) are the “Achilles heels” of the “real existing Muslim societies” today. This is far away from the dire generalist predictions, offered by Huntington, and an invitation to global Islam to develop positions on the environment, gender and human rights.

Long-term European Union membership, according to our analysis, has the following positive effects on development and no significant negative effects, showing that the European Union – especially its old center of 15 countries – can correctly claim global leadership in the environmental protection process: freedom from CO2 emissions per capita; and the eco-social market economy (GDP output per kg energy use).

Now let us move towards the dimension of economic policy. Neoliberals are right in maintaining that economic freedom is a sound and robust requirement to achieve several dimensions of development, and that state interventions negatively and significantly affect the following performances: economic growth, 1990-2003; the Global Lisbon Index; political rights; and civil liberty are all negatively influenced by

state interventions. Interestingly enough, and *ceteris paribus* – there are no negative effects of economic freedom.

Now let us move towards the dimension of development history. This often puzzling question can now be answered in the following sense. Modernization – i.e. rising income levels (ln GDP per capita) have the strong expected following positive effects on the development performance in the following dimensions: HPI Happy Planet Index; freedom from CO2 emissions per capita; freedom from a high EF, ecological footprint; freedom from a high percentage of people not expected to survive age 60; life expectancy, 1995-2000; and the HDI 2005.

Economic maturity, or if you wish and prefer, modernity, i.e. $[\ln(\text{GDP/capita})]^2$, is good for the following performances, measured by the following performance indicators, as defined in this study: female economic activity rates as a percentage of male economic activity rates; the Gender Empowerment Measure, GEM; freedom from a high quintile ratio (share of income/consumption richest 20% to poorest 20%); and the eco-social market economy (GDP output per kg energy use).

Now let us move towards the darker sides of the process of development. Modernization – i.e. rising income levels (ln GDP/capita) have the strong negative effects on the development performance in the following dimensions, quite in line with an extended Kuznets (1940 and 1955) function of inequality, especially negatively affecting the gender balance of society. Women are the first and main losers of any modernization process, and modernization negatively affects the freedom from a high quintile ratio (share of income/consumption richest 20% to poorest 20%); the GEM 2006; and female economic activity rate as % of male economic activity rate.

Economic maturity, $[\ln(\text{GDP/capita})]^2$, is bad for the ecological and sustainable development performance, measured by the following indicators, especially showing the severe contradictions and cracks in the fabric of very advanced societies: life expectancy; freedom from a high percentage of people not expected to survive age 60; freedom from EF, ecological footprint; freedom from high CO2 emissions per capita; and HPI, the Happy Planet Index.

One of the dire consequences of our empirical analysis is also the fact, that not only modernization and modernity have their contradictions, but also the process of urbanization. Culturalist discourse in many Western countries often blames Islam for these phenomena, which in reality arise out of the combination of modernization/modernity and urbanization. Urbanization has no positive and the following negative significant consequences for: political rights; civil liberty; freedom from high CO2 emissions per capita; the Global Lisbon Index; female economic activity rates as % of male economic activity rates; and economic growth, 1990-2003.

Thus, summing up on these tendencies, all predicted by the pessimistic variants of “modernization sociology” in the 1960s, would be to state that our analysis vindicates the very pessimistic modernization analysis by Huntington in 1968 – against the Huntington analysis of Islam, which Huntington published in 1996.

The transition from state socialism to capitalism has the following positive significant trade-offs to the positive development performance on these indicators. These positive trade-offs are still to be regarded as a legacy of former Communist times and their tight net of social security in the framework of a totalitarian or semi-totalitarian dictatorship:

female economic activity rates as % of male economic activity rates; freedom from high quintile ratios (share of income/consumption richest 20% to poorest 20%); the GDI 2006; the HDI 2005; life expectancy, 1995-2000; and the freedom from a high percentage of people not expected to survive age 60.

The negative significant trade-offs of transition to development performance are in the following areas, reflecting the dire consequences of state socialism for the environment and for people's overall happiness: freedom from high CO2 emissions per capita; freedom from EF, ecological footprint; the HPI Happy Planet Index; and the eco-social market economy (GDP output per kg energy use).

Last, but not least, we should mention the significant negative effects of what certainly cannot be changed by deliberate rational policy – the status of a country as a landlocked nation. Landlocked countries dismally perform on the following development indicators: the HDI; life expectancy; the GDI; freedom from a high percentage of people not expected to survive age 60; the Global Lisbon Index; political rights; and economic growth, 1990-2003.

The results from our regional growth analysis for the EU-27 by and large also support the early findings of dependency-oriented cross-national development research. At the 5% significance level, MNC employment dependence significantly blocks economic growth, is detrimental to unemployment reduction, and finally significantly and negatively affects the regional Lisbon performance.

7. Perspectives and conclusions

A thorough re-thinking of basic premises of policy-making in Europe is thus necessary. The Swedish EU-Presidency in its non-paper on the post-2010 Lisbon strategy proposed that the EU and the Member States should focus on and deliver in the following areas in 2010–2020:

- Promoting external and internal openness, sound competition and a well-functioning single market.
- Ensuring macroeconomic stability and sustainable public finances.
- Making full use of the labor supply potential and fulfilling the target of full employment, while strengthening social cohesion.
- Promoting investment in human capital and research.
- Creating an eco-efficient business society and improving the innovation and business climate.
- Developing a sustainable energy supply and curbing climate impact

Our analysis, by contrast, showed that the ultra-liberal strategy of opening markets is not the solution, but very much part of the problem of the European *malaise*. Fernando Henrique Cardoso was absolutely right in predicting the following processes to happen:

- There is a financial and technological penetration by the developed capitalist centers of the countries of the periphery and semi-periphery,
- This produces an unbalanced economic structure both within the peripheral societies and between them and the centers,
- This leads to limitations on self-sustained growth in the periphery,

- This favors the appearance of specific patterns of class relations, and
- These require modifications in the role of the state to guarantee both the functioning of the economy and the political articulation of a society, which contains, within itself, foci of inarticulateness and structural imbalance (Cardoso, 1979).

Instead of concentrating on Maastricht and its austerity program, foreign savings, in a neo-Keynesian fashion, can be an important asset in the development process and contribute significantly and positively towards the positive performance of countries on several key performance indicators: the Global Lisbon Index; political rights, civil liberties, survival at age 60, life expectancy; CO2 emissions reduction, the gender development index and the human development index.

Lowering comparative international price levels, part and parcel of the 14 main structural EU-Commission Lisbon indicators, negatively affects the environmental balance of poorer countries.

Also, the often-hailed beneficial effects of foreign capital penetration do not materialize. There are no positive effects on our 18 indicators (17 components and 1 final combined indicator) of development, and as correctly predicted by the dependency literature in the tradition of Osvaldo Sunkel, social polarization dramatically increases by a development model, based on a very high foreign capital penetration.

Our results also suggest that migration pessimism in Europe is baseless and that Muslim culture has several good and significant effects on the development performance, as measured by improving income distribution and survival. Muslim societies, however, suffer from deficits along the “new social problems” – the environment, gender, and human rights.

The European Union can, according to our analysis, correctly claim global leadership in the environmental protection process, as measured by the performances on the CO2 emissions per capita reduction indicator; and the eco-social market economy (GDP output per kg energy use). This “comparative advantage” of the European Union however is threatened in our opinion by the policies of unfettered and dependent insertion into the structures of the world economy, as recently emphasized as well by the studies Brand (2005), Brand and Goerg (2003) and Brand *et al.* (2008).

There are some historical considerations that must be taken into account as well, which strongly speak in favor of our quantitative analysis, presented in this essay. Europe is not engaged in the first Lisbon race of its kind to catch up with America. Much of the 19th Century and the first half of the 20th Century witnessed a European decline *vis-à-vis* the US, and only the post-war period after 1945 saw a relative closing of the gap, that began to widen again after 1973.

Andre Gunder Frank has implied for a long time that Europe’s quest has to be seen in the larger perspective of Asia’s re-ascent in the world system. The United Nations Economic Commission for Latin America, ECLAC/CEPAL, in its path-breaking essay “*Globalización y desarrollo*” (2002)¹⁹ provided estimates that dramatically support

¹⁹ <http://www.eclac.cl/cgi-bin/getProd.asp?xml=/publicaciones/xml/6/10026/P10026.xml&xsl=/tpl/p9f.xsl&base=/MDG/tpl/top-bottom.xsl>

such a view that stresses the simultaneousness of the ascent of Asia from the 1950s onwards with the decline of Europe after 1973 in the world system (Table 4).

Insert Table 4 Gaps between Europe and USA about here

Usually, world systems theories maintain that the present ongoing era of globalization already has its parallel in the 19th Century. The UN CEPAL/ECLAC data neatly demonstrate that these epochs of globalization in the 19th Century and after 1973 shifted incomes relatively away from Western Europe, Eastern Europe and Japan and in favor of the United States and the “dominions”, while the era of regulation after 1945 (Arrighi, 1995) clearly re-allocated relative incomes to the West Europeans, to the East Europeans and the Japanese. Latin America also gained during the era of import substitution from around 1930 to around 1973.

If the explanation of the European malaise (high unemployment, low growth) by the neo-liberal school were right (over-regulation causing the crisis) then there is no way to explain how in a period of still larger European regulation during the 1950s, 1960s and early 1970s European growth was higher and European unemployment was lower than in the United States, which always was less regulated than the EU! With more and more deregulation, the gap between Europe and America does not close!

One further important consequence of this analysis is the re-discovery of the issue of European industrial policy in the framework of an otherwise relatively free economy, which determines in the end the coefficients of MNC penetration. Thus the old critical questions addressed in the direction of neo-classical theory by such economists as Celso Furtado, Michal Kalecki, Gunnar Myrdal, Francois Perroux, Raul Prebisch, Paul Rosenstein-Rodan, Kurt Rothschild, Dudley Seers, Hans Singer and others can be taken up anew. De-regulation helps, but it helps the dominant center to maintain and even increase its leading position, and certainly not the technologically and politically weaker nations of the periphery and semi-periphery. So, it is French former EU-Commission President Jacques Delors (1992) and not economics Nobel laureate Professor Krugman, who seems to have gained the upper hand in the debate started by Professor Paul Krugman in “*Foreign Affairs*” in 1994, when he said about Delors and his plans for a European industrial policy:

“In June 1993, Jacques Delors made a special presentation to the leaders of the nations of the European Community, meeting in Copenhagen, on the growing problem of European unemployment. Economists who study the European situation were curious to see what Delors, president of the EC Commission, would say. Most of them share more or less the same diagnosis of the European problem: the taxes and regulations imposed by Europe's elaborate welfare states have made employers reluctant to create new jobs, while the relatively generous level of unemployment benefits has made workers unwilling to accept the kinds of low-wage jobs that help keep unemployment comparatively low in the United States. The monetary difficulties associated with preserving the European Monetary System in the face of the costs of German reunification have reinforced this structural problem.

It is a persuasive diagnosis, but a politically explosive one, and everyone wanted to see how Delors would handle it. Would he dare tell European leaders that their efforts to pursue economic justice have produced unemployment as an unintended by-product? Would he admit that the EMS could be sustained only at the cost of a recession and

face the implications of that admission for European monetary union?

Guess what? Delors didn't confront the problems of either the welfare state or the EMS. He explained that the root cause of European unemployment was a lack of competitiveness with the United States and Japan and that the solution was a program of investment in infrastructure and high technology.

It was a disappointing evasion, but not a surprising one. After all, the rhetoric of competitiveness, the view that, in the words of President Clinton, each nation is "like a big corporation competing in the global marketplace", has become pervasive among opinion leaders throughout the world. People who believe themselves to be sophisticated about the subject take it for granted that the economic problem facing any modern nation is essentially one of competing on world markets, that the United States and Japan are competitors in the same sense that Coca-Cola competes with Pepsi, and are unaware that anyone might seriously question that proposition. Every few months a new best-seller warns the American public of the dire consequences of losing the "race" for the 21st century. A whole industry of councils on competitiveness, "geo-economists" and managed trade theorists has sprung up in Washington. Many of these people, having diagnosed America's economic problems in much the same terms as Delors did Europe's, are now in the highest reaches of the Clinton administration formulating economic and trade policy for the United States. So Delors was using a language that was not only convenient but comfortable for him and a wide audience on both sides of the Atlantic." (<http://www.foreignaffairs.org/19940301faessay5094/paul-krugman/competitiveness-a-dangerous-obsession.html>)

But our results exactly open up, as we stated above, the box of industrial policy. Has Europe such a policy at all, or is European wisdom reduced to the magic number of 3% budget deficit, i.e. the Maastricht criteria? In our opinion, European policy-making finally should dare to take the globalization-critical organizations of "civil society" seriously (Brand, 2005; Brand and Raza, 2003; Brand *et al.*, 2000; Brand *et al.*, 2001). According to our analysis, industrial policy is the *sine qua* of a real European answer to United States Keynesian global power strategy that always put the well-being of the US transnational corporation ahead of ideology.

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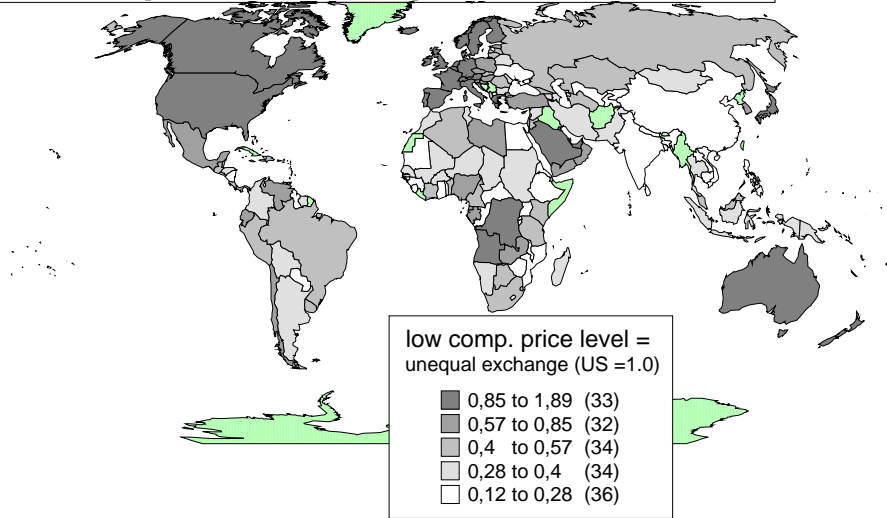
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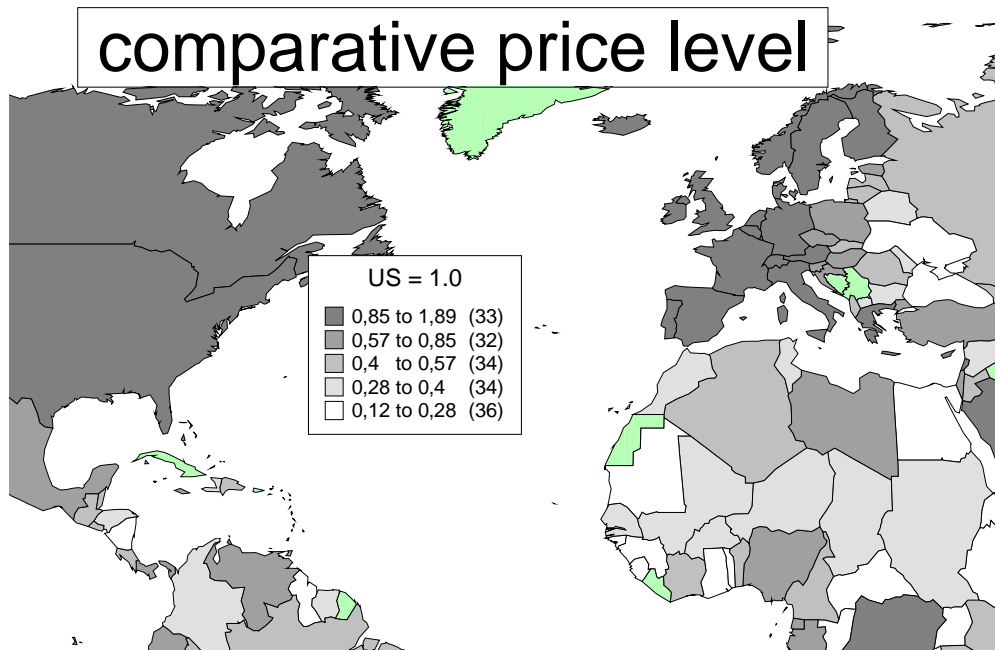
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Map 1.A Unequal transfer in the world system

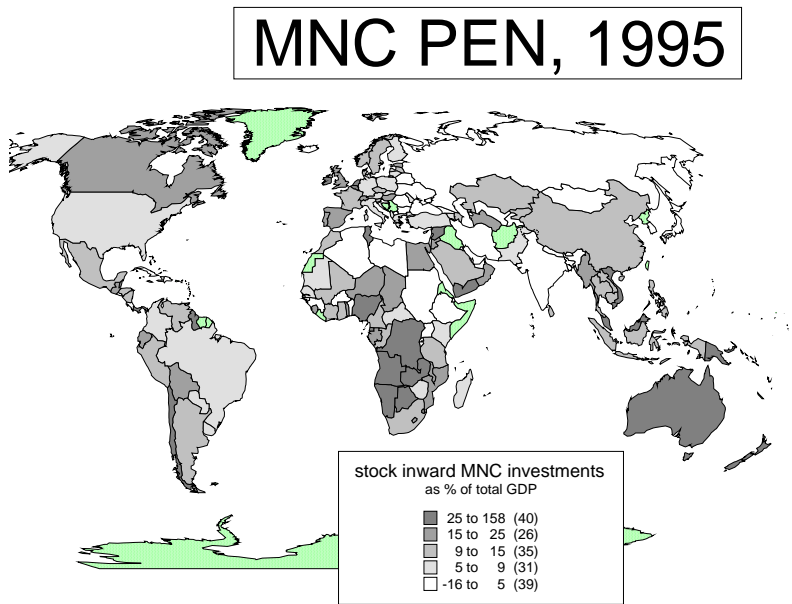
Comparative price levels



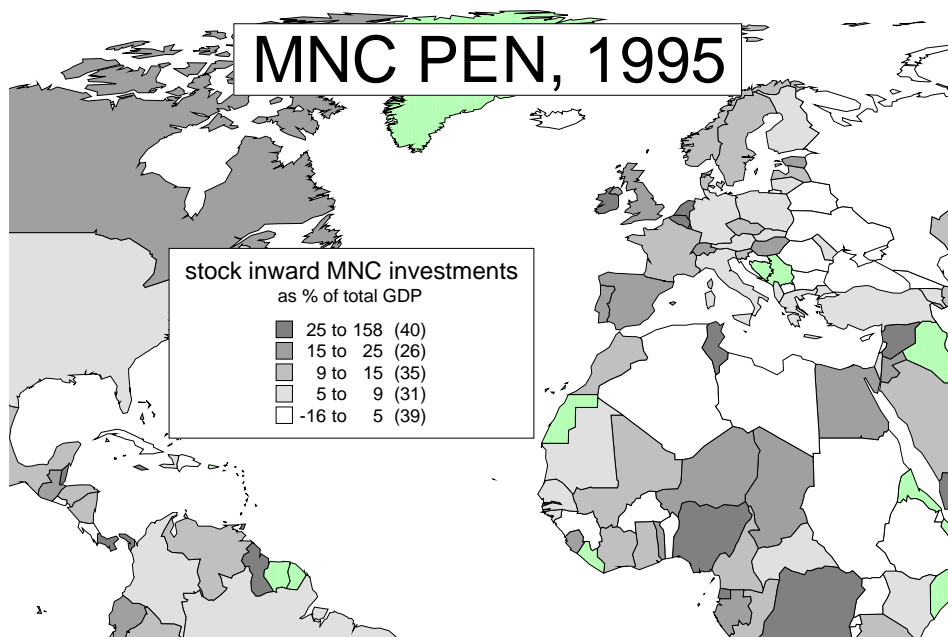
Map 1.B Unequal transfer in the world system, Close-up for Europe



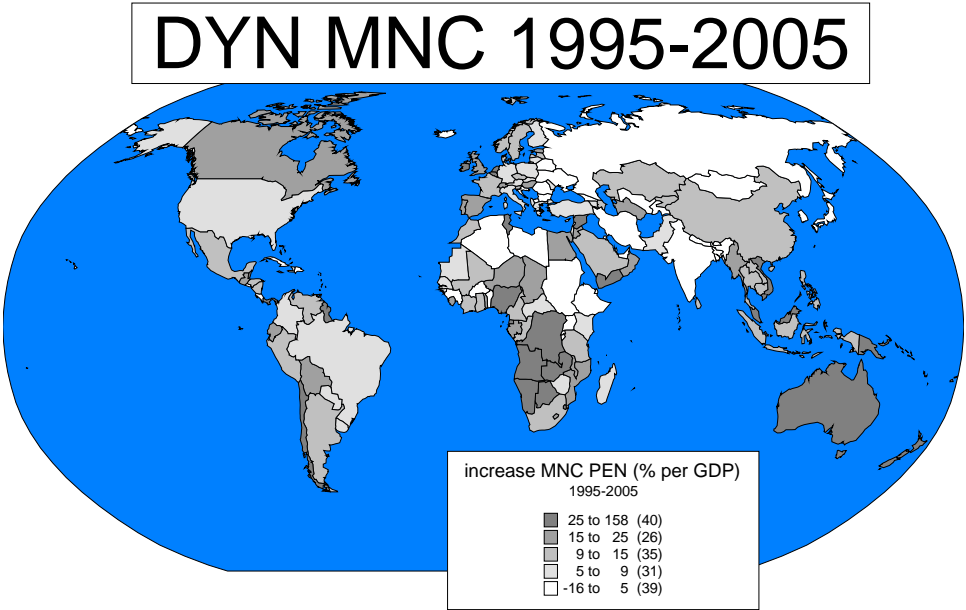
Map 2.A MNC penetration in the world system, 1995



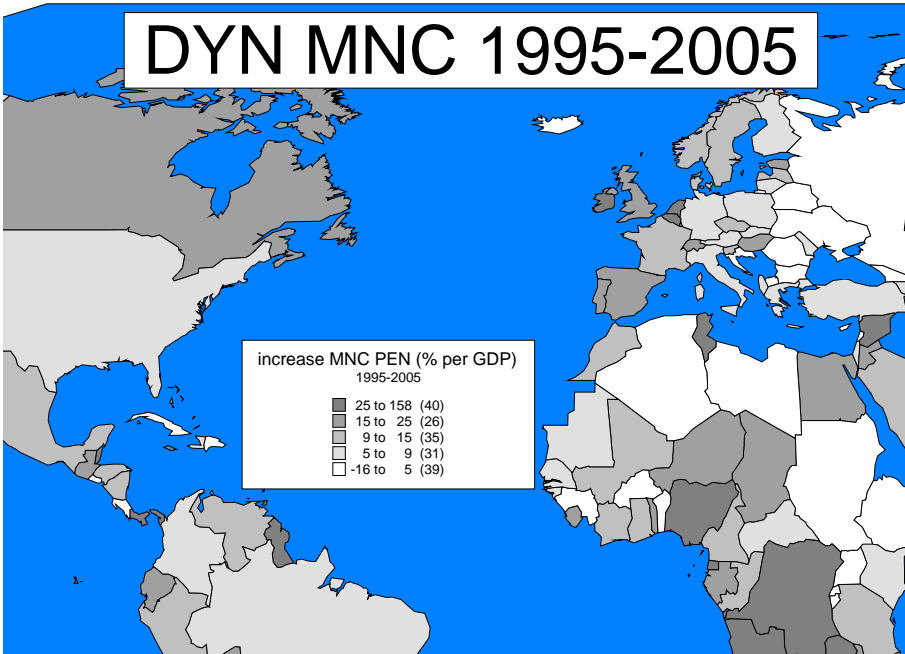
Map 2.B MNC penetration in the world system, Close-up for Europe



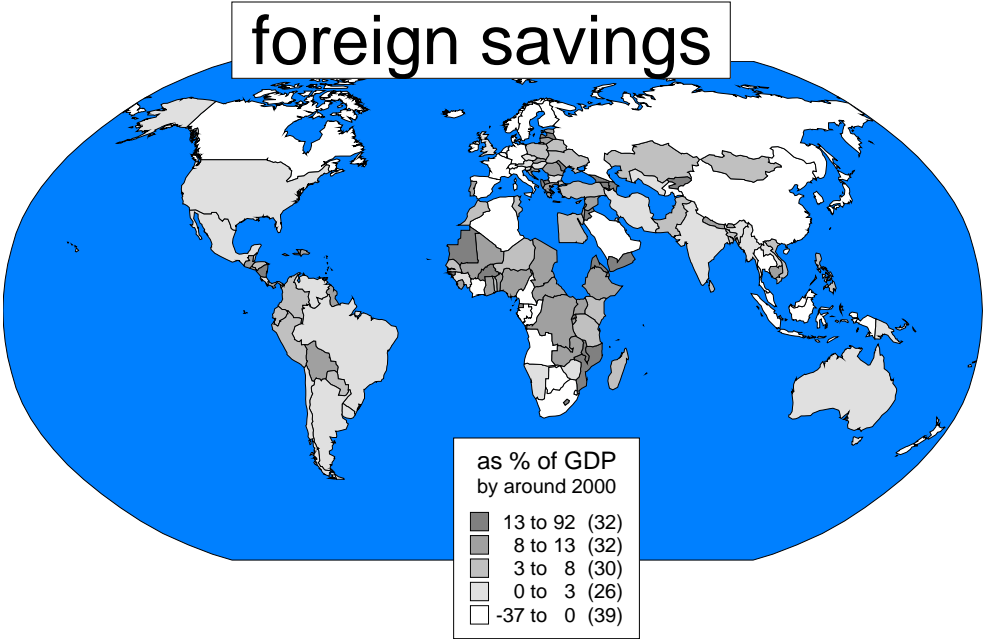
Map 2.C Increase of MNC penetration in the world system, 1995-2005



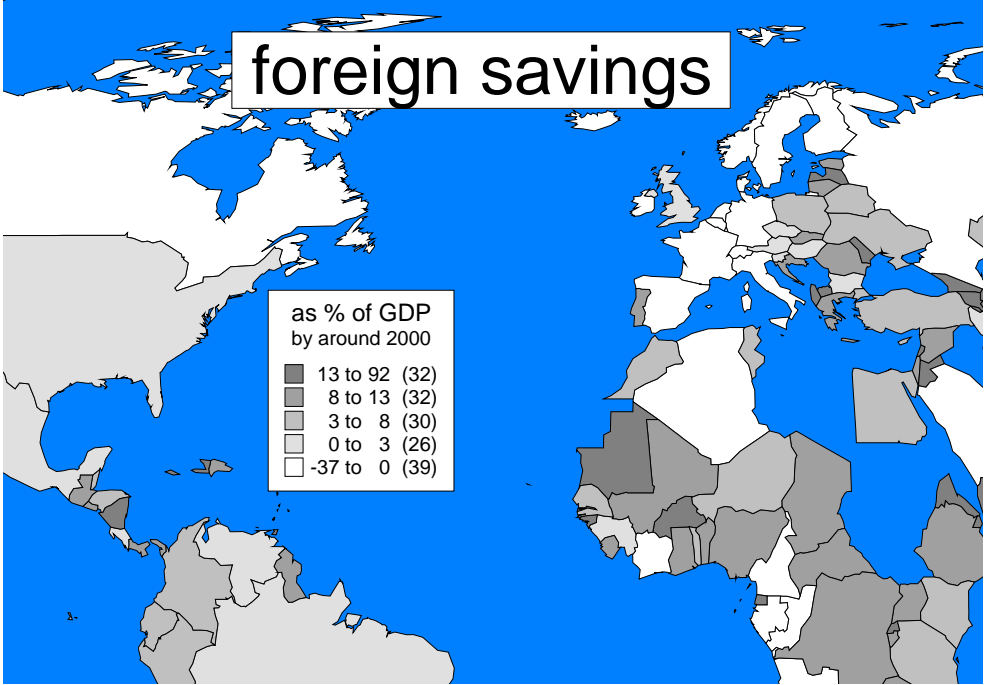
Map 2.D Increase of MNC penetration in the world system, 1995-2005, Close-up for Europe



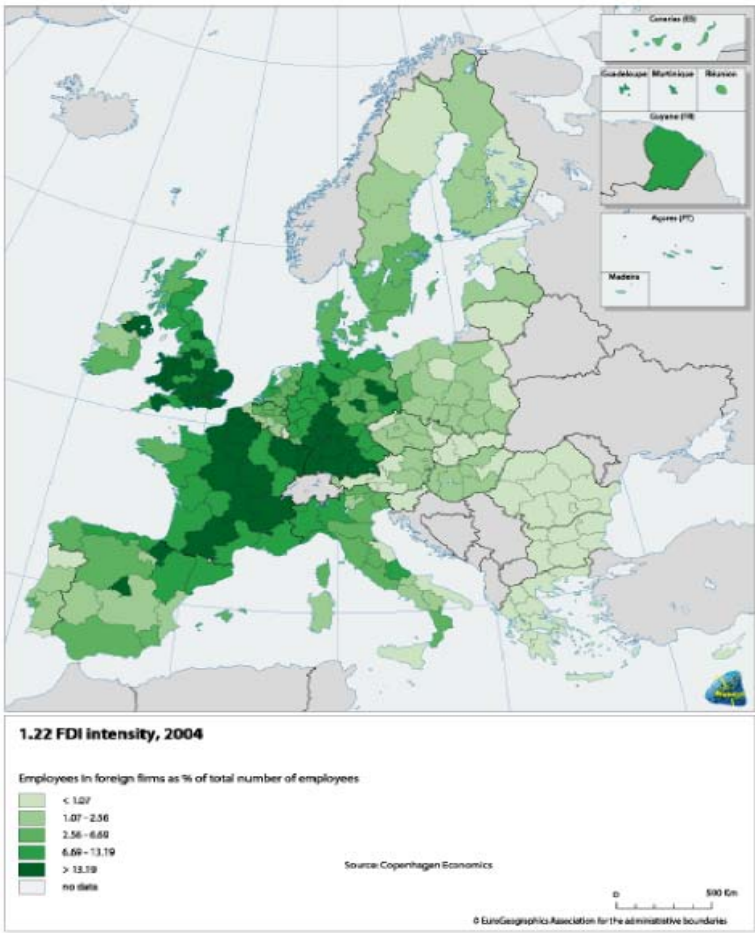
Map 3.A Foreign saving in the world system



Map 3.B Foreign saving in the world system, Close-up for Europe

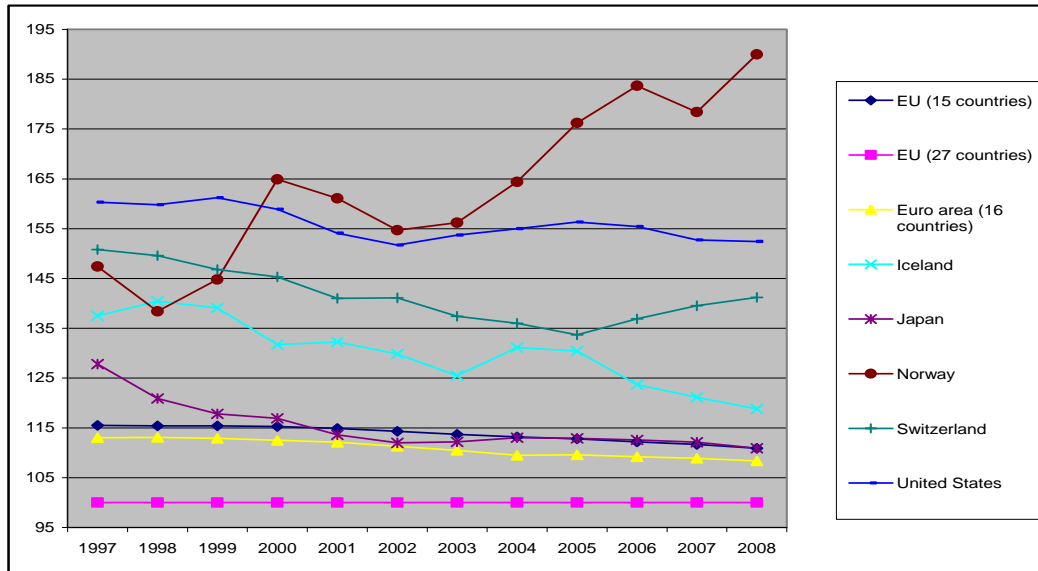


Map 4: Transnational Corporation's investment in Europe



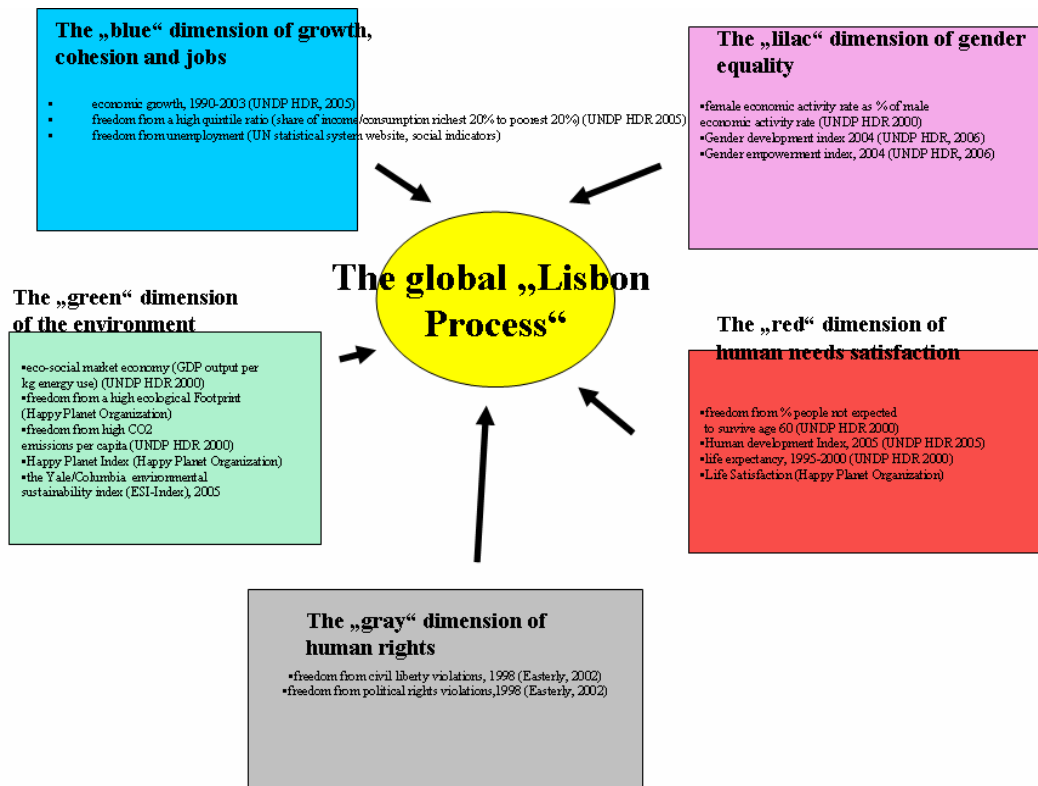
Source: European Commission (2007). Very dark colors: more than 13.19% MNC employment, very light colors: less than 1.07% MNC employment.

Graph 1: Europe still lags behind in terms of real purchasing power

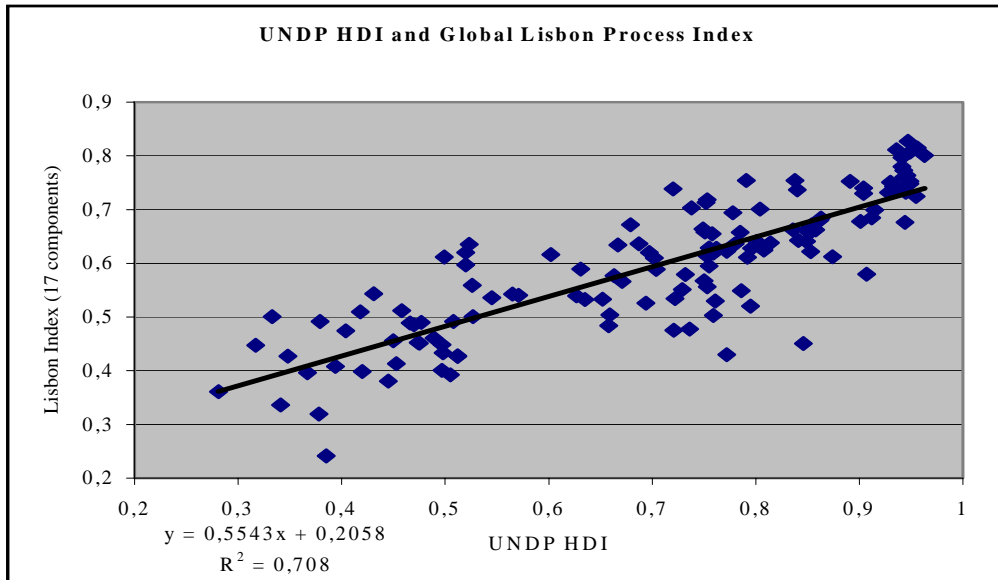


Source: our own compilations from Eurostat, freely available at: http://epp.eurostat.ec.europa.eu/portal/page/portal/structural_indicators/indicators/short_list.

Graph 2: The “global Lisbon process”



Graph 3: The Global Lisbon Process and its relationship with other important, combined international indicators



Graph 4: The final causal model

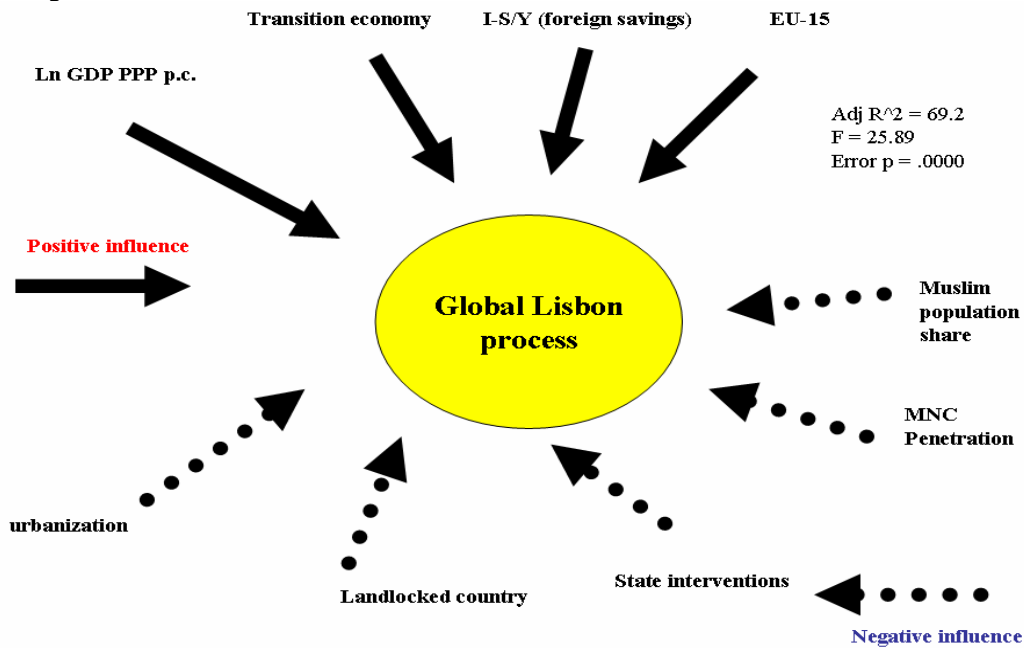


Table 1: The determinants of development performance (error p <0.05)

The significant effects of dependency	beta coeff. for develop. efficiency	Error Probability
1. foreign savings	(I-S)/GNP	(I-S)/GNP
PERFORMANCE INDEX: Political rights violations,1998	0.269	0.000
PERFORMANCE INDEX: Civil liberty violation, 1998	0.179	0.006
Global Lisbon Index	0.134	0.023
PERFORMANCE INDEX:% people not expected to survive age 60	0.132	0.022
PERFORMANCE INDEX: life expectancy, 1995-2000	0.129	0.013
PERFORMANCE INDEX:CO2 emissions per capita	0.121	0.046
PERFORMANCE INDEX:GDI 2006	0.075	0.039
PERFORMANCE INDEX:HDI 2005	0.067	0.040
PERFORMANCE INDEX: unemployment	-0.371	0.003
The significant effects of dependency	beta coeff. for develop. efficiency	Error Probability
2. Low comparative price levels (unequal exchange)	low comp. intl price level (ERD)	low comp. intl price level (ERD)
PERFORMANCE INDEX: eco-social market economy (GDP output per kg energy use)	-0.214	0.027
The significant effects of dependency	beta coeff. for develop. efficiency	Error Probability
3. The long-term structural effects of transnational corporation penetration	MNC PEN 1995	MNC PEN 1995
PERFORMANCE INDEX: Civil liberty violation, 1998	-0.117	0.047
PERFORMANCE INDEX: eco-social market economy (GDP output per kg energy use)	-0.126	0.045
Global Lisbon Index	-0.163	0.003
PERFORMANCE INDEX:CO2 emissions per capita	-0.168	0.002
PERFORMANCE INDEX: Political rights violations,1998	-0.184	0.003
PERFORMANCE INDEX: unemployment	-0.271	0.015
The significant effects of the "Huntington factor"	beta coeff. for develop. efficiency	Error Probability
4. The effects of the Muslim population share on global development	Muslims as % of total population	Muslims as % of total population
PERFORMANCE INDEX: quintile ratio (share of inc./cons richest 20% to poorest 20%)	0.216	0.033
PERFORMANCE INDEX:% people not expected to survive age 60	0.147	0.006
Global Lisbon Index	-0.122	0.024
PERFORMANCE INDEX:ESI-Index	-0.209	0.012
PERFORMANCE INDEX: female economic activity rate as % of males activity rate	-0.255	0.001
PERFORMANCE INDEX: Civil liberty violation, 1998	-0.285	0.000
PERFORMANCE INDEX: Political rights violations,1998	-0.326	0.000
PERFORMANCE INDEX:GEM 2006	-0.421	0.000

The significant effects of institutions	beta coeff. for develop. efficiency	Error Probability
5. EU-membership (EU-15)	EU-membership (EU-15)	EU-membership (EU-15)
PERFORMANCE INDEX:CO2 emissions per capita	0.154	0.014
PERFORMANCE INDEX: eco-social market economy (GDP output per kg energy use)	0.154	0.033
The significant effects of state intervention	beta coeff. for develop. efficiency	Error Probability
6. Absence of Economic Freedom, based on the Heritage Foundation Score	state interv.(absence of eco. freedom)	state interv.(absence of eco. freedom)
PERFORMANCE INDEX: economic growth, 1990-2003	-0.332	0.015
Global Lisbon Index	-0.350	0.000
PERFORMANCE INDEX: Political rights violations,1998	-0.461	0.000
PERFORMANCE INDEX: Civil liberty violation, 1998	-0.503	0.000
The significant effects of geography	beta coeff. for develop. efficiency	Error Probability
7. Landlocked status	landlocked	landlocked
PERFORMANCE INDEX:HDI 2005	-0.083	0.011
PERFORMANCE INDEX: life expectancy, 1995-2000	-0.105	0.039
PERFORMANCE INDEX:GDI 2006	-0.109	0.003
PERFORMANCE INDEX:% people not expected to survive age 60	-0.132	0.020
Global Lisbon Index	-0.155	0.008
PERFORMANCE INDEX: Political rights violations,1998	-0.172	0.009
PERFORMANCE INDEX: economic growth, 1990-2003	-0.245	0.008
The significant effects of the urbanization process	beta coeff. for develop. efficiency	Error Probability
8. Urbanization ratio, time-lagged	Urbanization ratio. 1990	Urbanization ratio. 1990
PERFORMANCE INDEX: Political rights violations,1998	-0.247	0.024
PERFORMANCE INDEX: Civil liberty violation, 1998	-0.257	0.016
PERFORMANCE INDEX:CO2 emissions per capita	-0.274	0.004
Global Lisbon Index	-0.292	0.003
PERFORMANCE INDEX: female economic activity rate as % of males activity rate	-0.358	0.006
PERFORMANCE INDEX: economic growth, 1990-2003	-0.547	0.000
The significant effects of the transition from state socialism to a market economy	beta coeff. for develop. efficiency	Error Probability
9. Transition economy	transition economy	transition economy
PERFORMANCE INDEX: female economic activity rate as % of males activity rate	0.506	0.000
PERFORMANCE INDEX: quintile ratio (share of inc/cons richest 20% to poorest 20%)	0.367	0.002
PERFORMANCE INDEX:GDI 2006	0.188	0.000
PERFORMANCE INDEX:HDI 2005	0.163	0.000

PERFORMANCE INDEX: life expectancy, 1995-2000	0.130	0.019
PERFORMANCE INDEX:% people not expected to survive age 60	0.121	0.049
PERFORMANCE INDEX:CO2 emissions per capita	-0.199	0.002
PERFORMANCE INDEX:EF ecological footprint	-0.204	0.000
PERFORMANCE INDEX:HPI Happy Planet Index	-0.222	0.028
PERFORMANCE INDEX: eco-social market economy (GDP output per kg energy use)	-0.264	0.000
The significant effects of the extended “ <i>Kuznets function</i> ”	beta coeff. for develop. efficiency	Error Probability
10. Rising development level, [ln GDP per capita]	ln(GDP PPP pc)	ln(GDP PPP pc)
PERFORMANCE INDEX:HPI Happy Planet Index	6.091	0.000
PERFORMANCE INDEX:CO2 emissions per capita	5.254	0.000
PERFORMANCE INDEX:EF ecological footprint	4.653	0.000
PERFORMANCE INDEX:% people not expected to survive age 60	2.796	0.001
PERFORMANCE INDEX: life expectancy, 1995-2000	2.557	0.001
PERFORMANCE INDEX:HDI 2005	1.779	0.000
PERFORMANCE INDEX: quintile ratio (share of inc/cons richest 20% to poorest 20%)	-3.871	0.018
PERFORMANCE INDEX:GEM 2006	-4.171	0.000
PERFORMANCE INDEX: female economic activity rate as % of males activity rate	-7.227	0.000
The significant effects of the extended “ <i>Kuznets function</i> ”	beta coeff. for develop. efficiency	Error Probability
11. Economic maturity, [ln GDP per capita]^2	ln (GDP PPP pc)^2	ln (GDP PPP pc)^2
PERFORMANCE INDEX: female economic activity rate as % of males activity rate	7.294	0.000
PERFORMANCE INDEX:GEM 2006	4.717	0.000
PERFORMANCE INDEX: quintile ratio (share of inc/cons richest 20% to poorest 20%)	4.303	0.011
PERFORMANCE INDEX: eco-social market economy (GDP output per kg energy use)	2.174	0.037
PERFORMANCE INDEX: life expectancy, 1995-2000	-1.829	0.024
PERFORMANCE INDEX:% people not expected to survive age 60	-2.081	0.021
PERFORMANCE INDEX:EF ecological footprint	-5.408	0.000
PERFORMANCE INDEX:CO2 emissions per capita	-5.990	0.000
PERFORMANCE INDEX:HPI Happy Planet Index	-6.083	0.000
The significant effects World-Bank-inspired three-pillar pension reforms	beta coeff. for develop. efficiency	Error Probability
12. World Bank pension reform	world bank pension reform	world bank pension reform
PERFORMANCE INDEX: eco-social market economy (GDP output per kg energy use)	0.153	0.013

Table 2: The global Lisbon race

Country code	Global Lisbon Index	world rank	country group
Switzerland	0.82715	1	EEA/EFTA
Iceland	0.81502	2	EEA/EFTA
Austria	0.81147	3	EU-27
Sweden	0.80700	4	EU-27
Norway	0.80098	5	EEA/EFTA
Denmark	0.79661	6	EU-27
Finland	0.77986	7	EU-27
Netherlands	0.77260	8	EU-27
Ireland	0.76347	9	EU-27
Japan	0.76012	10	other OECD democracies
Nada	0.75274	13	other OECD democracies
Cyprus	0.75226	14	EU-27
Germany	0.75064	15	EU-27
Luxembourg	0.74795	16	EU-27
Italy	0.74482	17	EU-27
New Zealand	0.74296	18	other OECD democracies
Slovenia	0.73988	19	EU-27
France	0.73665	21	EU-27
United Kingdom	0.73603	23	EU-27
Belgium	0.73226	24	EU-27
Spain	0.73157	25	EU-27
Portugal	0.72986	26	EU-27
Australia	0.72463	27	other OECD democracies
Israel	0.69906	32	other OECD democracies
Greece	0.68434	34	EU-27
Hungary	0.68010	36	EU-27
United States	0.67610	38	other OECD democracies
Poland	0.66212	42	EU-27
Slovakia	0.66206	43	EU-27
Latvia	0.66192	44	EU-27
Lithuania	0.65630	47	EU-27
Croatia	0.64230	49	EU-candidate
Romania	0.64060	51	EU-27
Bulgaria	0.62485	60	EU-27
Estonia	0.62176	63	EU-27
Czech Republic	0.61236	69	EU-27
Turkey	0.56760	80	EU-candidate

Table 3: The determinants of economic growth in Europe, 1995 – 2004 at a regional level

Predictors (independent variables)	beta weight: on economic growth rate	error prob: growth	beta weight: on employment of the aged	error prob: employment of the aged	beta weight: on avoiding unemployment	error prob: avoiding unemployment	beta weight: on regional Lisbon performance	error prob: Lisbon
% population under < 15 years	0.128	0.045	0.096	0.150	0.119	0.044	0.097	0.003
% population aged 15 – 64	0.240	0.001	-0.154	0.038	-0.089	0.173	-0.155	0.000
% agricultural employment	0.005	0.947	0.299	0.001	0.052	0.488	0.226	0.000
% adult pop. with higher education	0.443	0.000	0.441	0.000	0.169	0.011	0.302	0.000
% adult pop. with medium education	-0.079	0.262	-0.001	0.989	-0.135	0.038	0.182	0.000
FDI Intensity	-0.383	0.000	-0.148	0.052	-0.294	0.000	-0.207	0.000
GDP/head in PPS (Index, EU27=100), 2004	-0.537	0.051	1.094	0.000	1.300	0.000	1.921	0.000
GDP/head in PPS (Index, EU27=100), 2004 ²	0.449	0.060	-0.846	0.001	-0.724	0.001	-1.174	0.000
% industrial employment	0.026	0.703	0.020	0.779	0.126	0.045	0.127	0.000
Population density (in h./km ²), 2004	-0.224	0.002	-0.031	0.669	-0.229	0.000	-0.103	0.004
Population growth (average annual % change), 1995-2004	0.281	0.000	0.018	0.828	0.171	0.018	0.083	0.037
R&D expenditure (% of GDP), 2004	-0.083	0.234	0.137	0.062	0.000	0.997	0.179	0.000
Total population (1000 in h.), 2004	0.028	0.617	-0.137	0.021	-0.096	0.066	-0.060	0.037

	error <i>p</i>	R ²	n	F
Regional economic growth rate	0.000	42.10	218	13.16
Elder unemployment rate	0.000	36.40	218	10.55
Unemployment rate	0.000	50.60	218	18.08
Regional Lisbon process performance	0.000	85.10	218	95.97

Table 4: The evolution of the gap between Europe and the US since 1820 (real GDP per capita, United States = 100 for each year since 1820)

GDP per capita in ...	1820	1870	1913	1950	1973	1990	1998
Western Europe (in % of the US, AUS, NZ, CND)	102.60	81.20	66.10	49.50	71.30	71.50	68.50
United States, Australia, NZ, CND	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Japan (in % of the US, AUS, NZ, CND)	55.70	30.30	26.40	20.70	70.70	84.00	78.10
Asia (excl. Japan) (in % of the US, AUS, NZ, CND)	47.90	26.50	12.20	6.80	7.60	9.50	11.20
Latin Amer & Car. (in % of the US, AUS, NZ, CND)	55.40	28.70	28.70	27.50	28.00	22.60	22.20
Eastern Europe + former USSR (in % of the US, AUS, NZ, CND)	55.50	37.70	28.60	28.00	35.40	28.80	16.70
Africa (in % of the US, AUS, NZ, CND)	34.80	18.30	11.10	9.20	8.40	6.20	5.20

Source: our own calculations from CEPAL/ECLAC