DIMENSIONS OF GLOBALIZATION

RE-ORIENT? UNDERSTANDING CONTEMPORARY SHIFTS IN THE GLOBAL POLITICAL ECONOMY*

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This article analyses the logic of the current global economic crisis by using the IMF estimates of economic growth in 180 countries (IMF 2009), and links the results to the 'Re-Orient' approach, put forward by Frank (1998). With global economic gravitation shifting to the Indian Ocean / Pacific region, the article also analyses the role of MNC (foreign capital) penetration as the key variable of past quantitative dependency studies for contemporary economic growth and social performance. In a Schumpeterian fashion, MNC penetration reflects the power, which transnational oligopolies wield over local economies. Today, social polarization and stagnation increase as a consequence of the development model, based on high MNC penetration.

Keywords: *international relations and international political economy, economic development, technological change, growth, economic integration, oligopoly, market imperfection, cross-sectional models, spatial models, treatment effect models, quintile regressions.*

1. Introduction

Re-Orient (Frank 1998) might be the catchword for the analysis of the world order, currently emerging from the profoundest economic crisis the world has seen since the Great Depression, which started in 1929. The current economic and social crisis is a temptation for social scientists to reconsider well-established assumptions of the discipline. The depth of the crisis, especially in the Northern-Euro-Atlantic region of our globe, the current crisis of the Euro zone, triggered by events in Greece, and the apparent re-shifting in the center of gravitation of the world economy away from the Atlantic towards the Indian and the Pacific Ocean, where according to Frank the center of the world economy was situated from the very beginning to 1750, will renew not only the interest in the later work of Frank (1998), but also in the center-periphery models in the tradition of Prebisch (1950, 1983, 1988) and the UN Economic Commission for Latin America and the Caribbean (United Nations Economic Commission for Latin America, ECLAC/CEPAL, 2002), and dependency theories in the tradition of such authors as Cardoso (1977, 1979); Cardoso and Faletto (1971); Furtado (1963, 1964, 1976, 1983); Sunkel (1966, 1973, 1978); and in the quantitative research inspired by these theories, namely by Galtung (1971); Sunkel (1973); and later Chase-Dunn (1975), Bornschier, Chase-Dunn, and Rubinson (1978); and Bornschier and Ballmer-Cao (1979). All these theorists claimed that relations of dependency block a long-run economic growth and bring about a socially unbalanced development, short spurts of economic growth notwithstanding. Is dependency theory now put on its head, and is the former periphery and semi-periphery rushing ahead, while the center is stagnating?

This study aims at investigating these fundamental issues. To start with, we look at the recent IMF estimates and projections of economic growth. The world economy, to be sure, is confronting one of the biggest geographical shifts in its dynamics, resembling indeed the predictions of the 'Asian age', forwarded by Frank (1998). Frank was, as it is well known, originally co-formulating the basic convictions of the dependency/globalization critical school (Frank 1967). Later in his work he decidedly believed that the centers of gravitation of the world economy will forever shift back again to the Asia/Pacific regions, which, according to him, were always the world economic centers until around 1750.

The master variable in this study is MNC penetration. It is measuring the share of the value of cumulated foreign direct investments by transnational corporations in the gross domestic product of the host country, and is thus reflecting the power, which transnational oligopolies wield over local economies (UNCTAD 2009). Debates on the dependency/growth trade-off, carried on in the *American Journal of Sociology* (Firebaugh 1992; Dixon and Boswell 1996a, 1996b; Kentor 1998) and the *American Sociological Review* (Firebaugh and Beck 1994; De Soysa and Oneal 1999; Kentor and Boswell 2003), all dealing with research results from different time periods during the last Kondratiev cycle of the world economy were inconclusive about the true long-term growth effects of MNC penetration. Our interpretation of MNC penetration is Schumpeterian. As is well-known throughout the social sciences (Schumpeter 1908, 1912, 1934, 1939, 1950, 2009) it is strongly believed that capitalist development takes the form of *creative destruction;* and that innovation by entrepreneurs/companies is the force that sustains long-term economic growth, even as it destroys the value of established companies that enjoyed some degree of monopoly power. The monopolistic power, wielded by transnational corporations over their host countries and the marginalization of small and medium sized business, is precisely measured in our article by MNC penetration (see below), and MNC penetration is also a measure of the temporary market power of the waning market leaders, facing new inventions, championed by the global emerging competitors of the old centers in the North Atlantic arena, especially in China and India. A large share by transnational corporations in the GDP of a country is the anti-thesis to a large share of small and medium-sized enterprises, recognized by many as the engine of economic growth (see among others, the European Commission website on the issue of small and medium-sized enterprises, available at http://ec.europa.eu/enterprise/policies/sme/promoting-entrepreneurship/family-business/). The present study is thus the first in the literature, linking MNC penetration in the mid-1990s and its growth until 2005 with social and economic development in our contemporary period and the current world economic crisis. Increases in MNC penetration, 1995–2005, are simple percentage differences in MNC PEN ratios 2005 to 1995.

The rest of this study is organized as follows. In Section 2 we shortly outline the main theories under scrutiny here, namely Schumpeterian economic development theory; the five monopolies of the international system according to Amin (1997); world-system analysis in the tradition of Polanyi (1957); Arrighi (1995) and Wallerstein (2000); the analysis by Frank (1998); the dependency model, formulated by Cardoso (1979); and the analysis of transnational capitalism and national disintegration according to Sunkel (1973). MNC dependency, reflecting the economic, social and political power of transnational oligopolistic corporations over their host countries as the key to analyzing contemporary changes is discussed in Section 3. The data, the development of the research design and the regression analyses are presented in Section 4. We report the empirical results in Section 5. A final section concludes this study.

2. The Main Theories under Scrutiny Here

Reasons of space do not permit us to debate the vast sociological, political science and economic theory literature written on the subject of MNC penetration and economic and social development. Valuable, as these contributions may be, they were all linked in one form or the other on the logic of the A-phase and the B-phase of the rather short Kondratiev cycle 1973–2008 (35 years), each lasting also rather short Kuznets cycles of about 15–20 years duration. In our essay, we link the MNC penetration tradition with the Schumpeterian approach. The writings of Joseph Alois Schumpeter (1908, 1912, 1939, 2009), and later world system and dependency analyses by Amin (1976, 1994, 1997), Bornschier (1982), Cardoso (1979), Cardoso and Faletto (1971), Prebisch (1950, 1983), and Sunkel (2003), were always aware of the emergence of crises, cyclical imbalances, regional shifts and their possible causes and consequences, as well as of the rise and decline of entire regions and even continents in the process of capitalist development. The world economy thus returns to the 'old Galicia' of 1909, when and where the young Schumpeter started his job as a University Professor 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), gaining valuable insights into the nature of world development in the Galician periphery of the Empire, with all the 'creative destruction', which surrounded him. Several of his major works, like *The Nature and Essence of Theoretical Economics* (1908, translated in 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 and short experience at the outer rim (1909–1911) of the Empire.

As is well-known, according to Schumpeter (1908, 1912, 1934, 1939, 1942, 1950, 1954, 2009) the entrepreneur is the prime mover of economic development, which is cyclic in character, connecting innovations, cycles, and development. Schumpeter strongly believed in the very long, 50–60 year economic cycles, the Kondratiev waves (for empirical studies on Kondratiev waves, see the posthumous editions of Kondratiev's works in Kondratiev 1944, 1998; for a general analysis Devezas 2006; furthermore Bornschier 1996; Goldstein 1988; Tausch 2007, 2008; for a skeptical view see also Kuznets 1940). In particular, the contemporary Russian economist Aleksandr Bobrovnikov, whose writings are unfortunately largely overlooked in the West, put forward an interesting frame of reference, in fact linking the Kondratiev cycle debate with *dependencia* and later world systems theory. Bobrovnikov makes the important point that transnational capital flows during the beginning downswing in the centre to the periphery, where the belated cycle still allows huge profits; and during the belated periphery depression, transnational capital again flows to the centre, thus exacerbating the debt crisis in the periphery.

We would like to stress again that the capitalist development takes the form of 'creative destruction' (Schumpeter 1950). Innovation by entrepreneurs/companies is the force that sustains long-term economic growth, even as it destroys the value of established companies that enjoyed some degree of monopoly power. Successful innovation is a source of temporary market power, eroding the profits and position of old firms, yet ultimately losing to the pressure of the new inventions, championed by the competitors (for a formal model of Schumpeterian growth economics, see Aghion and Howitt 1992).

Like many other development theories of the first generation of development economists after the Second World War, whose stars began to rise long after Schumpeter already went to America, Mandelbaum (1945), Rosenstein-Rodan (1964), Roths-

child (1944), Singer (1975), Singer and Ansari (1988), Singer and Roy (1993) all shared with Schumpeter the observation that capitalism never was a smooth equilibrium process. Mandelbaum, Rosenstein-Rodan and Singer, and the early 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.

The international system more and more seems to resemble such a perpetual rise and fall of companies, regions, sectors, even nations. Several world systems approaches have taken up the basic idea of the Schumpeterian competition and stipulated that even the international system itself since the 1450s is characterized by hegemonies, international system de-concentration, the de-legitimation of the international order, and recurrent global wars over the hegemony in the system (see Devezas 2006; furthermore Arrighi 1995; Goldstein 1988; Tausch 2007; Wallerstein 2000). That currently economic growth dramatically shifts away from the North Atlantic arena and the states very closely linked to it to other regions of the world economy seems to indicate that such a major fundamental shift is taking place with the force of a real tsunami. Everywhere, the monopolies of power, which the old dominant transnational oligopolies wield, are eroding.

Enlightening, as critical political economy might be in times of global crises, there are also some profound contradictions of the ongoing shifts in the global political economy with some of what seems today the all too narrowly and stable, geographically defined foundations of 'dependency' and 'world systems research'. Let us recall here that for dependency and later world systems theory, going back to the writings of its four 'founding fathers' Amin (1994), Arrighi (1995), Frank (1967), and Wallerstein (2000) ascent and decline in world society is largely being determined by what Amin (1976, 1994, 1997) called the following 'five monopolies' of the international system:

- 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.

Did these monopolies erode before the current global crash? Is their erosion instrumental in the current downfall of the North Atlantic Economy and its global allies? If we assume that the 'five monopolies' were still in place in 2008, the hypothesis put forward by Amin of course does not explain us, when, how and why the global order is changing so rapidly nowadays, to the detriment of the centers (= holders of the five monopolies in 2008) and to the benefit of the periphery and semi-periphery during the global recession of 2009 and 2010. Let us also recall here that dependency authors generally explained backwardness and stagnation by the ever-growing dependent insertion of the global, ex-colonial South into the world economy. Starting with the writings of Raúl Prebisch (1950: 193; 1988) their leading spokespersons all would stress the unequal and socially imbalanced nature of development in these regions. Short-term spurts of growth notwithstanding, long-term growth in the countries of Africa, Asia and Latin America 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 (1957) after the First World War – also tended to confirm and expand this dependency argument (Wallerstein 2000). Capitalism in the periphery, like in the centers, 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.

Frank decidedly put this eternal division of the world into centers and peripheries into fundamental question by maintaining in his re-analysis of global economic history (Frank 1998) that the centers' fine hour of truth has come and that the centers will be dethroned by the new Asian/Pacific center of gravity of the world economy.

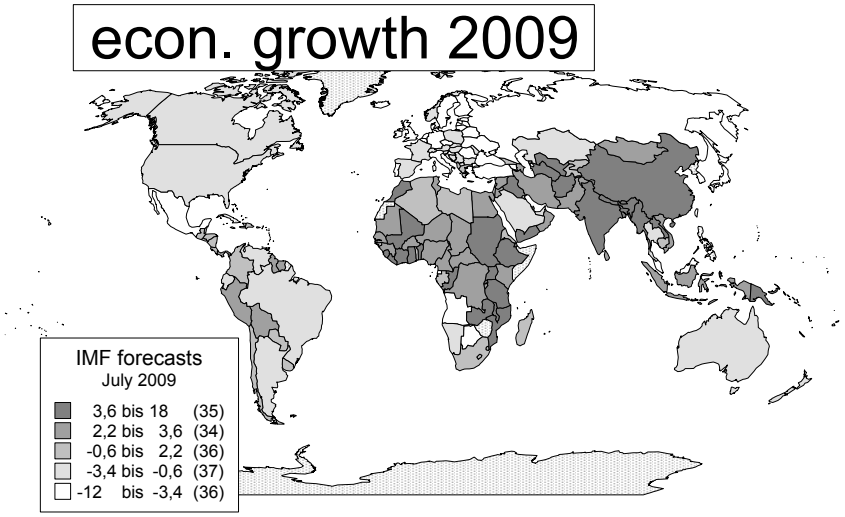
Cardoso once, at the height of the debate, summarized the quantifiable essence of dependency theories as follows:

- 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;
- 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).

The Chilean social scientist Osvaldo Sunkel, whose work is closely connected with the United Nations Economic Commission for Latin America (ECLA/CEPAL) was more cautious than most other dependency and world systems researchers by proposing in his *Transnational Capitalism and National Disintegration in Latin America* (Sunkel 1973) – the idea that transnational investment and integration might go hand in hand, under certain conditions, with an increasing global relative social polarization between rich and poor in the host countries of the evolving transnational system. In his 1973 essay, which we regard as a necessary *locus classicus* for the analysis of the political economy of the early 21st century he said:

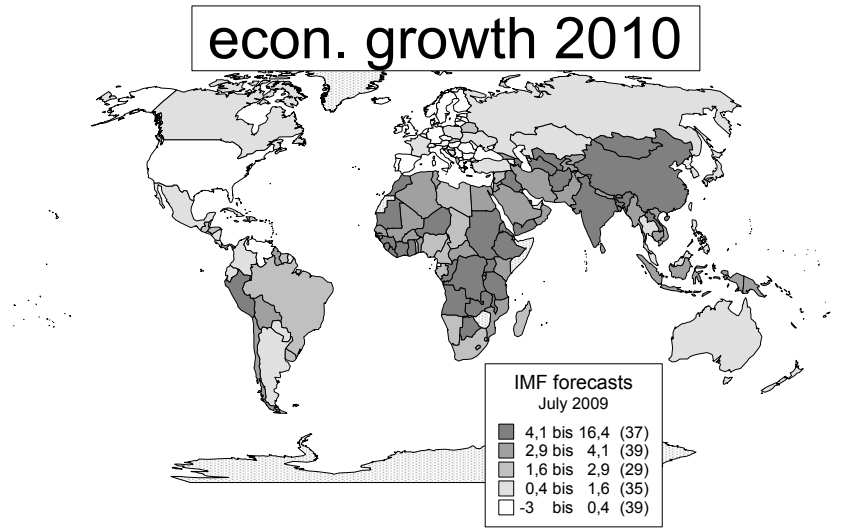
> The advancement of modernization introduces, so to speak, a wedge along the area dividing the integrated from the segregated segments. ... In this process, some national entrepreneurs are incorporated as executives into the new enterprises or those absorbed by the TRANCO (*i.e.* transnational corporations), 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. ... 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).

The world map of the estimates of economic growth in 2009 and 2010, which seem to confirm the fundamental shifts in world economic centers of gravity, and which underline the necessity to reflect some of the basic assumptions of the development theory discipline are shown in Map 1a and Map 1b.



Map 1a. Economic growth in the world system, 2009

Source: our own map from http://www.imf.org/external/pubs/ft/weo/2009/01/weodata/weoselgr.aspx.
Note: Bis is shorthand for 'ranging from … to'.



Map 1b. Economic growth in the world system, 2010

Source: our own map from http://www.imf.org/external/pubs/ft/weo/2010/01/weodata/weoselgr.aspx.
Note: Bis is shorthand for 'ranging from … to'.

3. MNC Dependency as the Key to Analyzing Contemporary Changes

MNC penetration thus measures the different shares of GDP, which 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 (Bornschier 1976, 1980a, 1980b, 1981, 1982, 1983, 2002; Bornschier and Ballmer-Cao 1979; Bornschier and Chase-Dunn 1985; Bornschier, Chase-Dunn, and Rubinson 1978). MNC penetration captures the power, which international oligopolies wield in the different countries of the world system, and it also measures dependency theory as expressed in Sunkel (1973) and Cardoso (1979).

There were indeed hundreds of attempts to quantitatively study this very simple and basic logic of dependency, which also can be linked to the formal economic models developed by the Polish political economist Michal Kalecki, many of them originally published already in the 1930s, 1940s and 1950s (Kalecki 1972, 1979; furthermore Rothschild 1954, 1957, 1958, 1959, 1964, 1965), stressing the linkage between monopoly power, the conditions of dependency (measured by Kalecki by raw material prices), and income distribution (measured by Kalecki by the wage share). A scientometric analysis of the vast dependency-oriented research literature in the major international (social) science journals revealed that as of March 30, 2010, 340 major international studies quoted the path-breaking Galtung analysis (1971), and further 73 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 217 follow-up studies), and Rubinson (1976) (which yielded 171 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 more systematically the concept of MNC penetration as major an operationalization of dependency theory. This essay initiated 187 follow-up studies, all published in the major global peer reviewed social science journals, and the later essay, Bornschier and Ballmer-Cao, devoted to the issue of economic inequality as a consequence of MNC penetration, 75 studies.[2] Later tests of the Bornschier hypotheses could nothing but support and refine the original argument, independently from the research design for different indicators and different time periods and different samples and different methods (see *inter alia* Beer 1999; Bornschier 1982, 2002; Dutt 1997; Heshmati 2006b; Kentor 1998; Klitgaard and Fedderke 1995; Tausch 2003; Tausch and Prager 1993; Tsai 1995, just to mention a few samples from this vast literature). Valuable, as this literature may be, it must never be overlooked that its results cover different time periods in the global Kondratiev cycles from 1929 to 1973 and from 1973 to 2008, and thus A-phase and B-phases of different Kondratiev cycles. It is important to emphasize here that MNC penetration must not be confounded with the Kearney-Index oriented research results on globalization, so common nowadays in the economic literature; for MNC penetration measures the oligopolistic control of transnational corporations over local markets, while the Kearney index has much to do with openness, connectivity, and also infrastructure (see Kearney *et al.* 2002, 2003; furthermore Addison and Heshmati 2004; Heshmati 2006a, 2007). The Kearney Index combines the dimen-

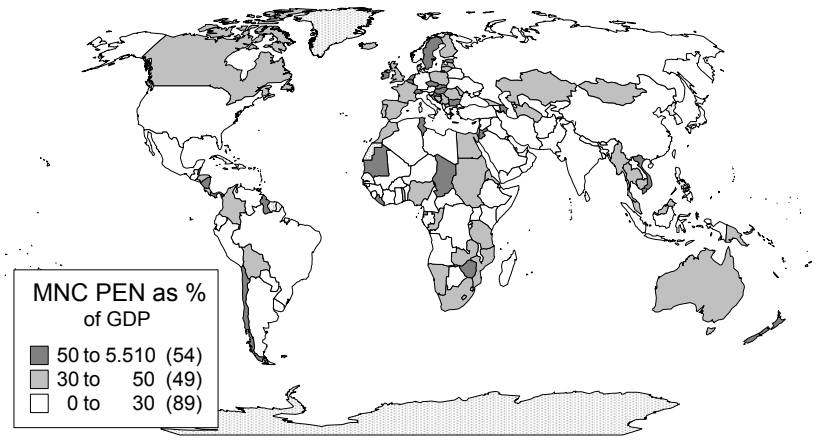
sion of foreign direct investment with government transfers, Gross Domestic Product, international organization membership, international travel, internet hosts, internet users, peacekeeping missions, population, remittances and personal transfers, secure Internet servers, telephone traffic, trade, and 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.[3] The typical peripheries and semi-peripheries of the world system are generally ranked very low on the Kearney index. The rank of the countries differ somewhat when a parametric approach is used where, unlike in the Kearney index, different weights are attached to different globalization index components (for details see Heshmati 2006a).

By and large, our present research results build on the very original quantitative dependency theory arguments, reported in Bornschier, Chase-Dunn, and Rubinson (1978), and Bornschier and Ballmer-Cao, which both were based on the analyses of the then 'B-phase' in the waning Kondratiev cycle from 1960 to the mid-1970s, and on the resumption of growth during the beginning A-phase in the 1970s, now being applied as well for the current period in the world economy. Our limited time period (*i.e.* IMF predictions for 2009 and 2010) is well comparable to the depression of the late 1970s. The fact that some later research results on MNC penetration, reported in the literature of the 1980s and 1990s, do not exactly correspond to other research results, must be qualified in the light of the following phenomena:

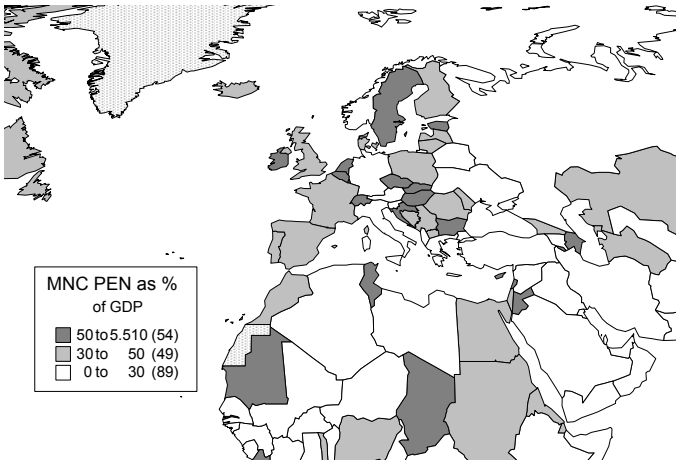
- the time frame of the study in the 50 to 60 year long wave economic Kondratiev cycle and in the shorter Kuznets cycles in the world economy since the oil crisis of 1973, with its very strong fluctuations;
- the differences of methods used and periods studied;
- the sample composition of the study by location and level of development of countries; and
- the influence of other predictors, like development level, urbanization rate *etc.*;
- the instability of reported research results, according the inclusion or exclusion of other important predictor variables, a fact, very well known to econometrics (Sala-i-Martin *et. al.* 2004).

Arguments in the literature, which stress that cycle space and time play an important role in the logic of development, can be already found, among *alia,* in Bobrovnikov (2004) and Bornschier (1996). Cycle time requires certain conditions to be fulfilled to be able to be responsive to a development wave and attraction of development forces. Our study is the first world-system-wide study in the literature, linking MNC penetration in the mid-1990s and its growth until 2005 with social and economic development in the contemporary world economic crisis.

Our geographical presentation of contemporary MNC penetration, based on UNCTAD *World Investment Report* data, will be kept to a minimum. In general terms, we observe today high levels of MNC penetration = high power concentration in the hands of the transnational corporations over the economies of their host countries in Western Europe, in some parts of Eastern Europe, in many parts of Latin America, Africa, and in Southeast Asia. MNC penetration is reported in Map 2a and Map 2b.



Map 2a. MNC penetration in the world system, 2006



Map 2b. MNC penetration in the world system, Europe 2006

While different authors disagree on the direction of the influence of MNC penetration on the human condition, most would underline the strong influence of MNC penetration on control of the natural resources, assets distribution and ownership, as well as employment, economic growth, income inequality and income distribution, technology, management and skill transfer and the overall development of nations.

4. Data and Research Design

The design of our study is based on usual, statistical package SPSS-XV ordinary least square (OLS) standard regressions of economic development (Durlauf *et al.* 2008; Sala-i-Martin *et. al.* 2004) in the research tradition of development accounting (see Barro 2003). The SPSS-OLS standard regressions specify a critical inclusion criterion of PIN = 5 % error probability and POUT = 10 % error probability.

In keeping with the research tradition, initiated by Seers and Öström (1983), Seers (1981), Seers, Schaffer, and Kiljunen (1979), and Seers, Vaitsos, and Kiljunen (1980)

about 'underdeveloped Europe' we, however, believe that it is impossible to separate the effects of MNC penetration on the 'center' and on the 'periphery', because center/periphery problems nowadays characterize the entire world economy and because the (former) centers, more and more, exhibit characteristics of semi-peripheries.

As in the original investigations by Volker Bornschier and his school, we control for the supposed short-term, dynamizing effects of foreign capital inflows (DYN MNC PEN) and for development level and its square, so that the effects of MNC penetration can be analyzed in the context of low, medium and high levels of development. We also estimate the effects of public education expenditure and of demography on our dependent variables. We distinguish here between the current percentages of world population as an indicator of current potential market size and the annual population growth rate, 1975–2005, as an indicator of the demographic dynamics of a given country.

4.1. The Data

The source of data used in this study is secondary databases of the United Nations organizations databases and foremost those managed by the IMF, UNCTAD, UNDP, UN Statistics and the USA-CIA. It contains all major countries with available socio-economic data on growth and its determinants. The choice of a country to be included in the final analysis (originally 183 countries[4]) coincides with the availability of data from our standard sources for socio-economic comparative growth and development analysis. For more details on the data sources and list of variables see data sources for selected variables of the final model (Appendix 1).

The data contain a number of key very well known variables on development and its indicators. These are grouped into development performance as dependent variables and determinants of development as explanatory variables. The six development performance variables include:

- economic growth, 1990–2005;
- life expectancy at birth 2000/2005;
- unemployment rate, latest available year (by around 2003/2004);
- RAT2020: quintile ratio (difference in the incomes between the richest and the poorest 20 per cent in society, by around 2003/2004);
- growth projection for 2010 as an indicator of the depth and dynamics of the current world economic crisis (IMF);[5]
- under-five mortality rate (per 1,000 live births) by around 2005.

The determinants of development performance listed above are selected among the followings:[6]

- Percent world population (by around 2004). This standard economic indicator is important for the understanding of the size of the market and its place in world society.
- Annual population growth rate, 1975–2005 (%). This standard demographic and economic indicator features also very prominently on most econometric studies of world development.
- MNC PEN increase in MNC penetration 1995–2005 (simple percentage change of MNC PEN 2005 over 1995). Together with MNC PEN, it corresponds to one of the key concepts of most sociological world systems theory inspired studies of world development.
- MNC PEN 1995 (standard UNCTAD measure of stocks of transnational investments per GDP).

- Public education expenditure per GDP (by around 2003). Human capital formation features very prominently in most econometric studies of global development.
- ln GDP per capita in PPP $ and its square (by around 2003) (ln GDP/capita in PPP).[2.] Such controls for development level correspond to standard practice in most published essays on global development.

The data covering all the sample of 183 countries are presented in alphabetic order, and all of the 6 dependent and the 7 independent variables at a glance are reported in Appendix 2. In order to conserve space, the square of lnGDP per capita (natural logarithm of GDP per capita) is excluded from the table. We find significant variations in the level of the variables among the countries. The data and its variations across countries are further discussed in the section on the analysis of the results.

4.2. The Models

The development performance model is specified as a function of the determinants of growth written as:

$$DevPerform_i = \beta_0 + \sum_{j=1}^{J} \beta_j X_{ji} + \varepsilon_i \quad (1)$$

where *DevPerform* represents each of the six development performance variables listed above for country i and X is J vector of determinants of development performance listed above, some of which are logarithmic, while others expressed in level or percentages. The β_0 and β_j are unknown parameters to be estimated to infer about the association and impact of the determinant of the development indicator. The ε is a random error term assumed to have a mean zero and constant variance. It captures the measurement error in the dependent variable and the effects of left out explanatory variables.

Due to the possible problems of multicollinearity between the explanatory variables and its effects in form of confounded effects of determinants and the difficulties in separation of the effects we used a univariate analysis instead of a multivariate regression analysis (Equation 1) where the model is written as:

$$DevPerform_i = \beta_0 + \beta_j X_{ji} + \varepsilon_i \quad (2)$$

where each of the components is defined previously.

5. Analysis of the Estimation Results

The final models are based on multivariate regression analysis estimating the effects of the determinants of growth simultaneously and conditional on other determinants. In multivariate regression analysis, multicollinearity can be a serious problem.

5.1. Univariate Analysis Results

In order to isolate individual factors effects of economic growth (measured as GDP per capita) we also utilize the univariate approach as well. It helps to identify the significant predictors of the dependent variables. Here the set of dependent and independent variables are the same as those presented previously. The independent variables are classified both as dimensions and their corresponding variable labels. The unconditional beta weights and error probabilities are reported in Table 1.

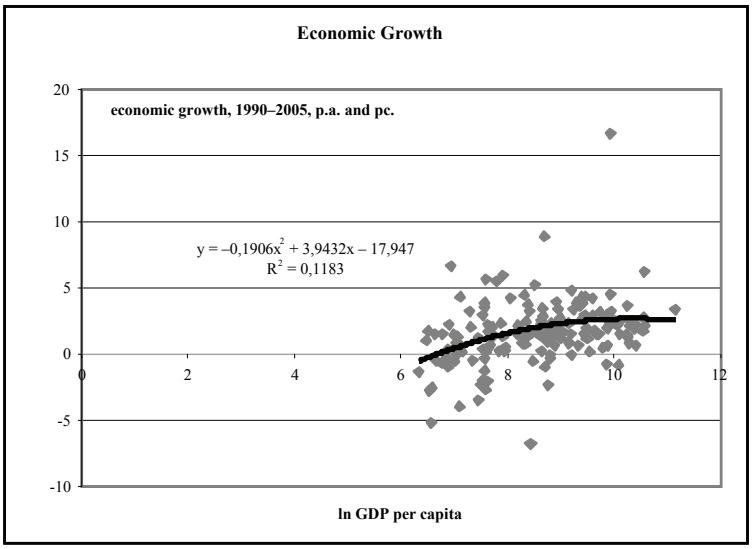
Table 1

Significant predictors of development

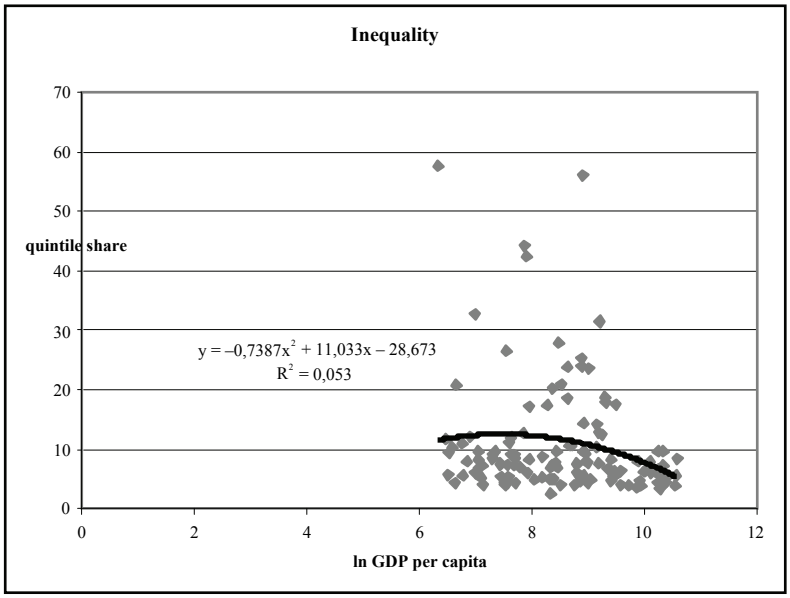
Dimension	Variable lable	Beta-weight	Error prob-ability	Dependent variable
1	2	3	4	5
dependency from MNCs	MNC PEN INWARD	0.347	0.000	growth 1990–2005
dependency from MNCs	MNC PEN INWARD	0.193	0.045	inequality
dependency from MNCs	MNC PEN INWARD	0.102	0.047	under five mortality
dependency from MNCs	MNC PEN INWARD	–0.132	0.065	growth 2010 (IMF)
dependency from MNCs	MNC PEN INWARD	0.162	0.066	unemployment
dependency from MNCs	MNC PEN INWARD	–0.097	0.083	life expectancy
increases in MNC PEN	DYN MNC PEN 95–2005	–0.185	0.047	inequality
increases in MNC PEN	DYN MNC PEN 95–2005	–0.159	0.059	growth 1990–2005
market size	% world population	0.187	0.007	growth 2010 (IMF)
market size	% world population	0.200	0.011	growth 1990–2005
demography	Annual population growth rate, 1975–2005 (%)	0.460	0.000	growth 2010 (IMF)
demography	Annual population growth rate, 1975–2005 (%)	0.415	0.001	inequality
demography	Annual population growth rate, 1975–2005 (%)	0.143	0.017	under five mortality
demography	Annual population growth rate, 1975–2005 (%)	–0.179	0.054	growth 1990–2005
demography	Annual population growth rate, 1975–2005 (%)	–0.107	0.092	life expectancy
public education ex-penditure	public education ex-penditure per GNP	–0.275	0.001	growth 1990–2005
public education ex-penditure	public education ex-penditure per GNP	0.251	0.005	unemployment

1	2	3	4	5
public education expenditure	public education expenditure per GNP	0.183	0.042	inequality
public education expenditure	public education expenditure per GNP	–0.097	0.087	life expectancy
modernization	ln GDP	5.356	0.000	inequality
modernization	ln GDP	–4.688	0.000	under five mortality
modernization	ln GDP	5.169	0.000	unemployment
modernization	ln GDP	2.189	0.007	life expectancy
modernity	ln GDP^2	–5.269	0.000	inequality
modernity	ln GDP^2	4.035	0.000	under five mortality
modernity	ln GDP^2	–5.367	0.000	unemployment
modernity	ln GDP^2	–1.445	0.074	life expectancy

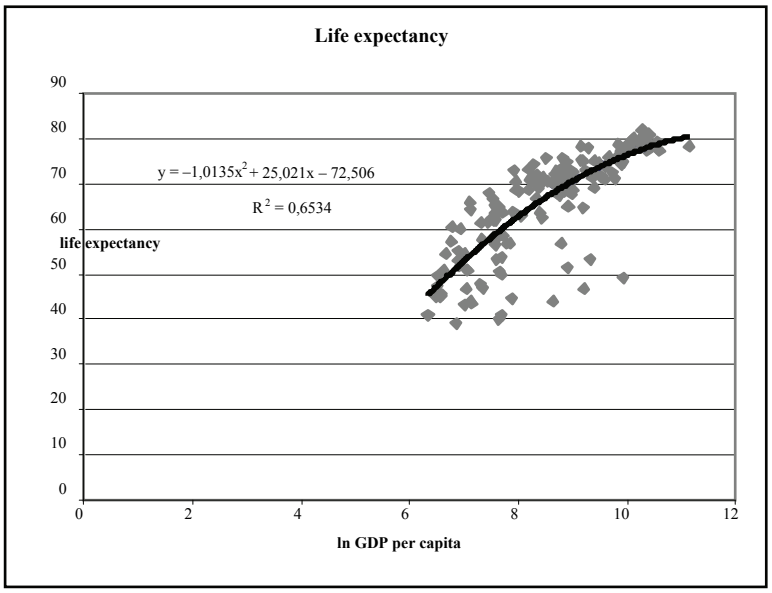
The results show, with the exception of few cases that the relationships between each pair of variables are statistically highly significant. In addition to the indication of significant relationships, the nature of a positive or negative relationship and its strength is also indicated. The relationship between our six development performance variables and the logarithm of GDP per capita and its square as explanatory variables are presented in Graphs 1a–f. This is to capture the non-linearity in their relationships.



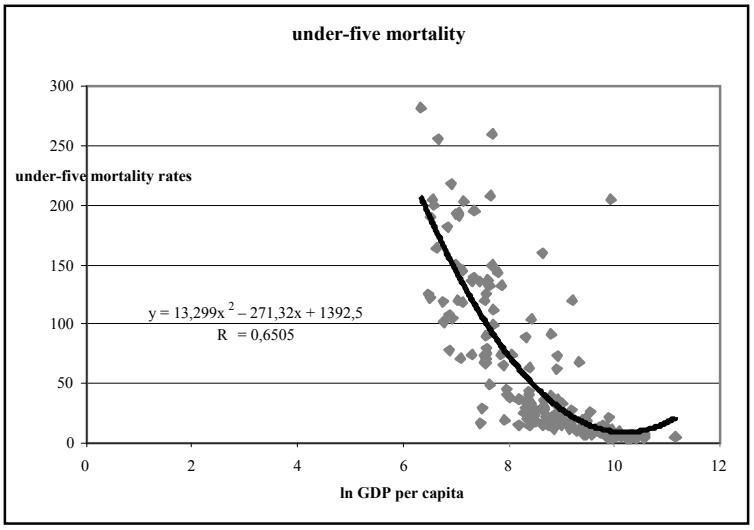
Graph 1-a



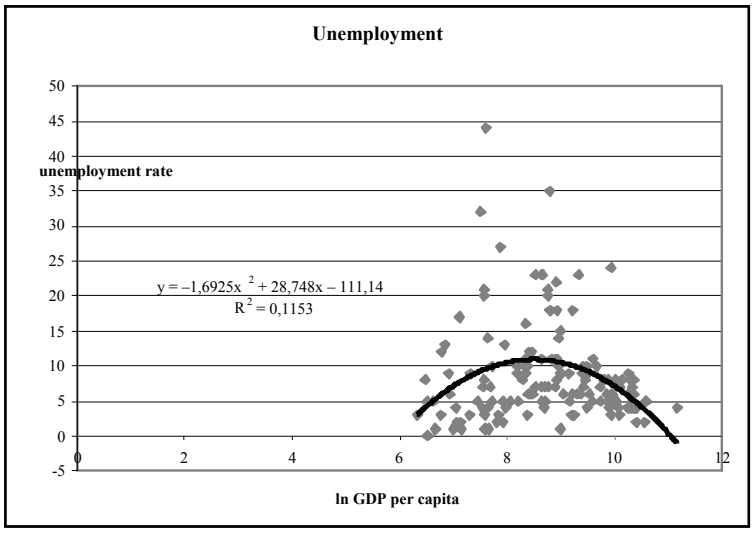
Graph 1-b



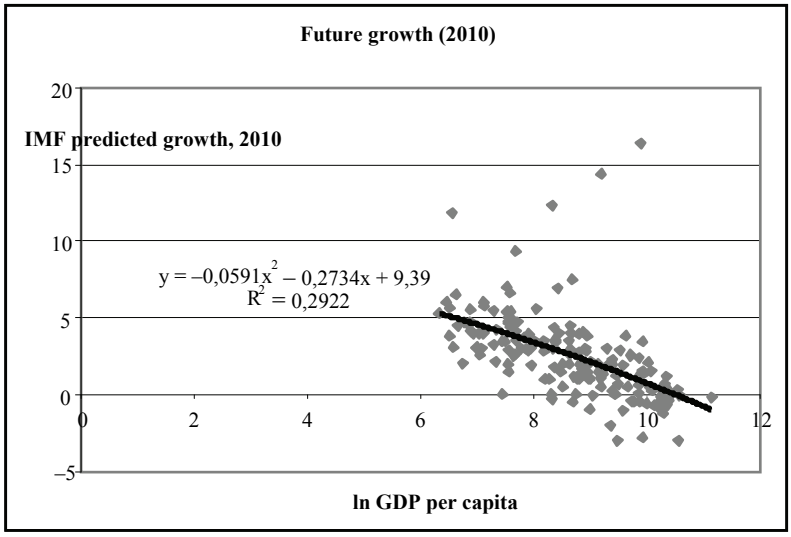
Graph 1-c



Graph 1-d



Graph 1-e



Graph 1-f

Graph 1a–f. Development level and development performance

GDP per capita and IMF predicted growth 2010 are negatively and linearly related, suggesting that the prediction is based on a simple linear relationship. A minor non-linear and positive relationship is observed between GDP per capita and economic growth 1990–2005 and life expectancy and a negative relationship between GDP per capita and inequality was found. GDP per capita is highly nonlinearly related to the under-five mortality rate and the unemployment rate. The former is U-shaped, while the latter has an inverted U-shaped relationship. The fit of the models measured as R^2 is in the interval between 0.053 and 0.653, suggesting a good fit and a large share of the total variations in the development performance variable being explained by GDP per capita and its square.

5.2. Multivariate Analysis Results

The results from the 42 SPSS-XV standard OLS regression coefficients, their standardized errors, beta-weights, *t*-values and error probabilities to measure the effects of the 7 predictor variables on the 6 dependent variables are presented in Table 2. The table is divided into 6 different panels each, for every development performance variable. The models fits measured by adjusted R^2 and degrees of freedom are reported at the end of each panel. The adjusted R^2 is in the interval between 0.193 and 0.663, *i.e.* 19.3 % and 66.3 %, indicating the share of the total variation in the dependent variable explained by the set of explanatory variables. A joint F-test for the significance of the slope parameters is also reported, suggesting that the null hypothesis of zero effects is being rejected in favor of the alternative hypothesis, representing the appropriateness of the current specification of the model.

Table 2

The OLS estimation results

1. Economic Growth 1990–2005	Beta	std error	beta-weight	t-value	error prob
Constant	–11.895	9.620	xx	–1.236	0.219
% world population	0.186	0.072	0.200	2.596	0.011
Annual population growth rate, 1975–2005 (%)	–0.338	0.174	–0.179	–1.942	0.054
MNC PEN INWARD	0.033	0.008	0.347	4.263	0.000
DYN MNC PEN 1995–2005	–0.014	0.008	–0.159	–1.904	0.059
public education expenditure per GNP	–0.315	0.093	–0.275	–3.406	0.001
ln GDP	3.138	2.218	1.629	1.415	0.160
ln GDP^2	–0.154	0.127	–1.397	–1.218	0.226
F-test = 7.277, R2 adj 0.243, n = 138					
2. Inequality	Beta	std error	beta-weight	t-value	error prob
Constant	–172.157	41.478	xx	–4.151	0.000
% world population	–0.216	0.278	–0.065	–0.777	0.439
Annual population growth rate, 1975–2005 (%)	3.287	0.978	0.415	3.362	0.001
MNC PEN INWARD	0.080	0.039	0.193	2.031	0.045
DYN MNC PEN 1995–2005	–0.068	0.034	–0.185	–2.012	0.047
Public education expenditure per GNP	0.836	0.405	0.183	2.062	0.042
ln GDP	39.910	9.528	5.356	4.189	0.000
ln GDP^2	–2.261	0.546	–5.269	–4.141	0.000
F-test = 6.776, R2 adj 0.264, n = 114					
3. Life Expectancy	Beta	std error	beta-weight	t-value	error prob
Constant	–43.401	31.747	xx	–1.367	0.174
% world population	0.027	0.238	0.006	0.113	0.910
Annual population growth rate, 1975–2005 (%)	–0.927	0.546	–0.107	–1.698	0.092
MNC PEN INWARD	–0.043	0.025	–0.097	–1.745	0.083
DYN MNC PEN 1995–2005	0.031	0.025	0.072	1.244	0.216
Public education expenditure per GNP	–0.531	0.309	–0.097	–1.722	0.087
ln GDP	19.911	7.323	2.189	2.719	0.007
ln GDP^2	–0.754	0.419	–1.445	–1.801	0.074
F-test = 34.233, R2 adj 0.624, n = 141					

4. Unemployment	Beta	std error	beta-weight	t-value	error prob
Constant	–109.356	27.734	xx	–3.943	0.000
% world population	–0.239	0.202	–0.099	–1.186	0.238
Annual population growth rate, 1975–2005 (%)	–0.111	0.484	–0.022	–0.230	0.818
MNC PEN INWARD	0.041	0.022	0.162	1.857	0.066
DYN MNC PEN 1995–2005	–0.008	0.021	–0.033	–0.367	0.714
Public education expenditure per GNP	0.782	0.274	0.251	2.859	0.005
ln GDP	27.537	6.379	5.169	4.317	0.000
ln GDP^2	–1.635	0.363	–5.367	–4.500	0.000
F-test = 5.305, R2 adj 0.193, n = 127					

5. Growth 2010 (IMF)	Beta	std error	beta-weight	t-value	error prob
Constant	–3.343	10.673	xx	–0.313	0.755
% world population	0.220	0.080	0.187	2.752	0.007
Annual population growth rate, 1975–2005 (%)	1.060	0.184	0.460	5.772	0.000
MNC PEN INWARD	–0.015	0.008	–0.132	–1.860	0.065
DYN MNC PEN 1995–2005	0.012	0.008	0.104	1.397	0.165
Public education expenditure per GNP	0.155	0.104	0.107	1.488	0.139
ln GDP	1.521	2.463	0.631	0.617	0.538
ln GDP^2	–0.132	0.141	–0.952	–0.934	0.352
F-test = 14.239, R2 adj 0.400, n = 140					

6. Under Five Mortality	Beta	std error	beta-weight	t-value	error prob
Constant	1241.548	171.617	xx	7.234	0.000
% world population	–0.491	1.288	–0.019	–0.381	0.704
Annual population growth rate, 1975–2005 (%)	7.101	2.947	0.143	2.410	0.017
MNC PEN INWARD	0.293	0.146	0.102	2.007	0.047
DYN MNC PEN 1995–2005	–0.122	0.140	–0.046	–0.874	0.384
Public education expenditure per GNP	–1.880	1.670	–0.061	–1.126	0.262
ln GDP	–243.800	39.620	–4.688	–6.153	0.000
ln GDP^2	12.051	2.266	4.035	5.318	0.000
F-test = 40.275, R2 adj 0.663, n = 141					

5.3. The Results Linked to the Theories

Let us first look more precisely at the quantitative results. First we turn to economic growth 1990–2005. Significant effects on the growth rate, at a 5 % significance level,

are being wielded by the share of the country in world population (beta +0.200), MNC penetration (beta +0.347) and public education expenditures (beta –0.275). Our equation explains 24.3 % of economic growth 1990 to 2005. The effects, which are significant at the 10 % level, include the negative effects of population growth and increases of MNC penetration over time.

Our next equation explains the income difference between the richest 20 % and the poorest 20 % of the population. Our equation for the 114 countries with complete data explains 26.4 % of total variance. Apart from the well-known effect of rising income inequality at middle levels of development and declining inequality thereafter, associated in the literature with Kuznets (1955, 1976), we observe significant effects of rising inequality, caused by population growth, MNC penetration, and public education expenditures, and the mitigating effects of rising MNC penetration over time, possibly due to the short-term employment effects of MNC capital inflows. It must be noted, however, that DYN MNC PEN does not have a significant effect on official unemployment rates (see below), which suggests the possibility that the inequality mitigating short term effects of fresh MNC inflows are mainly caused by changes in the pay structure of the industrially employed, official labor force.

The following equation – which explains 62.4 % of total variance for the 141 countries with complete data – is featuring the determination of life expectancy. Apart from the well-known *plateau curve of basic human needs* (Goldstein 1985), caused by ln GDP per capita and its square, we are confronted with the following negative effects, which are all significant at the 10 % level: population growth, MNC penetration, and public education expenditure. Without the influence of our predictors, life expectancy would be 43 years, but this effect is not significant.

Our analysis for unemployment rates with 127 countries with comparable and complete data suggests that 19.3 % of the total variance of the unemployment rate in the different countries of our globe can be significantly explained by the unemployment increasing effects of public education expenditures, the modernization process (ln GDP per capita), and the unemployment mitigating effects of 'modernity' (ln GDP per capita^2). Also, there is an unemployment increasing effect, which is significant at the 10 % level, wielded by MNC penetration.

Our analysis of the determinants of predicted economic growth in the year 2010, which was calculated for 140 countries, and explains 40 % of the total variance of the variable, reflects the enormous weight, which demographic dynamics will play in the future of the world economy. Both the big markets with very huge populations (beta +0.187), as well as countries with a high population growth rate (beta +0.460) will benefit from high rates of economic growth in 2010. These variables are significant at the 5 % level; in addition, MNC penetration negatively determines future economic growth (beta –0.132, error probability 6.5 %).

Our last analysis deals with under-five mortality rates. It was calculated with the complete, comparable data from 141 countries. Again, the *plateau curve of basic human needs,* discovered by Goldstein (1985), plays an important role, with ln GDP per capita and its square determining a good part of the entire variance of under-five mortality rates. The entire variance explained by our equation is 66.3%. The other significant negative effects wielded on the variable are being caused by population growth and MNC penetration.

So, it appears to be that the development logic of different economic cycles seems to shift indeed from cycle to cycle, and the pre-crisis world of the 'golden days' of the post-1989/90 boom seemed to correspond to a logic where high foreign capital penetration seemed to guarantee a long-run, but socially unbalanced economic growth. Foreign capital inflows did not result in immediate spurts of growth, but were rather first of all destroying, in a Schumpeterian fashion, existing economic structures. After the end of Communism in Eastern Europe in 1989, this global model, which seemed to dominate the global economy before the crash of 2008/2009, and which combined relatively rising rates of inequality, material poverty (measured with deficient life expectancy rates and relatively high under five mortality rates) with rapid economic growth, reflected in a way the boom years after the military coup in Brazil in 1964. This was the model, in which East Central Europe was the main area of expansion of global capitalism. Krasilshchikov (2008) analyzed this logic with his comparison of post-Communist Russia with Brazil during the heyday of dependent development.

Our discussion, for reasons of space, can only briefly touch upon the debates on the dependency/growth trade-off, carried on in the *American Journal of Sociology* (Firebaugh 1992; Dixon and Boswell 1996a, 1996b; Kentor 1998) and the *American Sociological Review* (Firebaugh and Beck 1994; De Soysa and Oneal 1999; Kentor and Boswell 2003), all dealing with research results from different time periods during the last Kondratiev cycle of the world economy. Our argument would be that the world in the post-2008 crisis years again returns to the logic of the early Bornschier studies, while the B-phase of the cycle 1973–2008 indeed supports the optimism about a positive MNC PEN-growth trade-off inherent in Herkenrath's analysis. Recent research, based on data from the B-phase of the Kondratiev cycle 1973–2008 in addition[7] showed that

- MNC PEN indirectly affected growth by both crowding out and depressing the productivity of domestic investment (De Soysa and Oneal 1999; Agosin and Machado 2005);
- MNC PEN effects on growth may have changed over the last couple of decades (De Soysa and Oneal 1999; Herkenrath 2003; Herkenrath and Bornschier 2003), but depend on the quality of host government interventions (Herkenrath 2003; on the situation in East Asia: Kerbo 2005a, 2005b);
- PEN effects depend on the lobbying power of foreign investors (Kentor and Boswell 2003).

But the new world structure of the post-crisis years, which now seems to emerge from the ruins of the post 1975/82 long economic cycle, will in many ways even more resemble the world, predicted by Bornschier at the time, because also projected economic growth during the global crisis is now negatively determined – with at least a 6.5 % error probability – by past MNC penetration. Thus the earliest formulations of quantitative dependency, written in the late 1970s, gain absolutely in relevance nowadays again at the precise long economic cycle time, which we face, and which is similar to the mid-1970s.

So, the often-hailed beneficial effects of foreign capital penetration nowadays even less materialize than ever before. As correctly predicted by the vast majority of the MNC penetration quantitative dependency literature, social polarization dramatically increases by a development model, based on a very high foreign capital penetration.

The significant negative development policy effects on the development performance in our present study are on equality, life expectancy, employment and the reduction of under-five mortality. Fresh inflows of foreign capital somewhat alleviated inequalities.

The demographic dimension of our results also has to be taken into account. We show that large markets with numerous inhabitants, both in the period of 1990–2005, as well as in 2010, are significantly and positively connected with growth performance. Annual population growth, however, is significantly contributing to the deficits in basic human needs satisfaction, inequality, and to stagnation in the past period of economic growth, 1990–2005. But with the current world economic shifts to the global Southeast, high population growth rates significantly and positively contribute to the future growth performance of a country in 2010.

Ever since the writings of Coleman (1965), education should also be mentioned among the determining variables of the development performance of a country. Education and human capital formation figure prominently in the *Human Development Reports* of the United Nations Development Program[1] as variables, which determine positively the development outcome. For the UNDP it has been self-evident over the last decade that gender empowerment and the re-direction of public expenditures away from national defense will positively contribute to a positive development outcome. However, neo-liberal thought correctly would caution against such premature conclusions. Some readers, by looking at our fairly pessimistic findings about the trade-off between state-sector human capital formation expenditures and economic growth, might exclaim in despair that they frankly do not believe these findings. But Weede (2002, 2004) has shown that standard indicators of human capital endowment – like literacy, school enrollment ratios, or years of schooling – suffer from a number of defects. They are crude. Mostly, they refer to input rather than output measures of human capital formation. Occasionally, Weede also emphasizes, they produce implausible effects. They are not robust significant determinants of growth. Weede himself replaced them by average intelligence. This variable consistently outperforms the other human capital indicators in spite of suffering from severe defects of its own. Public education expenditures in our model negatively affect economic growth (1990–2005), equality, life expectancy and employment. University reform and University privatization would be important political steps to achieve a more viable development.

Now let us move towards the dimension of development history. This often puzzling question can here be answered in the following sense. Modernization – that is rising income levels (ln GDP per capita) – have the strong expected following positive effects on the development performance: basic human needs satisfaction (life expectancy and reduction of under-five mortality). However, modernization contributes to a significant increase in inequality and unemployment.

Economic maturity, or if you wish and prefer, modernity, that is ln GDP/capita,[2] is good for the following performances: equality, and employment. The contradictions of modernity are largely to be found in what Goldstein already called in 1985 the *plateau curve of basic human needs,* basically constraining life expectancy and infant mortality reduction at very high levels of development, mainly due to the environmental and psychological strains of modern, urban life.

At this point, four major issues should be raised in the discussion of our results, achieved so far, and which might be interesting subjects for future research. Krasilshchi-

kov (2008) highlighted the fact that dependency not always blocks development. Krasilshchikov starts from the assumption that rapid economic growth in China can be seen as a kind of 'associated-dependent development' in the sense of Cardoso and Faletto (1971), because '*China has found niches in the economies of the Western countries where mass production of many ordinary goods is already non-advantageous for the capital of the core'* (emphasis added. – *A.T., A.H.*).[8] The same applies, according to Krasilshchikov, to the take-off of the Asian 'tigers' in the 1960s – 1980s. Their export expansion would have been impossible without the structural changes in the western economies. For Krasilshchikov, dependency theory in all its versions was elaborated in the conditions when the peripheral/semi-peripheral countries and the developed ones belonged to the *same, industrial, capitalist mega-stage of development.* Today, we see the rise of a post-industrial social formation in the most advanced countries. At the same time, China, Brazil, and other countries continue to follow an industrial path of development.

Another point, closely connected to the first, is the unfettered rise in the model of *export processing zones,* especially in China and Southeast Asia. The first major international study by Froebel, Heinrichs, and Kreye (1980) was followed, among others, by Ross (2004), and Singa Boyenge (2007). *Export Processing Zones (EPZ)* – or *Free Production Zones* – today already account for some 80 per cent of the merchandise exports of countries like China, Kenya, the Philippines, Malaysia, Mauritius, Mexico, Senegal, Tunisia, Vietnam. 3500 EPZs in 130 countries of the world now employ 66 million people, among these 40 million employees in China. The tendency, correctly foreseen by Froebel, Heinrichs, and Kreye (1980) towards a total global re-location of world industries continues unabated. Future research could determine the quantitative weights, which different forms of dependency have in the determination of future, projected economic growth rates (% of the population working in export processing zones *versus* MNC penetration *versus* the Kearney globalization index *versus* % of the GDP constituted by MNC outward foreign direct investment *etc.*).

In the face of the very huge statistical influence, to be ascribed to the demographic variables, the third point concerns the influence of family and household patterns, generational cohorts, and value change. Already the classic Arab philosopher Ibn Khaldun (1332–1406) (Ibn Khaldun 2005), who must be regarded as one of the founders of global sociology, foresaw the tendency towards economic cycles, which he linked, quite in a modern fashion, to what contemporary sociology would call *value change* (Inglehart and Norris 2003; Norris and Inglehart 2004) or – in the case of Ibn Khaldun – *value decay*. The rise and fall of a societal order (or macro-cycle?) is intrinsically linked to the rise and fall of generations of human people. For Khaldun, the life cycle of a societal model is linked to the ups and downs of exactly four human generations *i.e.* 80 to 100 years – from the building-up of an order by the 'founding fathers/mothers' (1945?), to the phase of societal maturity during the tenure of societal power by the second generation (1965/70?), the onset of decline during the tenure of the third generation (1985/2005?), and the final destruction and end during the fourth generation (2005/2030?). Contemporary quantitative Kondratiev cycle researchers, like Rennstich (2007) stumbled onto the issue again, without duly taking into account the theoretical forerunner Ibn Khaldun, and linking the four generation cycle to the Nobel-laureate winning four generation family sage *Buddenbrooks. The Decline of a Family* by the German novelist Thomas Mann (1924), and calling the four-generation cycle the *Buddenbrooks cycle.* According to the *Buddenbrooks* cycle thought the novel contains

a dire and general message for societal systems and is a model of analysis, also to be applied to the contemporary, post-World-War II world order. Independently of Rennstich, Devezas and Corredine, already in 2001 developed on the basis of long-range demographic and sociological data a mathematical model, also based on the four-generation 'model'. Schumpeter, in his rather conservative and pessimistic interpretation, also touched upon this issue in his 1950 *Capitalism, Socialism and Democracy,* when he stated that capitalism will not disappear from the face of the earth by a socialist revolution, but by the gradual erosion of capitalist individual family values and the rise of a socialist-oriented intellectual elite and bureaucracy. Indeed, the decline of the demographic base of Western societies castigates the West in the emerging new global order with a vengeance. And at any rate, the demographic variables play an important part in our empirical explanation of future expected economic growth. The effect of annual population growth on the expected economic growth rate in 2010 is 5.8 greater than the standard error of the coefficient.

The fourth and last point to be touched upon here is the necessary switch in the international Huntington debate and contemporary Islam-bashing – away from Huntington of 1996, the Islam critic, perhaps, towards Huntington of 1968, the modernization pessimist. Prudent Arab banking, remindful of the *Holy Quran* prescriptions about interest, nowadays overtakes New York as the global financial center; and most Muslim countries – with a few exceptions – have become growth superstars in the ongoing crisis. The re-orientation of the world along the map proposed by Frank (1998), also implies that the Indian Ocean – and with it the vast area of the world, deeply influenced by Islam and Muslim culture, becomes again the center of the world economy, as it always was until 1450.

6. Conclusions

By focusing on MNC penetration as the measure, reflecting the power, which transnational oligopolies wield over the local economies, we have tried to free dependency and world systems research from some neo-Marxist connotations, which might have surrounded that concept in the past and which, perhaps, were mainly responsible for the fact that the concept so well entered the core-research agenda of global political science and sociology, but failed to influence the course of the debate in the major mainstream economics journals. By giving the concept a Schumpeterian interpretation, we are also free to understand the dramatic changes, currently taking place in the world economy.

We have shown in this article these enormous geographical shifts, which currently take place, and which make the predictions of the 'Asian age', forwarded by Frank (1998) come true almost overnight. After the end of Communism in Eastern Europe in 1989, the model which emerged on the ruins of the Berlin Wall and took shape on a global scale combined relatively rising rates of inequality, material poverty (measured with deficient life expectancy rates and relatively high under-five mortality rates) with rapid economic growth. But in a Schumpeterian creative-destructive fashion, the countries formerly under strong control of the oligopolies (especially East Central Europe) are now being severely castigated in turn, while economic growth is being transplanted to the new growth regions of the Eastern part of the Indian Ocean, China, Southeast Asia and the Arab new global financial centers. As Arrighi correctly predicted in 1995, all major cyclical terminal crises also and above all mean a geographical transfer of the global financial centers, constituted in the history of global capitalism by Genoa, Amsterdam, London, then New York, and now the Arab financial centers.

Because of the negative influence of both high MNC penetration and low demographic dynamics, our investigation is especially pessimistic for the new member countries of the European Union in East Central Europe. They combine all the ills of our investigation at once – a high rate of control of their economies by transnational capital, a low population growth rate, a shrinking and already small share of world population, and an education system, which was, unlike the coal mines and the shipyards, largely left in state hands and is based on a dwindling resource base. Whether democracy can survive under such strenuous conditions, is another matter, beyond the theme of this essay. For Western Europe, faced by the partial collapse of the fruits of reconstruction policy and the European Union enlargement in Eastern Europe, prospects are also very dark, due to the dual effects of low demographic dynamics and a high MNC penetration.

NOTES

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[1] http://hdr.undp.org/en/reports/

[2] ISI Web of Knowledge, Thomson Reuters, as available at Vienna University Library, Austria.

[3] See 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

[3] The sample countries were: Albania; Algeria; Angola; Antigua and Barbuda; Argentina; Armenia; Australia; Austria; Azerbaijan; Bahamas; Bahrain; Bangladesh; Barbados; Belarus; Belgium; Belize; Benin; Bhutan; Bolivia; Bosnia and Herzegovina; Botswana; Brazil; Brunei Darussalam; Bulgaria; Burkina Faso; Burundi; Cambodia; Cameroon; Canada; Cape Verde; Central African Republic; Chad; Chile; China; Colombia; Comoros; Congo; Congo (Dem Republic of the); Costa Rica; Côte d'Ivoire; Croatia; Cuba; Cyprus; Czech Republic; Denmark; Djibouti; Dominica; Dominican Republic; East Timor; Ecuador; Egypt; El Salvador; Equatorial Guinea; Eritrea; Estonia; Ethiopia; Fiji; Finland; France; Gabon; Gambia; Georgia; Germany; Ghana; Gibraltar; Greece; Grenada; Guatemala; Guinea; Guinea-Bissau; Guyana; Haiti; Honduras; Hong Kong, China (SAR); Hungary; Iceland; India; Indonesia; Iran (Islamic Republic of); Iraq; Ireland; Israel; Italy; Jamaica; Japan; Jordan; Kazakhstan; Kenya; Korea (Republic of); Kuwait; Kyrgyzstan; Lao People's Dem Republic; Latvia; Lebanon; Lesotho; Liberia; Libyan Arab Jamahiriya; Lichtenstein; Lithuania; Luxembourg; Macedonia (TFYR); Madagascar; Malawi; Malaysia; Maldives; Mali; Malta; Mauritania; Mauritius; Mexico; Moldova; Monaco; Mongolia; Morocco; Mozambique; Myanmar; Namibia; Nepal; Netherlands; New Zealand; Nicaragua; Niger; Nigeria; Norway; Oman; Pakistan; Panama; Papua New Guinea; Paraguay; Peru; Philippines; Poland; Portugal; Puerto Rico; Qatar; Reunion; Romania; Russian Federation; Rwanda; Saint Kitts and Nevis; Saint Lucia; Saint Vincent and Grenadines; Samoa; Sao Tome and Principe; Saudi Arabia; Senegal; Seychelles; Sierra Leone; Singapore; Slovakia; Slovenia; Solomon Islands; South Africa; Spain; Sri Lanka; Sudan; Suriname; Swaziland; Sweden; Switzerland; Syrian Arab Republic; Taiwan; Tajikistan; Tanzania (United Republic of); Thailand; Togo; Trinidad and Tobago; Tunisia; Turkey; Turkmenistan; Uganda; Ukraine; United Arab Emirates; United Kingdom; United States; Uruguay; Uzbekistan; Vanuatu; Venezuela (Bolivarian Rep of); Viet Nam; Yemen; Zambia; Zimbabwe.

[5] It has to be emphasized that results, based on the IMF predictions 2009, 2010, and 2011 are pretty similar.

[6] It has to be emphasized that the demographic and human capital formation control variables are corresponding to standard econometric current practice, described in Durlauf *et al.* 2008.

[7] The authors owe these points to an unnamed colleague from the international comparative sociology community.

[8] The author's personal communication with Prof. Krasilshchikov, August 25, 2009.

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Appendix 1

Data sources for the selected variables of the final model

IMF http://www.imf.org/external/datamapper/index.php

- Economic growth rate, 2010

UNCTAD http://www.unctad.org/sections/dite_dir/docs/wir2007_instock_gdp_en.xls
http://www.unctad.org/Templates/Page.asp?intItemID=3198&lang=1
http://www.unctad.org/en/docs/wir2008_en.pdf
http://www.unctad.org/Templates/Page.asp?intItemID=3277&lang=1

- MNC PEN increase in MNC penetration 1995–2005
- MNC PEN 1995

UNDP Human Development Report Office http://hdr.undp.org/en/statistics/data/

- % world population
- Annual population growth rate, 1975–2005 (%)
- DYN 1990–2005 real economic growth rate
- Life expectancy at birth 2000/2005
- ln GDP per capita in PPP $
- ln GDP per capita in PPP $^2
- public education expenditure per GDP
- RAT2020: quintile ratio (difference in the incomes between the richest and the poorest 20 % in society
- total population, 2005
- Under-five mortality rate (per 1,000 live births) 2005

United Nations Statistics
http://unstats.un.org/unsd/Demographic/Products/socind/unemployment.htm

- Unemployment rate, latest available year

United States Central Intelligence Agency
http://www.photius.com/rankings/spreadsheets_2008/population_2008.xls (based on US CIA)

- % world population
- Annual population growth rate, 1975–2005 (%)