Transnational Corporations in World Development – Still the Same Harmful Effects in an Increasingly Globalized World Economy?*

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INTRODUCTION AND OVERVIEW

During the last decades of the 20th century the world has experienced an impressive increase in the amount and relative importance of border-crossing economic interlinkages. Transnational corporations (TNCs) whose organizational structures transcend polities and connect various national societies have been playing a leading role in this process. The TNC system has grown substantially and gained historically unprecedented power in the political world-economy (UNCTAD 2000: Overview). The old question of how transnational corporations affect economic and social development in their host countries thus arises with renewed relevance.

The findings of previous research result in a quite bleak picture. Although standard economic theory argues transnational firms to be important catalysts of development and worldwide convergence, numerous cross-national studies on data from the late 1960s and early 1970s support the opposite view of *dependencia* and world-system theorists. They all show that TNC affiliates rather add to inequality and underdevelopment than to socio-economic progress in their host countries (Bornschier and Chase-Dunn 1985; Dixon and Boswell 1996a,

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ABSTRACT

Transnational corporations (TNCs) have reached historically unprecedented weight and power in the world's political economy. Thus, the old question of how these corporations affect global development is nowadays more significant than ever. While some scholars claim that corporate globalization will eventually close the worldwide development gap, many others contend that TNC activities lead to insufficient exploitation of growth potentials within the host country, thereby hindering convergence of national income levels. The present study aims at assessing the validity of these controversial positions by confronting them with the results of past and present empirical research. In the first part, we examine the effect of TNC presence on intra-national income inequality by reviewing the most recent cross-national studies dealing with this issue. In the second part, we present the results of our own research, which analyzes the effect of TNC presence on economic growth in a sample of 84 countries. The contemporary empirical evidence discussed in the first part as well as the results of our own analyses tend to confirm earlier findings. They suggest that dependence on TNC activities increases inequality without adding to economic growth. However, the strong negative effect of TNC presence on growth found in analyses of data from the late 1960s cannot be reproduced in our contemporary analysis. In a significant number of cases, the potentially harmful consequences of TNC activities seem to have been overcome by adequate countervailing state actions.

b). These results, however, do not necessarily hold for the contemporary era. As the impressive growth of the TNC system since the 1960s (and, with increased velocity, since the 1980s) has been accompanied by various qualitative transformations, the effects of TNC presence on national development might have changed as well (Hübner 1998). It is thus necessary to analyze more recent data and compare the results with previous findings. Up to now, surprisingly few studies have addressed this problem and assessed the actual applicability of previous results to this contemporary era of increased global economic integration. The present study aims at closing this gap. We review the most recent literature on the relation between TNC presence and income inequality, and we also explore the effect of TNC presence on economic growth by means of new cross-national analyses based on data from the 1980s and early 1990s.

The question of how TNCs influence wealth and social development in their host countries is not a new question. It constitutes the core of a vivid sociological debate that has lasted for almost three decades. Quantitative cross-national research on the topic started as early as 1975 with simultaneously published studies from authors in three different countries, Britain, US, and Switzerland (Stoneman 1975, Chase-Dunn 1975, Bornschier 1975). The three authors pioneered a novel approach. While acknowledging the immediate positive impact of foreign direct investment on economic growth they claimed that, in the longer run, development models based on a strong presence of TNCs would result in higher inequality and in under-utilization of growth potentials. Unfortunately, this view was sometimes misunderstood as claiming that the presence of TNCs prevents growth altogether (Firebaugh 1992), although none of the pioneering authors denied the fact that even dependent (semi-) peripheral economies are able to experience some economic success. By "reducing the growth potential" and "under-exploitation of convergence forces" the authors rather meant that TNCs prevent their host countries from growing as fast as possible and from climbing up in the worldwide division of labor (which, in turn, means that TNCs unwillingly perpetuate the *status quo* of an unequal and sharply stratified world). Their notion of underdevelopment—which will be applied in this paper as well—thus consisted of two aspects: (1) unequal development within a society as indicated by pronounced and enduring inequality, and (2) under-utilization of the convergence possibilities usually open to late developers.[1]

Following the initial studies from 1975, many other researchers who also distrusted the supposedly beneficial effects of TNCs began testing their assumptions by means of quantitative cross-national research as well.[2] Despite some minor quarrels on specific findings they all came to the same empirical conclusion—they again found that TNC presence retards development. Accordingly, the school or paradigm these authors represent is usually termed the "critical" school. This name may be misleading, though. Since the early scholars mainly theorized power relations and conflicting interests, it would be more correct to call them "realists." Not believing in the classical formula according to which "capital is capital," they insisted that the *institutional sources* of capital and the corresponding interests matter. Explicitly or implicitly, these researchers were the pioneers of the renewal of economic sociology within the framework of the political world-economy. According to this critical, or realistic, school, the basic problem with TNCs in world development is that two different institutional agendas collide: the agenda of global capital accumulation followed by the system of TNCs on the one hand and the agenda of national needs of development on the other. We will return to this problem in the next section.

The article is organized as follows: In section 2, we review the three most important theoretical perspectives on the development effects of TNCs: (i) the "conventional" position of standard economics and modernization theory, (ii) the "pessimistic" position of *dependencia* and world-system theorists, and (iii) the most recent, yet still sketchy, "skeptical" position proposed, among others, by UNCTAD. In the third section we discuss some methodological problems that plague comparative research on TNCs, while the fourth section summarizes the empirical evidence that has been presented in the relevant literature up to this point. At first glance, the field discussed in this fourth section may seem to be over-studied. This impression is certainly wrong, though, since the topicality of the time periods studied has not caught up with economic globalization since the 1980s. As the very few studies covering the 1980s and 1990s suffer from some shortcomings and partly contradict each other, we need to perform further tests. The results of our new research are presented in the fifth section, which also con-

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[1.]   In a historical perspective, taking full advantage of convergence forces means that countries that started poor have been able to industrialize and eventually achieve core status in the world system. Examples of non-European cases include Japan, South Korea and Taiwan.

[2.]   Those scientists who *do* believe in the beneficial impacts of TNCs have presented remarkably few, if any, cross-national tests of their hypotheses. There is a huge variety of studies on the short-term effects of foreign direct investment (FDI) inflows, but the structural and long-lasting changes brought about by the presence of TNCs in developing economies have been neglected—although analyzing flow measures like foreign investment is conceptually distinct from the study of the accumulated impact of TNCs.

tains an evaluation of the hypotheses. In the sixth section we list our conclusions and close the paper with some suggestions for the future research agenda.

THREE THEORETICAL POSITIONS

The question of how TNCs influence national development has generated a long-lasting and intense scholarly debate. Two "classical" positions can be distinguished in this debate: the conventional position derived from standard economic theory, and the pessimistic position proposed by *dependencia* theorists and most proponents of the world-system approach. In the next sections we briefly review the two approaches in order to derive from them the hypotheses that will guide our study. Moreover, we discuss a third approach, which is termed the "skeptical" position. In contending that TNC presence may have positive *and* negative effects, this promising new perspective not only combines elements of the two classical positions but also puts the state and issues of "dependency management" back on the agenda. It should be noted, however, that the skeptical approach has not (yet) produced testable hypotheses. We are thus unable to assess its validity by means of cross-national testing.

The Conventional Position

The core arguments of the conventional position are well known, since they reflect common sense in standard economics as well as modernization theory. Late development, conventionalists contend, is a function of capital inflows, the creative adaptation of imported technology and the diffusion of modern perspectives among the population. Since TNCs and their affiliates provide all of these badly needed resources—fresh capital, new ideas and technologies, and modern values—right on the spot, they may help their host countries to achieve faster development and catch-up in the world system. Hence, countries with a marked TNC presence should be better off than countries where foreign firms are absent or less actively involved.

Regarding the effects on income distribution, proponents of the conventional position are somewhat less optimistic and concede that TNC activities may well create further inequality. TNC presence is argued to foster the process of industrialization that, in turn, creates dualistic structures and inequality. However, given that the effect of TNC activities is transmitted by economic success and further development, it necessarily follows Kuznets' famous inverted U-curve. Once the turning point is reached, FDI-induced development should actually start lowering the level of inequality. Thus, the hypothesized effect is neither direct nor long lasting. Rather, inequality has to be seen as a necessary but temporary price to be paid for the economic success brought about by TNCs and their investment.

The hypotheses of this position then read as follows:

H1.1   A stronger TNC presence is associated with more income inequality. This, however, is caused by the contribution of TNCs to growing income.

H1.2   The presence of TNCs is an advantage since their inputs accelerate convergence.

Hypotheses relating to conditional relations/interactions:

H1.3   Since TNCs provide technology and modern outlooks, the income-generating productivity of domestic investment should be greater the larger the presence of TNCs in a host country.

H1.4   Since the resources provided by TNCs are particularly scarce at low levels of development, the positive effect of TNC presence is more significant in poorer countries than in others.

The Pessimistic Position

The pessimistic position is based on a more realistic view of the divergent interests of TNCs and national governments. According to the proponents of this view, TNCs enter foreign markets to do profitable business there without paying any attention to the needs of the majority of the host country's population. TNC affiliates do business according to, and within, the global logic of capital accumulation of their parent corporations. Yet, the pessimistic position contends, they are not only economic actors. At the same time they are involved as "national corporate citizens" in the political economy of the host country and, like any other interest group, try to influence the government to act in their favor. Although this behavior is normal politics it alters power constellations and preferences in the national political economy. Since TNC affiliates are normally among the largest corporations in the host countries, and since the huge resources of their parent corporations abroad back them, they have substantial influence on the agenda of the host government.

Whereas the optimal agenda for developing country governments aims at moving up in the worldwide division of labor (by improving the value added in ever more sophisticated branches of the economy), this is not a high priority item on the agenda of TNCs. Foreign firms, indeed, choose a given host country exactly because of the relative availability of resources and relative prices that the government would or should want to change in order to achieve upward mobility in the worldwide division of labor. Thus, countries that are highly "penetrated" by foreign firms will find it difficult to propose and successfully implement an agenda of economic upgrading against the opposition of foreign interests.

According to the pessimistic position, the hierarchical division of labor

within transnational corporations—the most important functions are performed in core countries, while more specialized and less sophisticated value-added activities are transferred to the periphery—not only corresponds with the existing stratification of the world system but also perpetuates it. The TNC system thus stabilizes the division of the world into different sections with unequal access to sophisticated economic activities and differing opportunities to generate national income. A national political economy that enters late development with the supposed help of TNCs will find it difficult to actually improve its position in the worldwide division of labor, and the optimal or potential convergence is hampered.

With regard to inequality, the argument is similar to the one proposed by the conventional position (H1.1): TNC presence leads to higher inequality. But unlike conventionalists, who claim a transitory impact, pessimists contend that inequality generated by TNC activities become institutionalized and, thus, enduring. Bornschier and Ballmer-Cao (1979), for example, claim that TNC presence affects various aspects of the internal power distribution, which, in turn, are related to overall income inequality. TNC presence, they argue, alters traditional social relations, the power distribution among formal organizations, the bargaining position of labor and the way in which resources provided by the state authorities affect life-chances.

The hypotheses of the pessimistic position thus read as follows:

H2.1   More pronounced TNC presence is related to higher income inequality. This is not a transitory but, rather, a permanent relationship, since TNC presence transforms power relations in the host country.

H2.2   Higher TNC presence does not add to growth and may even hinder convergence once fresh TNC investment slows down.

Hypotheses relating to interactions/conditional effects:

H2.3   As a consequence of the altered political economy, total (domestic) investment contributes relatively little to economic growth in countries with strong TNC presence as compared to more independent countries. This is because the powerful TNC affiliates claim inputs and infrastructure from the state that could otherwise be used to support the bulk of medium and small-sized domestic companies.

H2.4   The lower the level of development, the more the bargaining process between host country governments and TNCs is likely to result in solutions that favor the latter. Since the resources needed to reach a fairer bargain are particularly scarce in the poorest countries, the supposed negative effect of TNC presence should be more pronounced there.

The Skeptical Position

In addition to the classical positions discussed so far, the most recent editions of UNCTAD's World Investment Reports (particularly UNCTAD 1999) and a few other publications (Blomström/Kokko 1996; Khor 2000; Kiely 1998) propose an innovative third perspective. We have decided to call this new approach "skeptical" because it accuses both the pessimistic as well as the conventional position of being over-simplistic and too one-sided. According to the proponents of the skeptical approach, TNC presence is neither unequivocally good nor unequivocally bad for host country development. Rather, the net effect of TNC presence is argued to vary in accordance with the quality of policy packages adopted by different countries.

More specifically, the adherents of the skeptical position acknowledge the potential problems related to TNC presence, and they make clear that "FDI promises more than it delivers" (Kumar, cit. in Khor 2000:39). At the same time it is claimed that "politics matter," and that a reasonable "dependency management" may make a difference. Kiely (1996:60), for example, contends that "[s]tates in the Third World are not simply passive victims of the activities of TNCs, and some have quite successfully regulated the activities of foreign capital for their own developmental ends."[3] In other words, the effects of TNC presence on income inequality and economic growth are argued to be ambiguous. In some cases, the skeptical approach claims, TNC activities are associated with high inequality and low economic growth. In other cases, however, host country governments may prevent these negative effects from working by pursuing successful countervailing policies.

The main problem with this new approach is that it represents a research program rather than a well-elaborated theory. The principal questions are still unanswered (i.e., the skeptical position does not give any detailed indication of *which* policies could prevent the negative effects of TNC presence from working). Nor is it made clear under what conditions a country is *able* to adopt such

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[3]   It should be noted that "intelligent" dependency management is itself a result of state autonomy, the ability to create suitable policies and a marked capacity to implement these measures (for the statist position, see Herkenrath, forthcoming, as well as Bornschier and Trezzini 1997, 2001). In our opinion, only developmental states characterized by a high degree of autonomy and capacity can push through the national development agenda against the interests of foreign investors. In these cases, however, TNC presence may indeed add much less to inequality than elsewhere, and contribute positively to economic growth.

measures. In the case of UNCTAD's World Investment Reports these questions are deliberately avoided. The authors contend that there is no generally applicable package of "intelligent" TNC policies, and that "[a]ny good strategy must be context specific, reflecting the level of economic development, the resource base, the specific technological context and the competitive setting" (UNCTAD 1999: 315). Other researchers simply state that questions related to host country policies *vis-à-vis* foreign TNCs require further research (Blomström/Kokko 1996: 33). Fact is that the skeptical approach has not yet produced any testable hypotheses.

METHODOLOGICAL ISSUES

The central aim of this paper is to assess the validity of the conventional and the pessimistic hypotheses presented in the previous sections. Before we go over to discussing past and recent empirical findings, some methodological issues need to be mentioned, though. At first glance, measuring the relative weight of foreign firms in a national economy may appear to be an easy task. However, looking at it again, operationalizing the importance of TNC activities (i.e. the degree of an economy's dependence on foreign investment) turns out to be quite problematic.

The earliest studies on the subject estimated the degree of dependence on TNCs by measuring the number of foreign-owned enterprises present in a country, but this rather crude indicator is unsuitable for at least two reasons: On the one hand it does not take into account the existence of joint ventures between local investors and foreign firms. On the other hand it neglects the highly variable size of foreign affiliates. Accordingly, more recent studies—including our own—measure the relative importance of the foreign-owned sector by looking at the accumulated stocks of inward-oriented FDI, which are then weighted by the size of the whole economy (as measured by GDP figures or total capital stocks). Information on FDI stocks is usually taken from UNCTAD's World Investment Reports. This alternative measure actually avoids the problems mentioned above—but it has other shortcomings. Although the data are provided by a well-known institution, their quality is not beyond doubt. On the contrary, there are substantial reliability problems, and these are again accompanied by problems concerning the indicator's validity.

Reliability Problems

Careful reading of the footnotes and comments on the FDI data presented in UNCTAD's World Investment Reports reveals an alarming picture. It becomes evident, for instance, that only very few national statistical bureaus provide information on all three components of FDI, i.e. equity investment, re-invested

earnings, and loans provided by the parent firm. In most cases only one or two of these components can be taken into account when measuring the value of accumulated FDI inward stocks.[4] The other problem with UNCTAD's measures of FDI inward stocks is that they constitute mere estimates and that they refer to extremely variable time periods. In the case of Kenya, for example, the foreign direct investment stock is estimated by adding up all FDI inflows after 1970, whereas in the case of Lesotho only inflows after 1980 are taken into account. Estimates for the Seychelles relate to FDI inflows after 1976 (UNCTAD 1999: Notes to table B.3 in the Appendix). Hence, the data and any statistical finding based on them must be interpreted with extraordinary care.

Validity

Unfortunately, reliability issues are not the only problems plaguing quantitative research on TNC activities and foreign capital penetration. One must also question whether FDI stocks constitute valid indicators of foreign influence and dependence. There are at least three problematic points we should mention. First, any FDI-based enterprise can expand its activities by taking out loans from domestic financial institutions. Since such transactions are not included in the definition of foreign direct investment, FDI stocks give a very imprecise impression of the actual "value" or weight of TNC affiliates (Henneberger et al. 1996: 420).[5] Second, foreign direct investment is sufficient, but not imperative, for creating dependence and establishing unequal relations. According to UNCTAD (1995: 384) there exists a great variety of other instruments by which foreign enterprises are able to establish control over the management of another firm and obtain an effective voice in the political economy of the host country: "There are non-equity forms of FDI, and they include, 'inter alia', subcontracting, man-

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4.   Furthermore, it should be noted that the conceptual distinction between long-lasting direct investment and short-term portfolio investment varies significantly when comparing different countries and time periods (Henneberger et al. 1997: 420). In Germany, for instance, which is a very important home country for FDI flows, the more common 10% criterion—the concept of foreign direct investment usually implies that the foreign investor owns at least 10% of the shareholders' voting power—has only just replaced the 20% rule, which in September 1989 had replaced the earlier 25% rule (Henneberger/Graf 1996: footnote 1).

5.   This casts some doubt on the common practice of confounding FDI with (real) investment undertaken by foreign-owned firms and of comparing FDI with "domestic" investment. Unlike the concept of gross domestic investment, FDI concerns the purchase of financial capital, which is not necessarily translated into real investment.

agement contracts, turnkey arrangements, franchising, licensing and product sharing." The third point concerns the differing capital requirements in the various sectors and branches of the economy. In the tertiary sector a relatively small investment can buy significant influence on a whole branch and allow a firm to establish a leading position, whereas in the extractive sector the same amount of money might have no weight at all. In sum, looking at aggregate capital figures seems to be a rather crude way of estimating the economic and political influence of TNCs.

Given these criticisms, how is it that almost all contemporary empirical research, including our own, still uses aggregate FDI data to measure the "weight" and influence of TNCs? The answer is very simple: Disaggregated data on FDI in the various sectors of an economy are available only for a handful of (developed) nations. Unfortunately, the same is true for other indicators of TNC activities, including non-equity forms of investment. Total FDI stocks are the only measures that can be obtained for a broad sample of countries. And, concerning these stocks, the figures listed in UNCTAD's World Investment Reports still seem to constitute the most comprehensive and reliable data set one can get—despite all shortcomings. Nonetheless, the methodological problems discussed here should be kept in mind when it now comes to interpreting the findings of past and recent quantitative research on TNCs.

OVERVIEW OF THE AVAILABLE EVIDENCE

Income Inequality

With regard to income concentration, both the conventional and the pessimistic position outlined in section 2 expect the same result: a positive relationship between TNC activity and inequality (hypotheses H1.1 and H2.1). Therefore, it comes as no surprise that all cross-national studies measuring income inequality around 1970 actually find a significant (positive) relationship with the degree of TNC presence, even when other relevant predictors of income distribution are also included in the model (for a summary and some re-analyses of early research, see Bornschier and Chase-Dunn 1985: chapter 8). However, the conventionalist assumption—that TNC presence encourages inequality only by means of further economic development—has to be rejected. Most of the studies Bornschier and Chase-Dunn discuss find that TNC presence remains strongly related to inequality even when explicitly controlling for the curvilinear effect of per capita income.[6] In addition, Bornschier and Ballmer-Cao (1979) find strong empirical support for their assumption that the effect of TNCs on inequality is transmitted by institutional changes, and is, thus, enduring. These facts rather favor the hypothesis of the pessimistic position (H2.1).[7]

Alderson and Nielson (1999) corroborate the previous findings, although they analyze a greater number of cases and a much longer time period. In their very comprehensive study, Alderson and Nielson draw upon the high-quality data set of Deininger and Squire (1996) for their inequality measures. Pooling all available information on TNC presence and income inequality over the whole period from 1947 to 1996, they reach a total of 488 observations on 108 countries. The results are quite clear. Using linear regression techniques, Alderson and Nielson find a strong and statistically solid association between the degree of TNC presence and inequality. Additional tests, however, reveal a moderate curvilinear relation: when TNC presence reaches a very high level, its effect on inequality diminishes. That is, in countries where foreign firms control almost all (formal) economic activity, further increases in TNC presence no longer add to inequality. The usual effect may even be reversed in these contexts.[8] But Alderson and Nielson show that not only the presence of TNC but also their investment (i.e. fresh FDI inflows) is significantly related to income inequality, which makes it very difficult, and rather unlikely, that highly dependent countries escape from the traps of TNC-led development.

In all, Alderson and Nielson are able to support the conclusions of earlier research by means of more reliable inequality measures and reveal new relations that coincide just as much with the pessimistic position. The only problem with their study is that the issue of contemporary relations remains unresolved, since

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6. Indirectly, Deininger and Squire (1996: 586 ff.) call the conventionalist assumption into question as well, when they find no support for the Kuznets hypothesis in its dynamic version. There can hardly be an indirect effect of TNC presence on inequality *via* faster economic growth as long as there is no systematic relationship between the latter.

7. According to Firebaugh and Beck (1994: 642, 647), TNC activities not only encourage relative deprivation (income inequality) but also impede the development of life chances. The reduction in child mortality and the increase in caloric consumption brought about by economic growth are almost three times smaller in countries with marked TNC presence than in others. TNC-led growth thus underperforms when it comes to fighting poverty and child mortality. However, our own re-analyses with data for the 1980s fail to confirm the earlier findings (results not shown).

8. Note that a curvilinear pattern does not imply an actual turning point within the range of observed data. In some cases, significant square terms represent "ceiling" effects and diminishing returns.

observations for the 1980s and 1990s represent only one part of the sample.[9] Up to now there is a total of four quantitative cross-national studies that exclusively analyze more recent data, namely Tsai's analysis of observations for the mid-1970s (Tsai 1999), Beer's study on the situation in the mid-1980s (Beer 1999), and Kentor's analysis of structural equation models (Kentor 2001) as well as the very recent study of Beer and Boswell (2002) that both control for the effects of reverse causation.

By analyzing a total of 53 observations from 33 countries, Tsai (1995) is able to replicate the well-established positive relationship between TNC presence and inequality. At first glance, the findings presented in the previous literature seem to be corroborated once more. But by including geographical dummies and inter-action terms, which transform the original models into conditional equations, Tsai detects notable regional differences. In Latin America, the varying degree of TNC presence observed across countries and time shows no systematic relation with income distribution at all, whereas TNC activities in East and Southeast Asia seem to contribute significantly, and substantially, to income concentration. In order to make sense of his results, Tsai introduces the notion of a "socially tolerable ceiling for inequality." The ceiling for inequality, he argues, was reached in Latin American countries well before the period covered by the data sample

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9.   The results Alderson and Nielson list allow the tentative conclusion that the contri-bution of TNC presence to inequality has been growing over the last decades. The authors control for year of measurement and find a very substantial positive effect of this control variable on the dependent inequality. Since time of measurement and TNC presence are positively correlated in this era of globalization, this result *might* grasp the generally increas-ing effect of TNC presence. Yet, further research has to disentangle the effects of TNC presence and other potential factors of inequality that have been increasing during the post-war era as well (trade, privatization of state enterprises etc.). It would come as no sur-prise, had we to reject our tentative conclusion. For instance, Beer's analysis of data for the mid-1980s reveals not stronger, but weaker, effects from TNC presence on inequality than the studies on the late 1960s. In Bornschier's study on inequality around 1967 (Bornschier 1983: Table 1), including TNC presence as an additional predictor increases the explana-tory power of the model (i.e., the adjusted R-square) by 17 percent points, whereas the corresponding increase in Beer's model amounts to only 10 percent points. However, no definite conclusions can be drawn from this difference, since the studies employ different operational definitions of inequality: Beer uses the top 10% and the top 20% share of total income to measure inequality, whereas Bornschier utilizes the more common Gini index.

and, unlike their Asian counterparts, Latin American elites cannot allow further increases in inequality if they want to secure their privileges. Thus, although the high levels of inequality in Latin America are actually due to this region's long-lasting dependence on foreign direct investment, the marginal impact of further increases in TNC presence is negligible.

Beer (1999) who analyzes a sample of 66 countries and focuses on observa-tions around 1985 comes to somewhat different conclusions. Her analyses again fully support the assumptions of the pessimistic position. Just like the stud-ies on the late 1970s, Beer finds a significant positive (i.e., "harmful") relation between the degree of TNC presence and inequality. Notably, the effect does not disappear when geographical dummies are included in the equation: although the coefficient dwindles, it still turns out to be more than twice as large as its standard error, i.e. statistically significant. Thus, taken together, the two recent analyses of Tsai and Beer reveal a mixed picture. According to Tsai, the harmful effects of TNC presence are restricted to East and Southeast Asia, whereas Beer finds a more general relation that is valid for most of the countries covered by her sample. However, it would seem rather pointless to try and trace back these dif-ferences to their source, for all analyses we have discussed to this point—includ-ing the old studies covering the late 1960s—entirely neglect the problem of reverse causation, which makes it impossible to draw clear-cut conclusions. As long as TNC presence and inequality are measured simultaneously, any correla-tion or regression coefficient found can be interpreted in two ways. Whilst the findings discussed to this point support the pessimistic hypothesis that TNCs create inequality, so too can it be argued that unequal societies *attract* TNCs, since only those societies provide cheap labor as well as sizeable elites with suf-ficient purchasing power to buy TNC products.

So far the only studies that avoid the problem of reverse causation are the analyses of Beer and Boswell (2002) as well as Kentor (2001). In their second model to explain top quintile income concentration around 1995, Beer and Boswell (2002) include a measure of inequality as from about 1980 as an instru-ment. Consequently, the other independent variables, including TNC presence, are now bound to predict *changes* in inequality, and the direction of causality is set. The effect of introducing earlier income concentration as an instrumental predictor is impressive. In fact, almost all previously significant predictors lose their significance in this "dynamic" version of the model. To some extent this is true for TNC presence as well. We can thus conclude that the strong rela-tion between TNC presence and income concentration found by Beer (1999) and many others is influenced by the fact that TNCs tend to build up their foreign affiliates in unequal societies rather than elsewhere. When controlling

for this reverse relation, the estimated impact of TNC presence on (changes in) inequality becomes much weaker. Yet, the statistical relation remains positive and significant, and it still supports the pessimistic position. Accordingly, Beer and Boswell (2002: abstract) conclude "that dependence on foreign investment as a development strategy, especially compared to domestic and human capital investment, may be misguided for nations concerned with equality." Kentor (2001), who analyzes the effect of TNC presence on income inequality changes within a complex system of structural equations, clearly supports this finding. He finds that "[f]oreign investment dependence in 1980 has a significant positive effect on growth of income inequality 1980–90" (ibid.: 450).

However, it should be noted that the effect of TNC presence on inequality shows a relatively great standard error in both analyses. In Beer and Boswell (1999), for instance, the regression slope of TNC presence is significant only at the 10% level (in one-tailed tests). In Kentor (2001), the critical ratio for the corresponding effect is well below 2.0. Unfortunately, there is no straightforward interpretation of this. Whilst it can be argued that the pessimistic case is rather weak, so too can one think of alternative explanations for these "inflated" standard errors. First, the relatively large error could be due to the data problems and measurement errors discussed in section 3. Second, following Tsai, one could argue that the results of Beer and Boswell are influenced by Tsai's "socially tolerable ceiling for inequality." Yet another interpretation could refer to the skeptical position: perhaps a number of "intelligent" states have successfully prevented inequality from rising in spite of a strong TNC presence.

Economic Growth

What are the effects of TNC presence on economic growth? Empirical work on these effects in the 1960s and 1970s is discussed by Bornschier and Chase-Dunn (1985: chapters 5–7), who also present extended and improved re-estimations. As mentioned in the introduction to the present paper, all results for this early time period indicate that the level of TNC presence has a significant negative impact on GDP per capita growth. This implies underdevelopment, since the potential for catching-up in the world system remains unexploited. However, the net effect of TNC activities is not necessarily negative right from the beginning. Some of the early studies show that the convergence-reducing impact of TNC presence can be offset as long as the foreign firms keep on investing.

Bornschier (1980), for instance, finds a negative effect of TNC presence in 1967 (as measured by the number of foreign affiliates) on income per capita growth 1965–75, but a positive effect for fresh TNC investment (i.e. FDI inflows) from 1967 to 1973. Both coefficients are highly significant. However, the problem for late development is that TNC presence and subsequent TNC investment do not go hand in hand. In the late 1960s their correlation is positive but low (r=.32 in Bornschier 1980), whereas in the 1980s it turns out to be significantly negative (Herkenrath 1999). That is, at low levels of TNC presence, fresh foreign investment tends to be substantive, and host country growth benefits from the activities of TNCs. With increasing TNC presence, though, foreign investment slows down. Eventually, the growth-enhancing effect of fresh investment is overshadowed by the disadvantageous structural impact of TNC presence, and the net effect becomes negative. The conclusion from these early studies is that, *per saldo* and in the long run, TNCs do not add to national economic growth and worldwide convergence.

Some years later, Dixon and Boswell (1996a, b) reveal additional evidence in favor of the pessimistic position. Re-analyzing the data collected by Bornschier and Chase-Dunn (1985), they first introduce some changes in the research design in order to settle Firebaugh's criticisms of earlier specifications (Firebaugh 1992). In spite of these changes, Dixon and Boswell (1996a) again find a negative coefficient for TNC presence as well as a positive investment effect. In a subsequent study (ibid. 1996b), they also consider the interaction of TNC presence and domestic investment (see hypotheses H1.3 and H2.3 in the present paper), finding strong support for the pessimistic contention that the presence of TNCs hampers the income-generating capacity of domestic investment.

Finally, we need to mention the interesting findings of Kentor (1998) who relates accumulated stocks of foreign capital in 1938 (divided by gross domestic product) to subsequent income growth. The analysis reveals that TNC presence in 1938 has a short-term (five-year) positive effect, which is followed by a 20-year lagged negative effect beginning in 1960. This negative effect on economic growth lasts at least 30 years. Kentor's unique study thus reveals astonishing long lasting effects that are well in line with our interpretation of the findings presented above.[10]

To sum up, almost all studies discussed so far reveal a negative effect from TNC presence on economic growth that is only partially offset by the positive impact of subsequent investment. The problem with these studies is that they

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10. Since Kentor (1998) does not control for fresh TNC investment, the interpretation of his findings is difficult. Most countries with a marked TNC presence already in the 1930s received considerably less new FDI in subsequent years than more independent countries. Thus, the dissatisfying economic development of these countries emphasized in Kentor's study can be attributed either to the high levels of TNC presence in the past or to the absence of fresh FDI inflows later on.

are not representative of the present time, since they draw upon data from 1938 (Kentor 1998), the late 1960s and the early 1970s (all others). The question as to how TNCs influence world development in the contemporary era of increased economic integration remains unanswered. There are but three studies that analyze more recent data material, namely Kentor (2001), de Soysa and Oneal (1999), and Herkenrath (1999). While Kentor (2001) still finds a negative effect of foreign capital dependence in 1980 on growth in 1990–97, the other two studies come to results that differ quite notably from previous findings.

De Soysa and Oneal (1999) who examine data for 1980–90 are unable to reveal a significant effect of TNC presence on the rate of economic growth, whereas fresh TNC investment still appears to exert a positive impact. Accordingly, the authors conclude their research with a very optimistic outlook, and claim that "[d]eveloping countries need not fear that the presence of foreign multinational corporations tends to retard or distort development" (ibid.: 778). During the recent upswing of global economic integration, it is argued, TNC activities have somehow become harmless. At the same time, Herkenrath (1999) finds neither a presence effect nor an investment effect. In addition, Herkenrath also fails to find the conditional effect discovered by Dixon and Boswell (1996b).

However, both studies suffer from serious shortcomings. While Herkenrath's findings represent a very small sample of only 46 countries, de Soysa and Oneal analyze a sufficiently large number of cases but fail to take into account Dixon and Boswell's innovative interaction model. Besides, both studies pay very little attention to the data problems outlined in section 3.[11] Therefore, recent research does not provide a trustworthy answer on whether the consequences of TNC activities in the 1980s actually do differ from the consequences found in the late 1960s. Hence, we clearly need further tests. So far we can only conclude that to date it has never been possible to establish evidence in favor of the conventional

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[11.] Given the measurement problems mentioned in section 3, the predictor PEN does not actually represent an interval-scaled variable and, thus, violates one of the central requirements of mutliple regression analysis. Even the rank order of measurements may be disturbed. Yet, unfortunately, it is completely unclear as to how the error may have influenced the results. This is because at least two predictors, namely "foreign capital penetration" *and* "foreign investment flows," are affected. While measurement errors usually bias the results of analytical procedures in favor of the null hypothesis, the present case may well be different : 'when there are several badly measured variables, or the errors depart from classical assumptions, then biases may go in either direction" (Temple 1999: 130).

position (H1.2), i.e., TNC presence has never shown a positive effect on economic growth.

NEW FINDINGS AND THEIR INTERPRETATION

In our own analyses we try to replicate the previous studies on the 1980s and, at the same time, to overcome their weaknesses. Thus, we investigate a much a larger sample than Herkenrath (1999)—namely 84 cases, including a sub-sample of 63 less developed countries—and also test for the conditional model that has been neglected by de Soysa and Oneal (1999). All analyses are carried out with data for 1980–90 as well as 1985–95 in order to enable direct comparisons with the two other studies that use contemporary data.

The dependent variable in all our calculations is the growth rate of gross domestic product (GDP) per capita, which is measured by the difference of the log-values for the first and the last year of the period under study.[12] The predictors are: the initial level of development (as measured by GDP per capita in PPP-corrected prices), domestic investment rate (operationalized by the growth rate of the total stock of real capital), average trade rate (imports plus exports as a percentage of GDP), absolute size of the economy (indicator: average level of GDP in absolute terms), and human capital (indicator: secondary school enrollment ten years before the period under study). Additionally, we also include the foreign investment rate (as measured by the growth rate of the FDI inward stock), which is supposed to represent the presumed positive impact of fresh TNC investment. Detailed information on the construction of the variables as well as the data sources are presented in the Appendix.

The long-term effects of TNC presence are captured by the variable *TNC dummy*, which is based on the ratio between the inward FDI stock and the total stock of (real) capital. This ratio is used to split the sample into two equal groups of countries by using the median as a threshold. Countries with values above the median are given the value "1" for the TNC dummy, whereas countries with levels below the median are coded "0." By creating this dummy variable we try to cope with the measurement errors in UNCTAD's data mentioned in section 3. The

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[12.] We also performed our analyses using percentage increases of GDP per capita as measures of economic growth ($y=[GDPc_{1990}-GDPc_{1980}]/GDPc_{1980}*100$ and $y=[GDPc_{1995}-GDPc_{1985}]/GDPc_{1985}*100$). The results are almost identical to the results presented above. This is not surprising, however, since the two indicators of economic growth are highly correlated (Pearson's r = .987 for the period 1980–90 in the the total sample).

procedure draws upon Scheuch's recommendation to recode faulty measures onto lower scale levels and to summarize the data in categories greater than the presumed measurement error (Scheuch 1966: 140).[13]

The results reported in table 1 refer to the direct effect of TNC presence on economic growth predicted in hypotheses H1.2 and H2.2. The first thing worth noting is the equations' great explanatory power.[14] Adjusted R-squares range from 0.71 to 0.75, indicating that more than two-thirds of the observed variance in GDP per capita growth can be explained by the predictors we included.[15] Except for the TNC-related variables FIR and DUMMY all predictors turn out to have significant, and sometimes substantial, effects on the dependent variable. The results clearly confirm the assumptions of standard economic theory. The regressions of growth on domestic investment as well as on trade openness both show the presumed positive slopes, while the significant positive coefficient for

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[13]. "[T]he intervals for grouped data (or when grouping them) and the threshold of sensitivity for a measure should be just greater than the possible errors in the data. [...] If there is any reason to suspect error, one should sacrifice some information and settle for a rougher measure" (Scheuch 1966: 140).

[14]. The usual battery of diagnostic tests was examined to make sure that the results in this article were not unduly influenced by outlier values, influential cases, and excessive collinearities (VIFs are reported in each table). Regarding the coefficients reported in table 1, centered leverage values and standardized df-betas revealed the existence of several influential cases. We removed these cases from the respective samples and re-ran the models (n=78 for model 1, n=57 for model 2, n=76 for model 3, and n=55 for model 4). The results, however, showed no substantial deviations from the results reported above.

[15]. The Variance Inflation Factors (VIFs) in some of our equations are higher than many statisticians would like. Normally a VIF of 2.5 or above indicates a possible problem of multicollinearity that may be distorting the regression estimates (Allison 1999). However, in the cases at hand the independent variables are not highly correlated with one another and the regression estimates seem to be within ranges that can be considered reasonable on theoretical and methodological grounds. It should also be noted that the highest VIFs are related to the inclusion of the variable SEC. When we re-run the models in tables 1 and A-2 without this predictor, all VIFs turn out to be well below 2.5. Yet, excluding SEC does not change the results for our measures of TNC penetration at all. In the conditional models reported in tables 2 and 3, the situation is very similar: when excluding SEC, there are no VIFs at 2.5 or above except for the interaction terms and their components. The latter finding is not surprising, though, since the use of interaction terms is always associated with some (moderate) multicollinearity.

Table 1 – Dependent Variable: GDP per capita growth; OLS regressions

		1980–90		1985–95	
		(1)	(2)	(3)	(4)
Initial Level of Development (DEV)					
GDP/capita 1980 and 1985 (PPP-values)	b =	− .03**	− .00**	− .02**	− .00
	ß =	− .29	− .36	− .22	− .06
	(t =	− 3.7)	(− 3.9)	(− 2.7)	(− .6)
	[VIF =	1.7]	[2.5]	[1.8]	[2.5]
Domestic investment rate (DIR)					
Growth of total capital stock		.31**	.28**	.42**	.43**
		.54	.51	.68	.70
		(8.4)	(6.5)	(10.1)	(9.5)
		[1.2]	[1.4]	[1.3]	[1.4]
Openness (OPEN)					
Average trade ratio		.00**	.00**	.00**	.00*
		.42	.48	.27	.19
		(6.0)	(5.5)	(3.5)	(2.2)
		[1.4]	[1.7]	[1.6]	[2.0]
Size of the economy (SIZE)					
Average GDP 1980, 85, 90 and 1985, 90, 95		.03**	.07**	.02†	.05**
		.25	.52	.18	.31
		(2.7)	(5.1)	(1.8)	(3.1)
		[2.5]	[2.3]	[2.9]	[2.5]
Human capital (SEC)					
Secondary school enrollment rate 1970 and 1975		.00**	.00†	.00*	.00†
		.29	.17	.25	.15
		(3.0)	(1.8)	(2.3)	(1.7)
		[2.8]	[1.9]	[3.2]	[2.0]
Foreign investment rate (FIR)					
Growth of foreign capital stock		.03	.04	− .03	− .02
		.09	.12	− .10	− .06
		(1.3)	(1.5)	(− 1.4)	(− .7)
		[1.5]	[1.5]	[1.5]	[1.6]
TNC dummy (DUMMY)					
TNC penetration in 1980 and 1985		− .01	− .01	− .01	.01
		− .04	− .02	− .00	.05
		(− .6)	(− .3)	(− .1)	(.6)
		[1.2]	[1.3]	[1.4]	[1.4]
Constant		− .38**	− .81**	− .29**	− .56**
		(t= − 4.0)	(− 5.7)	(− 2.5)	(− 3.4)
R² adjusted		.71	.72	.71	.75
Number of Cases		84	63	84	63
			(LDCs)		(LDCs)

** p<0.01, * p<0.05, † p<=0.1 (two-tailed tests)

market size nicely illustrates the existence of growth-enhancing scale effects. We also find a significant positive effect for human capital.

In the period 1980–90 (cols. 1 and 2) we observe a marked convergence effect, which indicates that less developed economies tend to grow substantially faster than others do (*ceteris paribus*). This result, however, is not robust. In the second period (1985–95), the negative regression of GDP per capita growth on the initial level of development is significantly different from zero only in the total sample of 84 countries (col. 3). In the sub-sample of 63 less developed countries (col. 4),

from which the highly industrialized benchmark countries were removed, the effect "disappears." The world's poorest countries do not seem to benefit from a greater growth potential than countries on a medium level of development. It should be noted, though, that this finding does not come totally unexpected. Dixon and Boswell (1996a, 1996b) as well as Firebaugh (1992) discover no convergence effect within their samples either.[16]

Concerning the variable "foreign investment rate" (FIR), our results require further explanation. At first glance, the insignificant coefficients for FIR seem to suggest that fresh TNC investment (as measured by FDI inward stock growth rates) has no effect on GDP per capita growth whatsoever. This impression, however, is misleading. It should be noted that our models also control for total domestic investment, and that this measure already includes investment by TNC affiliates. Due to this restrictive condition, our foreign investment rate represents the *marginal* contribution of TNC investment. i.e., FIR simply measures whether foreign-controlled investment contributes relatively more to economic growth than total investment does (Borensztein et al. 1995). Yet, as indicated by our results, there is no such effect. Unlike most other studies on the subject, but in accordance with the results of Herkenrath (1999), we can thus conclude that TNC investment does not outperform investment by local entrepreneurs when it comes to encouraging economic progress.

As regards the effect of TNC presence, the results in table 1 are straightforward. Introducing our dichotomous TNC dummy does not improve the explanatory power of the test models at all, and in neither period nor sample is it a significant predictor of economic growth. While contradicting all empirical results for the late 1960s, this result clearly confirms the findings of most contemporary studies. Using a dummy variable instead of measuring TNC presence on higher scale-level seems to make no difference. We are as unable to detect a systematic linear and unconditional effect from TNC presence on national development as de Soysa and Oneal (1999) or Herkenrath (1999) are. Our results thus confirm the conclusion that, for the 1980s and early 1990s, the hypothesis H1.2 of the conventional position as well as H2.2 of the pessimistic position need to be rejected. Yet, contrary to de Soysa and Oneal (1999), we do not conclude that contemporary TNCs are harmless and of no relevance for their host countries. This interpretation would be premature, since there are alternative interpreta-

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[16.] Bornschier and Chase-Dunn (1985: table 5) reveal a statistically significant late developer's advantage only when including core nations in their analysis.

Table 1b – Results for alternative measures of TNC penetration in equations (1)–(4) of Table 1

	1980–90		1985–95	
	(1)	(2)	(3)	(4)
PEN				
TNC presence 1980 and 1985, actual FDI stock	b= − .00	− .00	.00	.00
	ß= − .04	− .04	.02	.07
	(t= − .6)	(− .4)	(.2)	(.9)
	[VIF= 1.5]	[1.6]	[1.5]	[1.5]
PEN 5				
TNC presence, five categories	− .00	− .00	.00	.01
	− .02	− .03	.03	.07
	(− .4)	(− .3)	(.4)	(1.0)
	[1.4]	[1.5]	[1.4]	[1.4]
PEN 3				
TNC presence, three categories	− .00	− .00	.01	.02
	− .00	− .00	.04	.09
	(− .0)	(− .0)	(.6)	(1.2)
	[1.4]	[1.4]	[1.3]	[1.3]
PEN 2				
TNC presence, dichotomous measure (mean split)	− .00	− .00	.01	.02
	− .01	− .00	.03	.06
	(− .1)	(− .0)	(.4)	(.8)
	[1.3]	[1.4]	[1.3]	[1.4]
Number of Cases...	84	63 (LDCs)	84	63 (LDCs)

** p<0.01, * p<0.05, † p<=0.1 (two-tailed tests)

tions of equal, or even greater, plausibility. It should be noted, for instance, that the present findings are also in perfect accordance with the skeptical position's claim that dependence on TNC presence still tends to have unfavorable effects, except in those (few) countries where the activities of foreign firms are regulated by adequate policies.

We must concede, however, that our decision to use a dichotomous measure of TNC presence in the above analyses is not entirely unproblematic. While the transformation of the actual FDI data into a dummy variable drastically reduces the effects of measurement error, it also minimizes all "sound" information the original measure may have contained. Thus, to put it in the words of an anonymous reviewer, "the cure may have killed the cat." To address this problem, we reestimate the models from table 1 with several alternative specifications of TNC presence. The results for these alternative measures are shown in table 1b (due to space constraints, we only report the coefficients for our TNC measures—all other numbers, including adjusted R-squares and constants, are basically the same as in table 1).

In the first row, TNC presence is represented by the continuous variable PEN. Its name, PEN, stands for "TNC penetration," and the variable directly draws upon the actual data on FDI stocks presented in the United Nations'

World Investment Report (UNCTAD 1995; see Appendix for details on the construction of PEN). In the second row, we transform PEN into an ordinal variable with five categories of equal width (PEN5), whereas row 3 introduces a variable with *three* categories (PEN3). In row 4, PEN is finally transformed into a dichotomous measure by using the variable's mean (instead of the median) as a threshold. Countries with PEN values above this threshold are coded "1," whereas countries exhibiting PEN values below the variable's mean are coded "0" (PEN2). Yet, the results in table 1b reveal no surprise whatsoever. None of the various measures of TNC presence show a significant effect on GDP per capita growth, irrespective of what period and what sample of countries we analyze.[17]

In table 2, we investigate the validity of the hypotheses H1.3 and H2.3, which claim that the presence of foreign TNCs shapes, in one way or another, the growth-spurring effect of domestic investment. The results mainly re-confirm the existence of the growth-adverse conditional effect discovered by Dixon and Boswell (1996b), since the corresponding slope dummy, the interaction term "TNC dummy * domestic investment rate," reveals a significant negative coefficient. Thus, the conventional assumption H1.3 has to be rejected. Although TNC affiliates may bring modern and efficient Western technologies into their host countries, we find absolutely no evidence of total domestic investment being more productive in those contexts where TNCs hold a dominant position. The contrary is the case: in countries with a more pronounced presence of foreign firms, local investment appears to contribute relatively less to economic growth than elsewhere.[18] This result stands for two phenomena: On the one hand, we can conclude that foreign firms tend to supplant local firms in the more profitable branches of the economy and push them into those sectors where private and social returns on investment are lower. On the other hand, our findings show that many developing countries tend to promote the presence of foreign firms by offering them attractive production sites with high-quality infrastructure while neglecting the domestic sector. In these cases, domestic firms often lack the basic conditions for a frictionless production and, thus, yield below average.

[17.] While diagnostic tests discover the existence of several influential cases, excluding these cases does not lead to significant changes. The only difference is that the variable PEN then shows a significant negative effect in model 1. The effect, however, falls well short of statistical significance in the LDC-sample (model 2) and both equations for the years 1985-95 (models 3 and 4).

[18.] It should be noted, however, that the observed interaction effect is not robust. In Herkenrath's analyses of the period 1985–93, for instance, the effect turns out to be statistically insignificant (Herkenrath forthcoming).

Table 2 – Dependent Variable: GDP per capita growth; OLS regressions

	1980–90		1985–95	
	(1)	(2)	(3)	(4)
Initial Level of Development (DEV)				
GDP/capita 1980 and 1985 (PPP-values) b =	– .03**	– .00**	– .03**	– .00
ß =	– .27	– .30	– .23	– .09
(t =	– 3.6)	(– 3.2)	(– 3.0)	(– .9)
[VIF =	1.8]	[2.2]	[1.8]	[2.5]
Domestic investment rate (DIR)				
Growth of total capital stock	.45**	.41**	.52**	.52**
	.79	.77	.84	.86
	(8.2)	(6.4)	(9.4)	(8.7)
	[3.1]	[3.5]	[2.5]	[2.6]
Openness (OPEN)				
Average trade ratio	.00**	.00**	.00**	.00*
	.40	.45	.29	.22
	(6.1)	(5.4)	(3.9)	(2.5)
	[1.4]	[1.7]	[1.7]	[2.0]
Size of the economy (SIZE)				
Average GDP 1980, 85, 90 and 1985, 90, 95	.03**	.07**	.02†	.05**
	.28	.51	.17	.32
	(2.8)	(5.4)	(1.8)	(3.3)
	[2.5]	[2.2]	[2.9]	[2.5]
Human capital (SEC)				
Secondary school enrollment rate 1970 and 1975	.00**	.00*	.00*	.00*
	.30	.18	.28	.19
	(3.2)	(2.2)	(2.7)	(2.1)
	[2.8]	[1.7]	[3.3]	[2.0]
Foreign investment rate (FIR)				
Growth of foreign capital stock	.02	.04	– .04†	– .02
	.08	.11	– .13	– .08
	(1.2)	(1.4)	(– 1.9)	(– 1.0)
	[1.5]	[1.5]	[1.6]	[1.6]
TNC dummy (DUMMY)				
TNC penetration in 1980 and 1985	.01	.01	.01	.02
	– .05	.06	.06	.10
	(– .7)	(.7)	(.8)	(1.3)
	[1.4]	[1.5]	[1.6]	[1.6]
TNC dummy * domestic investment rate	– .22**	– .20**	– .19*	– .18*
	– .31	– .30	– .23	– .21
	(– 3.3)	(– 2.7)	(– 2.6)	(– 2.2)
	[2.9]	[3.0]	[2.3]	[2.4]
Constant	– .41**	– .82**	– .29**	– .59**
	(t= – 4.6)	(– 6.2)	(– 2.6)	(– 3.7)
R² adjusted	.75	.75	.74	.77
Number of Cases	84	63 (LDCs)	84	63 (LDCs)

** p<0.01, * p<0.05, † p<=0.1 (two-tailed tests)

The explanatory power of this conditional relation is by no means negligible. As compared to the models for 1980–90 in table 1, the adjusted R-squares increase by 4 percentage points for the total sample and 3 percentage points for the LDC-sample when the slope dummy is included. (Note that the latter increase in the explained variance corresponds very nicely with the results of Dixon and Boswell for the late 1960s and early 1970s; see Dixon and Boswell 1996a: table 1, and 1996b: table 1).

Table 3 – Dependent Variable: GDP per capita growth; OLS regressions

	1980–90		1985–95	
	(1)	(2)	(3)	(4)
Initial Level of Development (DEV) *GDP/capita 1980 and 1985 (PPP-values)*............	b = − .02* ß = − .24 (t = − 2.5) [VIF = 2.7]	− .00** − .40 (− 3.3) [3.2]	− .02* − .21 (− 2.4) [2.2]	− .00 − .13 (− 1.2) [3.3]
Domestic investment rate (DIR) *Growth of total capital stock*............................	.31** .26 (8.5) [1.2]	.27** .50 (6.3) [1.4]	.42** .68 (10.0) [1.3]	.43** .71 (9.6) [1.4]
Openness (OPEN) *Average trade ratio*.......................................	.00** .42 (5.9) [1.4]	.00** .49 (5.6) [1.7]	.00** .27 (3.5) [1.7]	.00* .19 (2.1) [2.0]
Size of the economy (SIZE) *Average GDP 1980, 85, 90 and 1985, 90, 95*.........	.03** .26 (2.8) [2.5]	.08** .54 (5.3) [2.3]	.02† .18 (1.8) [2.9]	.05** .31 (3.1) [2.5]
Human capital (SEC) *Secondary school enrollment rate 1970 and 1975*......	.00** .28 (2.9) [2.8]	.00† .15 (1.8) [1.7]	.00* .25 (2.3) [3.3]	.00† .16 (1.8) [2.0]
Foreign investment rate (FIR) *Growth of foreign capital stock*.........................	.02 .09 (1.2) [1.5]	.04 .12 (1.4) [1.5]	− .03 − .10 (− 1.4) [1.5]	− .02 − .06 (− .7) [1.6]
TNC dummy (DUMMY) *TNC penetration in 1980 and 1985*......................	− .01 − .04 (− .6) [1.2]	− .02 − .09 (− .8) [2.9]	− .01 − .00 (− .0) [1.4]	− .01 − .06 (− .5) [2.8]
TNC dummy * initial level of development...............	− .01 − .07 (− .9) [1.8]	.00 .09 (.8) [3.2]	− .00 − .01 (− .1) [1.6]	.00 .15 (1.4) [3.1]
Constant...	− .39** (t= − 4.1)	− .84** (− 5.9)	− .29** (− 2.5)	− .54** (− 3.4)
R² adjusted...	.71	.72	.71	.75
Number of Cases...	84	63 (LDCs)	84	63 (LDCs)

*** p<0.01, * p<0.05, † p<=0.1 (two-tailed tests)*

Table 3 addresses the hypotheses H1.4 and H2.4. We analyze whether TNC presence produces a particularly positive, or negative, effect in the poorest and most backward countries. It could be argued that the additive models of table 1 do not reveal any significant TNC effects simply because these effects vary in accordance with the level of development. Yet, table 3 shows that there are no such conditional relations at work. The corresponding slope dummy, the

interaction term "TNC dummy * level of development," is never a significant predictor in our models. Thus, the conventional assumption of accelerated convergence—TNCs are supposed to produce particularly positive effects in the least developed countries—cannot be upheld. Yet the same is true for the pessimistic claim that TNCs tend to produce their worst consequences in the world's most backward economies.

CONCLUSIONS AND DISCUSSION

Regarding income inequality as the dependent variable, all empirical studies included in our survey indicate that there is a notable and statistically significant positive (i.e., "harmful") relationship with TNC presence. It can be shown that, *ceteris paribus*, countries with high levels of dependence on foreign transnationals suffer from comparatively high levels of income concentration. To some extent, this relation seems to be influenced by the fact that TNCs preferably invest in unequal countries with relatively abundant cheap labor and wealthy elites. Yet, several studies show that the positive regression slope is still valid when the effect of reverse causation is controlled for (Beer and Boswell 2002; Kentor 2001). We can therefore conclude that the activities of TNC affiliates indeed tend to augment income inequality and "may in fact benefit elite segments of the population over others" (Beer and Boswell 2002: 52). This finding supports the expectations of the pessimistic position proposed by many *dependencia* and world-system theorists. It is important to note, however, that the corresponding regression coefficients show relatively large standard errors. One could thus argue that the studies we surveyed rather support the skeptical approach towards TNCs than the pessimistic position. Possibly, the presence of foreign transnationals leads to an increase in income concentration only under a *laissez faire* regime, whereas in the (fewer) countries with apt and development-oriented bureaucracies this tendency is offset by adequate political measures.

Although many advocates of corporate globalization contend that high TNC-induced inequality may be the price for accelerated economic development, the present analyses of data on the 1980s and the 1990s reveal no statistically significant effect from TNC presence on GDP per capita growth. Contrary to the predictions of standard economic theory, TNC affiliates do *not* systematically spur economic progress within their host countries. Nor do the activities of TNCs contribute to faster convergence of national incomes on a global level. In other words, TNCs are by no means "automatic" and systematic catalysts of socio-economic development, and the corresponding premises and principles underlying the Washington Consensus turn out to be mistaken. Although praised again and again by the most powerful organizations in the contempo-

rary world system, unconditional openness towards TNC investment is not an appropriate remedy for underdevelopment. Governments in the South and everywhere should refrain from trying to attract TNC investment *à tout prix*. As indicated by our additional tests with interactive equations, tax incentives for foreign investors and other TNC-friendly policies probably just diminish the important growth-generating capacity of the (neglected) local sector.

Then again, our findings not only contradict the optimistic view on TNCs proposed by standard economic theory. Concerning growth as the dependent variable, our results are at odds with the pessimistic position as well. We find no empirical support for the assumption that economic growth in developing countries is directly and systematically hampered by the presence of foreign-owned firms. In this respect, our contemporary results differ substantially from the findings for the late 1960s and the 1970s. The earlier results, which unequivocally supported a critical and pessimistic view on TNCs' activities, cannot be replicated. The negative effect of TNC presence on the growth-generating capacity of domestic investment discovered earlier by Dixon and Boswell (1996b) has remained, but the generally negative impact on growth and convergence seems to have weakened.

This withering away of a previously strong statistical effect leads us to a further question. How come a relation not significantly different from zero supplanted the negative growth effect of TNC presence found in the 1960s and 1970s? Following de Soysa and Oneal (1999), it could be argued that TNCs *per se* have become harmless for economic growth. This interpretation does not seem overly convincing, though. Neither the will of foreign transnationals to generate maximum economic profits, nor their ability to rationally pursue this aim, have been subject to fundamental changes. In our opinion, the recent results and the fact that they differ from older findings should be interpreted in the light of the skeptical position presented in section 2. We contend that a significant number of developing country governments implemented "smart" regulations on foreign firms, which now prevent TNC activities from displaying their potentially negative impact on socio-economic development in each and every situation.[19] Yet, two points deserve to be mentioned. First, it should be clear that this state-oriented interpretation of our findings is rather tentative and requires further exploration.

We clearly need more knowledge on the specific possibilities, and limitations, of host country governments to convert the activities of foreign-controlled firms into equitable growth. This knowledge can only be gathered in detailed case studies and "small-N comparisons," which eventually result in policy variables to be used in future cross-national tests. Second, it should be pointed out that our analyses focus on medium-term effects, i.e., the consequences of TNC presence within a 10-year growth period. The absence of such medium-term growth effects for the 1980s and early 1990s does not preclude the existence of long-term effects as discovered by Kentor (1998, 2001). To disentangle these medium-term and long-term effects is thus an important task at the top of the research agenda. It can be accomplished by simultaneous consideration of past and present TNC activities in one empirical model.

Another interesting task for future research will be to theorize and investigate sector-specific differences. This becomes more and more critical, since TNCs from the service sector are nowadays playing a much more important role than two or three decades ago. Even in developing nations, TNC presence can no longer be equated with extractive activities or with industrial production for the host country's internal market. There are "new" types of TNC activities to be accounted for. Assuming that these new activities are more beneficial than the activities of traditional TNCs, this could serve as an additional explanation for the fact that our new results differ from older findings. Unfortunately, as mentioned in section 3, sectoral FDI data is very rare and thus unsuitable for broad cross-national studies.

Finally, we need to go on studying not only TNCs but also other factors that influence growth and income distribution. Only then can we disentangle the diverse sources of success and failure in overcoming the burden of underdevelopment. The better we can isolate TNC-related factors, the better our case for making TNCs accountable.

[19.] This presumed increase in the number of governments pursuing adequate measures of dependency management may seem somewhat surprising, given that political pressures forcing national governments to deregulate and liberalize TNC investment became

much stronger. It would indeed be naïve to claim that the political opportunities for FDI-regulating measures and other forms of dependency management could have grown. It can be argued, however, that more and more governments learned to use the existing (or even diminishing) scope for action to their countries' maximum benefit , probably by copying to some extent the FDI policies of the successful late-developers Japan, Korea and Taiwan.

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APPENDIX

Sample[20]

The sample contains the following 84 cases (*included in the sub-sample of 63 developing countries): Algeria*, Argentina*, Australia, Austria, Bangladesh*, Belgium, Benin*, Brazil*, Burkina Faso*, Burundi*, Cameroon*, Canada, Central African Republic*, Chile*, Colombia*, Republic of Congo*, Costa Rica*, Cote d'Ivoire*, Denmark, Dominican Republic*, Ecuador*, Egypt*, El Salvador*, Finland, France, Gabon*, The Gambia*, Ghana*, Greece, Guatemala*, Haiti*, Honduras*, Hong Kong*, Hungary*, Iceland, India*, Indonesia*, Ireland, Israel*, Italy, Jamaica*, Japan, Kenya*, Republic of Korea*, Lesotho*, Madagascar*, Malawi*, Malaysia*, Mali*, Mauritius*, Mexico*, Morocco*, Nepal*, Netherlands, New Zealand, Nicaragua*, Niger*, Nigeria*, Norway, Pakistan*, Papua New Guinea*, Paraguay*, Peru*, Philippines*, Portugal, Rwanda*, Senegal*, Singapore*, South Africa*, Spain, Sri Lanka*, Swaziland*, Sweden, Switzerland, Thailand*, Togo*, Trinidad and Tobago*, Tunisia*, United Kingdom, United States of America, Uruguay*, Venezuela*, Zambia*, Zimbabwe*.

Variables

GDP per capita growth (GROWTH)

Growth rate of Gross Domestic Product per capita (GDPc) 1980–90 and 1985–95;

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20. In an early draft version of this paper, which we presented at the XVth ISA World Congress in Brisbane (Australia), three cases (Nepal, Papua New Guinea, and Paraguay) were erroneously excluded from the sub-sample of developing countries. The results, however, were very similar to the results presented here.

$x = \lg 10(GDPc_t) - \lg 10(GDPc_{t-1})$.

Source: World Bank (1999) for GDP figures in constant prices of 1995 and for total population.

GDP per capita growth 1985–95: the original value for Zambia constituted an outlier; it was thus recoded according to the procedure proposed by Bornschier and Heintz (1979: 128).

Initial level of Development (DEV)

PPP–corrected GDP per capita 1980 and 1985.

Source: ibid.

While GDP per capita is logarithmically transformed in many cross-national studies (Dixon and Boswell 1996a, 1996b; Firebaugh 1992, 1996; Kentor 1998, 2001; and many others), this transformation is not needed here. Since we use PPP-corrected values, this variable neither exhibits an overly skewed distribution, nor does it contain any outliers. (To eliminate any doubts, we re-estimated all models in table 1 using GDP per capita in its logged form. The results are the same.)

It was necessary, however, to residualize this variable from total GDP (i.e., the variable SIZE) in all growth models for the total sample (n=84) to deal with problems of high multicollinearity (in the case of $GDPc_{[PPP]80}$ and $SIZE_{80/85/90}$, for instance, Pearson's r is .73). We therefore regressed the actual GDP per capita data on SIZE (see below), and saved the residuals. Residualizing was not necessary in the models for the sub-sample of 63 LDCs, since DEV and SIZE show only modest correlations (see tables A–1b and A–1d).

Domestic investment rate(DIR)

Growth rate of total domestic capital stock (DS) 1980–90 and 1980–95;

$x = \lg 10(DS_t) - \lg 10(DS_{t-1})$.

Total domestic capital stocks are estimated by adding up gross domestic investment over a period of 10 years and taking account of an annual depreciation rate of 10%:

$DS_t = GDI_{t-10} * 1/10 + GDI_{t-9} * 2/10 + \ldots + GDI_{t-0} * 10/10$

Source: ibid. for gross domestic investment rates (GDI/GDP) and GDP figures in constant prices of 1995.

Size of the economy (SIZE)

Average GDP 1980, 1985 and 1990, or 1985, 1990 and 1995 (logged values);

$x = 1/3 * \lg 10(GDP_{1980}) + 1/3 * \lg 10(GDP_{1985}) + 1/3 * \lg 10(GDP_{1990})$.

Source: ibid. for GDP figures in constant prices of 1995.

We use logged values to correct for the highly skewed distribution of the raw data. The logarithmic transformation also eliminated the various outliers in the total sample as well as in the sub-sample of developing countries.

Openness (OPEN)

Average trade ratio (T) 1980, 1985 and 1990 or 1985,1990 and 1995;

$x = 1/3 * T_{1980} + 1/3 * T_{1985} + 1/3 * T_{1990}$ or $x = 1/3 * T_{1985} + 1/3 * T_{1990} + 1/3 * T_{1995}$.

Source: ibid.

The values for two cases (Singapore and Hong Kong) were recoded.

Human capital (SEC)

Secondary school gross enrollment rate 1970 and 1975

$x = lg10(GDPc_t) - lg10(GDPc_{t-1})$.

Source: ibid.

This indicator of human capital measures the total secondary school enrollment, regardless of the students' actual age, to the population of the age group corresponding to this level of education.

Foreign investment rate(FIR)

Growth rate of foreign capital stock (FS) 1980–90 and 1980–95;

$x = lg10(FS_t) - lg10(FS_{t-1})$.

Sources: UNCTAD (1995) for FS_{1980} and FS_{1990}, UNCTAD (2000) for FS_{1995}.

Foreign investment 1985–95: the values of Hungary and Zimbabwe both constituted outliers and were thus recoded.

TNC presence (PEN)

Relative importance of TNCs in 1980 and 1985, as measured by the ratio of FDI inward stock and total domestic capital stock;

$x = FS_t / DS_t * 100$.

Sources: see above.

TNC presence 1980: the values for Zimbabwe and Togo were recoded (although this is relevant only for the alternative tests reported in table 1b and has no influence on the construction of the TNC dummy).

TNC presence 1985: for three cases (Zimbabwe, Togo and Nigeria), the values were recoded.

TNC dummy (Dummy)

Dichotomous measure of TNC presence 1980 and 1985.

Cases are coded "0" on this variable, when their value on the variable "TNC presence" is below the median, otherwise they are given the value "1".

Table A-1a – Bivariate Correlations (Pearson's r-coefficients) for n=84 DCs and LDCs, 1980–90

	(2) DIR	(3) OPEN	(4) SIZE	(5) SEC	(6) FIR	(7) DUMMY
(1) Level of development (DEV)	– .10	.40	.00§	.46	.11	.09
(2) Domestic investment rate (DIR)		.08	.03	– .02	.35	– .12
(3) Trade Openness (OPEN)			– .28	.09	.08	.17
(4) Size of the economy (SIZE)				.64	.33	– .23
(5) Human capital (SEC)					.29	– .15
(6) Foreign investment rate (FIR)						– .37

§ *The zero correlation is due to the residualizing procedure described above.*

Table A-1b – Bivariate Correlations (Pearson's r-coefficients) for n=63 LDCs, 1980–90

	(2) DIR	(3) OPEN	(4) SIZE	(5) SEC	(6) FIR	(7) DUMMY
(1) Level of development (DEV)	– .18	.23	.53	.57	.11	– .08
(2) Domestic investment rate (DIR)		.12	– .01	– .05	.44	– .14
(3) Trade Openness (OPEN)			– .30	.17	.19	.17
(4) Size of the economy (SIZE)				.47	.11	– .24
(5) Human capital (SEC)					.11	– .16
(6) Foreign investment rate (FIR)						– .35

Table A-1c – Bivariate Correlations (Pearson's r-coefficients) for n=84 DCs and LDCs, 1985–95

	(2) DIR	(3) OPEN	(4) SIZE	(5) SEC	(6) FIR	(7) DUMMY
(1) Level of development (DEV)	– .14	.38	.00§	.46	.00	.05
(2) Domestic investment rate (DIR)		.20	.18	.07	.38	– .15
(3) Trade Openness (OPEN)			– .25	.12	.22	.20
(4) Size of the economy (SIZE)				.67	.17	– .20
(5) Human capital (SEC)					.17	– .01
(6) Foreign investment rate (FIR)						– .40

§ *The zero correlation is due to the residualizing procedure described above.*

Table A-1d – Bivariate Correlations (Pearson's r-coefficients) for n=63 LDCs, 1985–95

	(2) DIR	(3) OPEN	(4) SIZE	(5) SEC	(6) FIR	(7) DUMMY
(1) Level of development (DEV)	.06	.31	.54	.66	.15	– .03
(2) Domestic investment rate (DIR)		.23	.20	.13	.37	– .16
(3) Trade Openness (OPEN)			– .25	.24	.26	.15
(4) Size of the economy (SIZE)				.51	.11	– .19
(5) Human capital (SEC)					.19	– .03
(6) Foreign investment rate (FIR)						– .46

Table A-2 – Basic models without TNC-related variables

Dependent Variable: GDP per capita growth; OLS regressions

		1980–90		1985–95	
		(1)	(2)	(3)	(4)
Initial Level of Development (DEV) *GDP/capita 1980 and 1985 (PPP-values)*	b = ß = (t = [VIF =	– .03** – .29 – 3.7 1.7]	– .00** – .35 (– 3.5) [2.2]	– .02** – .21 (– 2.7) [1.8]	– .00 – .06 (– .6) [2.5]
Domestic investment rate (DIR) *Growth of total capital stock*		.32** .30 (9.6) [1.0]	.31** .57 (7.9) [1.1]	.40** .67 (10.1) [1.2]	.41 .68 (9.6) [1.2]
Openness (OPEN) *Average trade ratio*		.00** .42 (6.1) [1.4]	.00** .50 (5.3) [1.6]	.00** .24 (3.4) [1.5]	.00* .19 (2.2) [1.9]
Size of the economy (SIZE) *Average GDP 1980, 85, 90 and 1985, 90, 95*		.03** .29 (3.2) [2.4]	.07** .53 (5.3) [2.2]	.02† .17 (1.7) [2.8]	.05** .30 (3.0) [2.5]
Human capital (SEC) *Secondary school enrollment rate 1970 and 1975*		.00** .30 (3.1) [2.8]	.00† .17 (1.9) [1.9]	.00* .24 (2.3) [3.1]	.00 .15 (1.7) [1.9]
Constant		– .41** (t= – 4.4)	– .83** (– 5.9)	– .28** (– 2.5)	– .55** (– 3.4)
R² adjusted		.71	.72	.71	.75
Number of Cases		84	63 (LDCs)	84	63 (LDCs)

** p<0.01, * p<0.05, † p<=0.1 *(two-tailed tests)*