UNITED NATIONS CONFERENCE ON TRADE AND DEVELOPMENT

EXPORTS OF SERVICES AND ECONOMIC GROWTH IN DEVELOPING COUNTRIES[1]

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Contents

Executive Summary

This paper illustrates the main trends in international trade in services during the last two decades of the last century, and explores quantitatively the nexus between GDP growth and exports of services, focusing particularly on the role of developing and transition countries. The Introduction briefly exposes some of the shortcomings and methodological problems affecting IMF Balance of Payments (BOP) statistics on international trade in services. The descriptive statistical analysis in Section 2 shows that services exports have been the most dynamic component of world trade and that the world market share of developing countries has been on the rise. However, a generalized deceleration in the expansion of world trade in services occurred in the late 1990s. The growth rate of services exports from developing countries slowed down, and their ability to import services also declined, with a negative impact on their development perspectives.

Section 3 focuses on the main exporters in each of the services sub-sectors among developing and transition countries. Most of them are either large semi-industrialized Asian countries or European transition countries that have achieved or conserved a relatively high level of industrial and technological development with respect to the rest of the non-developed world, but there are also cases of other developing countries showing a strong tendency to specialize in one or a few specific services sub-sectors.

Correlation analysis in Section 4 shows that, in the long run, services exports do have a positive impact on GDP growth in developing countries. Yet, for developing countries the services exports/GDP growth nexus is weaker than in the case of developed countries. Moreover, in most developing regions, the growth-enhancing impact of exports as a whole appears to have declined in the 1990s, although this decline appears to be due more to the merchandise component of exports than to the services component.

In the Conclusions, a tentative explanation for the aforementioned results is proposed. Export-oriented services activities in developing countries are often under the control of a foreign economic agent and tend to be poorly integrated with the rest of the domestic economy. Thus, their potential as engines for growth is relatively weak. Moreover, many previously inward-oriented developing countries, under conditions of financial duress, have diverted resources towards exports as a goal per se, rather than in the framework of a comprehensive long-term growth-maximizing strategy. Such opening-up reforms have ended up facing diminishing returns.

INTRODUCTION

It is a well-known fact that presently available official statistics on international trade in services are far from being exhaustive and comprehensive. The main reasons for this statistical inadequacy are threefold, all related to the peculiar nature of services as tradable economic activities, and to the relative novelty of multilateral attempts to evaluate and regulate international trade in this domain. The first, and most important, is that the GATS typology, based on four modes of supply, is not matched so far by existing statistics, especially with respect to mode 3 (commercial presence). As a result, most statistics on trade in services fail to capture local sales of services by foreign firms. *A fortiori*, they do not distinguish exports of services carried out by nationals or by foreign enterprises, respectively. The other two reasons stem from a divergence in classification criteria between existing statistics on trade in services and the GATS commitments (mostly based on the GNS classification[2]), and more broadly from the impossibility (so far) of matching statistically the GATS distinction among the four modes of supply[3] (see WTO 1997, part II).

The only comprehensive and consistent statistical source on international trade in services is constituted by the IMF Balance of Payments (BOP). More detailed sectoral statistics are available for most services sectors, but they are collected with sector-specific criteria and are not mutually comparable in a systematic fashion. Both BOP and sectoral statistics suffer from the drawbacks outlined above. Data on trade in services carried out abroad by foreign affiliates of transnational corporations are only available (for some services sectors) for the United States, the only country which reports these statistics on Foreign Affiliates Trade (FAT) on a regular basis. Statistical coverage on trade in services is improving, and the Inter-Agency Task Force on Trade in Services Statistics is developing a common manual which will represent a significant step forward in striving to improve coverage and accuracy of services statistics. However, statistical reporting on trade in services is not likely to match the breadth and precision of statistics on merchandise trade in the foreseeable future due, among other things, to methodological problems, a major one being the difficulty in distinguishing between price and volume data in services production and trade[4] (see WTO 2000, para V).

This paper will utilize as a source BOP data made available on-line by WTO and UNCTAD.[5] These data, in spite of their shortcomings, are consistent and internationally comparable, and can also usefully be related with other basic macroeconomic statistics such as total GNP, total exports, and the like. Besides data on trade in total services, BOP data on trade in services by sector are also available and will be utilized in some of the tables presented and commented on below.[6] Sectoral trade data refer to 10 services sectors (transport; travel; communications; construction; computer and information services; financial and insurance services; other business services; royalties and license fees; personal, cultural and recreational services; government services). Most IMF members report

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[2] The GNS classification is largely based on the UN-CPC classification but deviates from the latter in telecommunication, financial, and transport services.

[3] The first reason (lack of reflection of mode 3 trade transactions in existing statistics) is in fact but the most relevant manifestation of the statistical inadequacies broadly referred to under reason three.

[4] It is more difficult than in the case of merchandise trade to determine to what extent an increase in trade for a particular services sector is due, respectively, to: changing in relative prices; diverging variations in the exchange rate and in inflation among trading partners; improvements in product quality; changes in infra-sectoral product composition; "true" quantitative increases in trade volumes (WTO 2000, p.17).

[5] Most BOP statistics on trade in services were reported according to the concepts and classification system of the 4th edition (1977) of the IMF Balance of Payments Manual (BPM-4). A transition is now occurring to the conceptual framework and the criteria of the 5th edition of the manual (BPM-5). With respect to BPM-4, BPM-5 is more disaggregated and relatively less discordant with respect to GNS.

[6] BOP data on trade in services by sector are not directly comparable to other sector-specific, such as the International Civil Aviation Organization (ICAO) for air transport, the International Telecommunication Union (ITU) for telecommunications, and the like.

aggregate trade statistics for transportation, travel, insurance[7], and other business services, but fewer report data for the other services sectors.

Comprehensive statistical studies on the role of developing countries' role in international trade in services are scarce. A recent, broad evaluation, based largely on US services import data, is presented in Langhammer (2002). However, I am aware of only one systematic statistical exercise on the evolution of international trade in services based on the IMF BOP database, which was carried out by the WTO Secretariat (WTO 2000). However, this paper differs from WTO 2000 in two fundamental aspects: it presents a longer-term view of main trends (from 1980 to 1999/2000) and, more importantly, it focuses mainly on developing and transition countries[8] (consistently with the UNCTAD mandate). To this respect, it might be worthwhile to stress again that in interpreting the economic meaning of the data presented and discussed below, of course, particular caution is warranted, taking into account the multiple statistical shortcomings mentioned above, *a fortiori* in the case of developing and transition countries. The evaluation of statistics on services exports stemming from developing countries in a "development perspective", in particular, requires additional prudence, as it is impossible at the present stage to disentangle systematically which share of increasing export receipts from a services sector in a developing country (i.e., tourism) accrues to national firms and which to foreign affiliates of TNCs. If the bulk were to be captured by the latter (as is often the case), it is clear that the positive development impact[9] of the expansion of that particular services sector would be far lower than if national firms were the main agents driving the sector's export-oriented growth.

TOTAL EXPORTS OF SERVICES BY COUNTRY GROUPS

Table 1, TOTAL EXPORTS OF SERVICES, presents data on total trade flows in services for various groups of countries. Table 1a refers to exports of total services, Table 1b to imports, and Table 1c to the balance of trade in services. For each flow the table shows the values of total services exports, imports, and exports in millions of dollars, the corresponding shares of world total, and the growth rates of exports for three different periods (1980–1990; 1990–1995; 1995–2000).[10]

Total exports of services (Table 1a)

International trade in exports worldwide has been expanding rapidly in the last decades of the 20th Century, growing on average much faster than both the world GNP and world merchandise trade.[11] In absolute terms, total exports of services more than quadrupled between 1980 and 2000, growing from US$337bn to US$1.4 trillion.[12] However, this expansion took place at a decreasing pace, with the rate of growth slowing down slightly in the early 1990s but more than halving in 1995–2000, with respect to the trend prevailing in the 1980s. If some kind of slowing down is inevitable for any new growth

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[7] As the aggregate sectoral classification for these services is "insurance and financial services", the corresponding data presented below should be considered with caution, as for many countries the insurance sub-component is likely to be better reflected in official BOP data than the financial services component.

[8] In the remainder of this paper, unless "developing" and "transition" countries are specifically distinguished from each other, the term "developing countries" covers all countries not pertaining to the developed countries' group and, therefore, is equivalent to the alternative wording "developing and transition countries".

[9] Such a positive development impact might nevertheless be relevant, mainly in terms of the effects on employment and on the balance of payments. On the negative side, adverse impacts could manifest themselves as well, for instance with respect to the environment or to the depletion of non-renewable natural resources. As a general rule, a meaningful evaluation of the broad development impact of the export-oriented growth of a service activity in a developing country might only be possible, taking into account all these factors in the framework of a sector-specific country study.

[10] In this table, as in all other tables, growth rates refer to services exports in current US$. Therefore, they over-estimate the real growth rates by an amount equal to international inflation.

[11] During the 1990s, however, merchandise and services exports expanded at roughly the same pace.

[12] As these figures are in current US$, growth of export services worldwide is, in fact, lower but still quite remarkable.

trend starting from a very low basis, this statistical effect does not appear to be sufficient to explain such a marked slowdown, in particular for the most recent period. Therefore, it must be acknowledged that a real and pronounced deceleration in international trade in services did occur in the second part of the 1990s, along with the global deceleration of the world economy.[13]

In Table 1, in order to focus first and foremost on the divide between developed countries and the rest of the world, all countries were classified into two large groupings: "Developed countries" (DDCs) and "Developing countries" (DNCs).[14] Growth in total exports of services, starting from a much lower basis, has been faster on average in developing countries than in developed countries in all of the three sub-periods, allowing the former to capture an increasing share of world trade. It is also noticeable that, contrary to what happened in the DDCs, growth in services exports from DNCs actually accelerated in the early 1990s. However, in the latest period, the growth rate of total exports of services roughly halved, both in developed (from 6.7 per cent in 1990–1995 to 3.6 per cent in 1995–2000) and in developing countries (from 12.1 per cent to 5.9 per cent). These broad statistical trends are consistent with Langhammer's skeptical view: "Measured both in terms of growth and shares, world trade in commercial services has not risen spectacularly… in 1998 merchandise trade still comprised four fifths of world total trade…For developing countries, the contribution of service exports to their total trade was even declining…" (Langhammer, 2002, 297–298).[15] In fact, the most recent available data show that by the year 2000, the share of services in developing countries' total exports had actually declined to 14.6 per cent, lower than in 1995 (15.5 per cent) and even than in 1990 (15 per cent).

Among regional groups, there are important differences, although the decelerating trend is common to all developing countries. Exports of services from American DNCs grew less than the world average in the still-dynamic 1980s and, marginally, in the early 1990s. As a result, even with a modest relative recuperation in the slow-growing late 1990s, their share of world services exports was lower in 2000 (4 per cent) than in 1980 (5.1 per cent). The relative weight of services in Latin American total exports also declined, and by 2000 it was 2.5 percentage points lower than in 1990.

African DNCs, on the contrary, which had experienced a below-average services export performance during the 1980s, were the only regional group which managed to accelerate the dynamism of its services exports over the 1990s. As a result, Africa's share of total world services exports increased a bit, although it remained very low (2 per cent by the year 2000). It is also interesting to note that Africa is the only developing region where the relative role of services in total exports kept increasing during the 1990s: as result, by the year 2000, the share of services in total exports in Africa was 20.5 per cent, the highest among developing regions[16] and higher even than the average for developed countries.

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[13] The deceleration of international trade in services took place in correspondence to the quasi-universal – albeit progressive and still partial – implementation of the new GATS regime. Such a disappointing trend, so far, appears to run counter to the over-optimistic expectations pinned by many analysts on the growth-enhancing potential of the liberalization of multilateral rules on trade in services.

[14] Country groupings in Table 1 follow the UNCTAD database classification. According to this classification, the group "Developing countries" is constituted by developing countries in America, Africa, Asia, and Oceania, plus a fifth sub-group, "European developing countries", constituted by Malta and by some republics formerly belonging to Yugoslavia. The remaining formerly socialist European countries are classified in the UNCTAD database as belonging to a sixth sub-group, "Countries in Eastern Europe". Long-term series on trade in services in transition economies, and especially in the latter sub-group (which is, in fact, residual), are not consistent and historically comparable, due largely to the limited availability on trade in services in the former USSR. Therefore, data on the residual sub-group "Countries in Eastern Europe" are not presented in Table 1. Consistently, the sum of data referring to developed and developing countries is less than the world total.

[15] Langhammer refers to the 1989–1998 period.

[16] The share of services in total exports is higher in "developing Europe", but this region actually covers some formerly socialist, relatively industrialized transition countries (see note 13).

Asian DNCs expanded services exports at an over 14 per cent yearly rate up to the mid-1990s, but their performance slowed down markedly in 1995–2000 (less than 6 per cent per year on average). In spite of this marked slow-down, Asia's share of world total services exports in 2000 was 18 per cent, equivalent to more than twice the correspondent figure for 1980 and to 2/3 of total services exports from developing countries.[17]

Trends in the remaining two regional groups cannot be interpreted along the same lines. The group of Oceanian DNCs is just too small to allow for any generalization beyond the specific cases of each individual country. The group of European DNCs is essentially formed by semi-industrialized former socialist countries, and therefore, the severe drop in services exports recorded in the early 1990s is to be seen in the framework of the overall collapse of their economy. That collapse eventually gave place to a modest recovery, which barely allowed services exports to regain the nominal (absolute) level of 1990 by the end of the decade.[18]

Looking at two prominent groups of DNCs, namely major oil and manufacturing exporters, we see that up to the mid-1990s, the former were losing ground (in relative terms) as services exporters, while the latter were expanding at a very fast pace. More recently, however, under the impact of increases in oil prices and of the Asian crisis, among other factors, this trend has been reversed, at least temporarily. When developing countries are grouped according to income, it can be seen that growth rates of services exports are common to all of them up to the mid-1990s, but in the 1995–2000 period only low-income countries maintained growth rates over 10 per cent, while both middle-income and low-income countries experienced a marked deceleration. The fact that the relative performance of low-income countries with respect to other DNCs has been improving over time and that since 1990, it has been better than both the world and the DNC average, can be considered mildly encouraging. However, this trend does not apply to all low-income countries. Looking specifically to the performance of three specific groups of particularly disadvantaged countries (LDCs, heavily indebted poor countries, and land-locked countries),[19] it is apparent that the only one to exhibit satisfactory results is the group of land-locked countries. LDCs and heavily indebted poor countries, on the contrary, saw their already meager share of world trade in services shrink progressively over the 1980–2000 period.[20]

Total imports of services (Table 1b)

Due in part to the limited accuracy of statistical data (see below, comments on Table 1c), trends in international imports of services by very large groups of countries broadly mirror those in services exports but appear to exacerbate the already observed declining trend in growth rates. In the last sub-period (1995–2000), in particular, recorded imports of services worldwide grew by only 3.3 per cent per year, less than one half the growth rate of the preceding sub-period, which had already exhibited a deceleration with respect to the 1980s. This deceleration appears to have been due mainly to a severe slowdown in developed countries' services imports (from 6.3 per cent per year on average in 1990–1995 to 2.8 per cent per year in 1995–2000), but the correspondent decrease for developing countries (from 10 per cent to 4.8 per cent per year) was also steeper than in the case of imports. As the deceleration was sharper in the North, the share of developing countries in total world imports of

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[17] A comparison between Asia's and Latin America's shares of world total services exports is particularly telling. The ratio between the two was less than 1.5/1 in 1980 but rose to more than 4/1 in 2000.

[18] Historical data series on trade in services in European developing countries suffer, to some extent, from the same limitations of trade data, referring to "countries in Eastern Europe", and therefore are to be interpreted in a purely indicative fashion (see note 13).

[19] As is well known, some countries belong to more than one of these sub-groups.

[20] To some extent, this result is a truism, as the groups of LDCs and heavily indebted poor countries are, by definition, composed of poor countries that are severely strained, both economically and financially. Conversely, if a country performs well, it will eventually lose the dubious privilege of belonging to these groups. Land-lockedness, on the contrary, is a permanent and non-modifiable feature that can constitute a relative but not an absolute constraint to development.

services increased moderately during the 1990s, and by 2000, it was back to its 1980 level (27 per cent).

Although possibly magnified by statistical imperfections, these figures indicate a significant decline in developing countries' ability to import services – most of which are absolutely necessary to sustain any kind of growth or developing path in the contemporary, increasingly globalizing world economy - in the late 1990s. The deteriorating trends are common to all developing country sub-groups[21] – although low-income and land-locked countries fared someway better than others – but are particularly pronounced in the case of Africa, in contrast with this region's relatively positive performance on the side of services exports.

Balance of trade in services (Table 1c)

The above-mentioned imperfections of available statistical information are made apparent by the large gap between world exports and imports of services, which appears to show a "positive" trend in the balance of trade in services for the whole world, which shifts from a deficit (up to 1995) to a surplus position (in 2000). With this caveat, Table 1c also shows a continuous decline in developing countries' services balance, which fell from US$42 in 1980 to US$36 in 1990 and to US$27 in 2000. This decline is almost exclusively the product of the quasi-disappearance of the services deficit in Africa (from over US$12 in 1980 to less than US$2 in 2000). The development implications of this trend are ominous, as Africa is the world region which – as its economic structure is the least diversified and articulated – is the most dependent on services (and goods) imports, while at the same time being also the least capable of financing such imports with its own resources. More broadly, for developing countries as a whole, the sign of these figures (if not the magnitude) probably reflects a true and important phenomenon which is still poorly understood. A tentative and very preliminary interpretative assumption is the following: During the late 1990s, indebtedness and crisis conditions, and the difficulty of obtaining access to multilateral development financing, contributed to an increase in many developing countries' urgency to cut imports and boost exports (even at the cost of sacrificing present and future growth perspectives), and to actively court foreign investors. The impact of these policies was also felt by services, where imports were sacrificed and exports further encouraged. TNCs also extended their commercial presence throughout the developing world, often according priority to foreign exchange generating services (i.e., in the travel sector, which includes tourism). However, the share of services exports which actually accrued to developing countries' enterprises, and to what extent the change in developing countries' balance of services actually reflects a true increase in international competitiveness, are complex questions which cannot be answered in a satisfactory manner in this note but might be tackled by future research.

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[21] The only sub-group to record an increase in the growth rate of services imports between 1990-1995 and 1995-2000 is that of the European developing countries, many of which were plunged into war during the early 1990s.

INTERNATIONAL TRADE IN SERVICES BY SECTOR: THE WEIGHT OF DEVELOPING AND TRANSITION COUNTRIES, AND THE ROLE OF MAIN EXPORTERS IN THE DEVELOPING WORLD

Tables 2-11 refer to the 10 services sectors. Each one refers to one of the ten main services sectors (according to the BOP classification), and is composed of four parts. As some transition countries are among the major non-developed exporters in various services sectors, I deemed it necessary not to exclude them from the sectoral analysis, as I did for the sake of simplicity and consistency in the general analysis presented in Section 2. Part a presents export data for the world total and for a very large aggregate (DNC, TNC) constituted by all non-developed countries (i.e., developing and transition countries)[22]. Part b presents the same set of data for the major exporters (of services of each particular sector) among developing and transition countries[23]. Parts c and d show, for each of the above-mentioned major exporters, the sector's share in total export of services and the country's share of world total exports, respectively.

> (a)   Table 2 presents data on exports of transport services, which, along with travel services, make up more than 50 per cent of world trade in commercial services (WTO 2000, p.7). Their importance is indirectly reflected in the figures presented in Table 2c, which show that transport services' share of total exports of services is quite high for many of the major developing exporters (among them Korea, Kuwait, and Ukraine).

Several developing and transition countries are important exporters of transport services. Among transport services, those of most relevance, especially for developing countries, are maritime transport services.[24] In many countries, the strength of the commercial fleets stems from the competitiveness of the national shipbuilding industry, a mature but still quite relevant industrial sector. Actually, as can be seen from Table 2 b, most major exporters among non-developed countries are either European transition countries or relatively advanced semi-industrialized Asian and Latin American developing countries.[25] As opposed to the cases of other services sectors, it can be generally assumed that developing countries that enjoy a strong exporter position as transport services traders actually own it mainly to the real international competitiveness of their national agents, rather than to the activities of foreign operators. Therefore, transport services exporters amongst developing and transition countries are likely to be in a position to reap most of the potential financial, technological, and economic benefits stemming from international trade.

The largest developing exporter of transport services is Korea, which experienced very fast growth in exports over the whole 1980-1999 period, but especially in the early 1990s. As a result, by the end of the decade, Korea's exports of transportation services were over US$11bn[26], corresponding to an almost 4 per cent share of the world market (Table 2d). Other strong Asian exporters are Singapore,

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[22] A number of caveats apply to the interpretation of Tables 2-11, and especially of part a. First, the DNC, TNC grouping is larger than the DNC grouping in Table 1 because it includes transition countries. Second, as the growth rates of many sectoral data on services exports are not yet available for the year 2000 for most developing countries, growth rates in Table 2 refer to the periods 1980-1990 and 1990-1999. Third, and most important, due to the aforementioned lack of comparable historical data for most transition countries, the meaning of the aggregate figures referring to the DNC, TNC grouping has to be seen as purely indicative.

[23] An alternative presentation could show exporters in a ranking order.

[24] Disaggregated data for maritime transport services are reported in the UNCTAD Review of Maritime Transport (WTO 1997, p. 12).

[25] The main exceptions are constituted by Kuwait and Nigeria, whose presence among transport services exporters is due to their role as major oil producers. With respect to the latter, in particular, Table 2b shows that – along with the other sectors of the country's economy – Nigeria's transport services trading activities collapsed in the 1980s and, subsequently, underwent a modest recovery.

[26] This figure constitutes the third highest yearly export receipt for any single services sector recorded in a developing country over the whole 1980-2000 period (the first being Singapore's receipts from "other business services" in 1995).

Taiwan, Thailand, Malaysia, Kuwait, and Turkey.[27] Among transition countries, Russia, Poland, and Ukraine are major players, but their performance over the 1990s has been lackluster, reflecting persistent weaknesses in their reforming economies and their difficulties in re-positioning themselves in the international trade network. The largest Latin American economies (Argentina, Brazil, Mexico) are also among the major transport services exporters, but – due also to a weak performance during the most recent period – they do not match the strength of their Asian counterparts.

> (b) The economic significance for developing countries of another major services export sector, travel services (see Table 3), is usually quite different from that of transport services. In most developing countries, a large share of travel services exports receipts accrues directly or indirectly to foreign agents supplying the services and goods acquired by tourists and other travellers,[28] as well as the other inputs needed for the overall functioning of the service. This "leakage" effect tends to be more pronounced, the less developed and the more externally dependent the host country is, and the development impact of trade in travel services is consequently weaker. Taking into account this and other important caveats,[29] tourism has emerged in many developing countries as a powerful and fast-growing foreign exchange provider, and in several cases as the only vital non-traditional sector.

The largest exporter of travel services among developing countries is China (see Table 3b), where the sector underwent an extraordinary fast growth during the 1990s, leading in 1999 to export receipts of US$14bn (the second highest yearly export receipt for any single services sector recorded in a developing country over the whole 1980-2000 period).

China's share of the world market for (internationally traded) travel services in that year was 3.3 per cent, about twice as much as that of Korea and Mexico (Table 3d). The relevance of travel for the whole services component of China's economy is also underlined by its share of total exports of services (almost over 60 per cent in 1999), a figure higher than the correspondent one for any large semi-industrialized economy (Table 3c).[30] Other large travel services exporters are Mexico[31], Korea, Thailand, and Turkey, with more than US$7bn in 1999 and/or 2000. The Philippines, a medium-sized player in this sector, recorded the highest growth rate among developing countries (22.4 per cent) in 1995–1999 (Table 3b).

> (c) Communication services[32] are among the fastest growing traded services sectors, exhibiting double-digit growth rates of exports worldwide up to 1995 and a still quite respectable 5.8 per cent in the less dynamic 1995–1999 sub-period (Table 4a). As opposed to the transport and travel services, which rely mostly on mature technologies,

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[27] India is also among the major developing exporters of transport services, but its role is relatively minor and appears to have been declining in the late 1990s. With respect to China, its absence from the group of major developing exporters of transport services is due essentially to statistical inadequacies, taking into account the country's position in international trade (WTO 1997, p.13).

[28] Travel services exports receipts cover all the expenses of tourists and other travellers during their trips abroad (see WTO 1997, p.13).

[29] The most relevant being the above-mentioned risk of depleting environmental and other non-renewable resources.

[30] Among major exporters, the relative share of travel services exports in total services exports in 1999 was also over or around 50% in Argentina, Croatia, Hungary, Mexico, the Philippines, and Thailand. It is also very high in many smaller developing countries that rely mainly or exclusively on tourism as a provider of foreign exchange.

[31] Mexico, however, lost half of its world market share (which in 1980 was 3.4%, the highest among non-developed countries) over the 1980s and 1990s.

[32] As opposed to the GNS classification, the BPM-5 classification does not include audiovisual services among communication services. In BOP trade statistics, audiovisual services are part of personal, cultural and recreational services.

communication services are among the most high-technology intensive economic activities. Yet, the very speed and specific characteristics of the evolution of information technologies, besides enabling TNCs to exploit the cost advantages offered by the segmentation and de-localization of production processes, also creates market niches that can be captured by semi-independent operators in developing countries (see Teltscher 2002).[33]

Major exporters from developing and transition countries are not numerous, but some of them hold a non-negligible share of the world export market (Table 4d). However, in the late 1990s developing and transition country exporters appear to have fared poorly. The exception is constituted by Mexico, the only developing country with exports of communications services over US$1bn in 1999, after recording a strong 8 per cent growth rate in 1995–1999.[34]

(d)   BOP statistics on developing countries' exports of construction services are particularly poor (see Table 5). This sector, almost by definition, is extremely important for most developing countries, but the overall presence of developing countries' in the international markets for construction services is scarce, in spite of the fact that the construction sector is not among the most technologically advanced.[35] There are, however, two significant exceptions: Turkey and China, both with exports close to US$1bn and world market shares over 3 percent. It can be noted, moreover, that developing exporters of construction services as a whole appear to have recorded a very healthy growth rate also in the 1995-1999 period, while the world market actually shrank due mainly to the Asian crisis (Table 5a).

(e)   The brief observations on trade in construction services apply as well, *a fortiori*, to the statistics on trade in computer and information services (Table 6). Aggregate figures indicate that, starting from an almost zero base in the early 1980s, exports of this most modern, technology-based and dynamic services sector increased extremely fast over the last two decades, maintaining double-digit growth rates worldwide also into the late 1990s and reaching a total value of almost US$30bn in 1999. The role of developing countries in this play, however, is still marginal, in spite of recording overall growth rates higher than the world average (Table 6a). Data on single developing and transition country exporters of computer and information services are scant, although they indicate a strong position of China and, to a lesser extent, Taiwan.[36]

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[33] These observations apply also to other information-technology based services, such as computer and information services (see Table 6) and, in part, to "other business services" (Table 8).

[34] Mexico's export performance in the communication services sector is likely to be attributable to the activities of foreign corporations, rather de-linked from the indigenous technological base, to a larger extent than in the cases of the other handful of Asian and transition players active in this market. If this were true, the development impact of Mexico's strong showing in communication services exports should not be overestimated, especially from the point of view of its significance in terms of technological catch-up. However, of course, only a thorough, specific sectoral study might allow confirmation or disproof of this tentative interpretative assumption.

[35] The bulk of the business for construction services is in the developing world, but most construction firms from developing countries have a hard time achieving at least a minority share of their own domestic markets, let alone attempting penetration into overseas markets.

[36] The scarce (at least, according to global BOP statistics) presence of developing countries in international trade in this computer and information services is also caused by the simple fact that some developing countries, notably India, record these exports under the heading "other business services" (see below).

(f)   Due to the peculiarities of the BOP sectoral classification, trade in several services activities in the domain of the computational and software industry is not recorded under the sectoral heading, "computer and information services" but under the heading, "other business services", which also covers many diverse services essential for trading, distribution, research and development, and other technical and professional activities.

The presence of developing countries in the international market for these miscellaneous services is more relevant than in the cases of many other sectors. If the variously-classified software-related services were considered as a whole, actually, the presence of developing country exporters would be even more relevant: "….computer and data processing services are the industry with the highest share of developing country supply. In 1998, about 30 per cent of US imports in this industry originated from developing countries, with India as the largest single supplier" (Langhammer 2002, pp.304-305).

Major developing players in the sector of "other business services" are all Asian, and many of them reached impressive levels of exports during the last decade. Singapore recorded in 1995 exports receipts for US$16.5bn, the highest yearly export receipt for any single services sector recorded in a developing country over the whole 1980–1999 period, corresponding to almost 6 per cent of the world market. During the subsequent period, characterized by the emergence of the regional financial crisis, Singapore's exports of "other business services" declined, as did those of two other strong exporters: Korea and the Philippines (exports from the latter, which had reached almost US$8bn, actually collapsed in 1995–1999). Conversely, exports of "other business services" from India, Malaysia, and Saudi Arabia increased also in the late 1990s (Table 8b, d).[37] "Software exports have been India's most dynamic export sector" (Teltscher 2002, p.20): the Indian software industry, in fact, is probably the most well-known success story of a developing country exporting highly human capital intensive services (see Arora and Arunachalam (1999); OECD (2000); ILO (2001)). Software services exports from India have been growing at an extraordinary rate of over 40 per cent per year in the late 1990s, reaching over US$8bn by the end of the decade (Table 8b), and they presently constitute a sizeable share of the country's total exports.[38]

(g)   Exports of financial and insurance services have being growing at more than 10 per cent per year worldwide during the last 20 years, reaching a total volume of almost US$100bn by the end of the century. Developing countries, however, are minor players in international financial markets. Moreover, their exports of financial and insurance services almost stagnated in 1995–1999, severely eroding their share of world exports (Table 7a, d). Among major developing exporters, only Mexico in 1980 and China in

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[37] For most major exporters "other business services" constitute the lion's share of their services exports. In the case of Saudi Arabia, exports of "other business services" are the totality of services exports (Table 8C).

[38] According to a very updated estimate by NASSCOM-McKinsey (NASSCOM 2002, quoted in Teltscher 2002), by 2001-2002 software exports came to represent more than 16% of India's total exports. If the present trend will be confirmed in the near future, IT services exports from India will "reach US$77bn by 2008, contributing 10% to the country's GDP (up from 25 in 2002), 30% of all foreign exchange... and creating four million new (direct and indirect) jobs" (Teltscher 2002, p.20).

1995 achieved relatively high shares of world total exports, but they appear to have subsequently lost their positions.[39]

(h)   Exports of royalties and license fees (which include franchising) have been growing fast, both worldwide and in developing countries. However, the role of developing countries in the international markets for this services sector is still very minor (Table 9). Major developing exporters include Asian and Latin American newly industrializing countries (NICs) and Paraguay (Table 9b).[40]

(i)   Exports of personal, cultural and recreational services, which include audiovisual services, have been growing quite strong both from developed and developing countries. In the latest 1995–1999 sub-period, exports from developing and transitional countries still grew at an almost 10 per cent annual rate, but this growth rate – reversing the trend of 1990–1995 – was lower than the world average (Table 10a). BOP data on exports of cultural and recreational services from developing countries show Turkey as the only sizeable player, with more than US$2bn both in 1995 and 1999, and an extraordinarily high two-digit share of the world market (Table 10b, d). However, it is apparent that available statistical information is particularly scant and inadequate in the case of personal, cultural and recreational services, and thus its informative contribution in evaluating the role of developing countries in the world market for this sector is likely to be limited[41].

(j)   The last services sector, government services, has a peculiar nature, as government services are usually non-tradable. Exports of government services occur only under particular circumstances, usually in the framework of intergovernmental bilateral or regional agreements. As this sector is intrinsically different from market-oriented commercial services proper, it is not surprising that exports of government services grew slowly in the 1980s and stagnated or declined in the 1990s (Table 11a).

The role of developing countries in exports of government services is not very relevant (Table 11a). Major developing exporters are Korea, India, Brazil, Egypt, and China (Table 11b).

The overall sectoral picture shows that major developing exporters of services largely coincide with major developing exporters of merchandise, although the overlapping is not complete, as some developing countries with relatively modest merchandise export performances appear to specialize rather successfully in exporting certain kinds of services (e.g., Turkey, Egypt, Paraguay). It is also apparent that, with some interesting exceptions, exporters from developing countries are relatively stronger in traditional, slow-growing services markets:

"The modest performance of developing countries as exporters of services fits in the broad sectoral pattern of service exports. During the nineties, the share of traditional service exports (such as travel and transport) in total commercial services declined while

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[39] The dramatic fall of recorded exports of financial and insurance services from China between 1995 and 1999 is puzzling, and is likely to be imputable to statistical underreporting.
[40] Paraguay's strong position as an exporter in this services sector is due to the two hydroelectrical plants of Itaipu and Yasyreta.
[41] It is well known, for instance, that several developing countries have developed a relatively strong indigenous base in some audiovisual subsectors, and their export performance might not be fully captured by available BOP statistics. In the case of India, for instance, a very large audiovisual industry is flourishing: although it is essentially geared towards the domestic markets, in recent years some audiovisual exports (targeting mainly, but not exclusively, the large overseas Indian community) have taken place, but they might not be adequately captured by BOP statistics.

that of so-called other commercial services (often referred to as producer services) rose sharply…This is not surprising since it is in human capital intensive producer services (financial services, communication services, and marketing services) where developed countries are expected to enjoy comparative advantages and where the emergence of new markets has been benefited from technological innovations originating from and introduced in developed countries" (Langhammer 2002, pp.298–299).

GNP GROWTH, TOTAL EXPORT GROWTH, AND TRADE IN SERVICES: IS TRADE IN SERVICES AN ENGINE FOR GROWTH IN DEVELOPING COUNTRIES?

The complex relationship between exports and growth

Growth of services exports, not differently from growth of merchandise exports, should not be considered as a goal *per se,* but as an instrument in contributing to the achievement of broader economic and social development, especially in developing countries. To this respect, the shortcomings of GDP growth as an overall development indicator are well known. However, even where, as a working assumption, GDP growth is assumed as the only ultimate goal of economic policies, the degree of priority to be accorded to the intermediate goal of export expansion is a matter of controversy. In fact, on one hand, few analysts would deny that the indiscriminate expansion of at least some kinds of exports (i.e., those based on non-renewable natural resources) might in fact be inimical to long-term economic growth – and even more to the broader goal of sustainable development. On the other hand, even fewer, if any, would advocate a fully autarkic growth strategy. However, between these two extremes, the evaluation of the growth-enhancing potential of exports, relative to other economically and socially relevant factors, is a matter of controversy. By the same token, opinions diverge on the question of exactly which role is to be assigned to exports in developing countries' overall growth strategy.

The Export-Led Growth (ELG) hypothesis

The so-called Export-Led Growth (ELG) hypothesis is at least as old as the classical school, as both Adam Smith and David Ricardo supported it (Richards 2001). Among modern economists, Beckerman (1965) attributed exports' favorable impact mainly to the production efficiency gains stemming from improved resources allocation, while Haberlar (1959) stressed the relevance of dynamic benefits, such as the improved availability of foreign capital and technology through the release of the balance of payments constraint. Vernon (1966) focused on the opposite causality channel, in which the self-propelled growth of the domestic economy leads to improved competitiveness and eventually to the expansion of exports. More recent "endogenous growth" theories emphasize the benefits stemming from a dynamic export sector, in a framework characterized by increasing returns to scale and by virtuous technological and managerial spill-over effects towards other sectors (Fedor 1992). Helpman and Krugman (1985) develop some of Beckerman's and Vernon's ideas, arguing that the initial growth spurt favoured by export expansion through the efficiency and allocation effects reverberates in enhanced international competitiveness, fostering a new round of export expansion and paving the way for a virtuous development path.

After several decades and the accumulation of an ever-expanding body of research literature, however, "No consensus has emerged on the theoretical appropriateness of the export-led growth hypothesis…Theoretical disagreement on the role of exports is matched by mixed empirical evidence" (Jin 2002, p.64; Richards 2001). To this respect, it must be taken into account that attempts to show econometrically that exports are a crucial cause of growth face two basic problems. First, exports are themselves a component of GDP, and thus evidence of a correlation is insufficient to prove consistently any actual causal relationship which might in fact exist. Second, other relevant

macroeconomic variables, and especially other components of aggregate demand, are also correlated with GDP growth, and thus a missing variables problem of model mis-specification inevitably arises (Sheehey 1990)[42].

The prevalent conclusion of the numerous studies on developing countries[43] (see, for instance, Balassa (1978); Jung and Marshall (1985); Ram (1985); Chow (1987); Jin (1995); Levin and Raut (1997); Bahmani-Oskoee et al. (1991); Sharma and Dhakal (1994); Khalifa Al-Youssif (1997); Shan and Sun (1988); Biswal and Dawan (1988); Islam (1998); Glasure and Lee (1999); Ekanayake (1999); and the surveys by Edwards (1993) and Giles and Williams (2000)), which employed various different methodologies, tend to support Helpman and Krugman's view. In one of the most recent empirical studies, Jin (2002) examines the export-led growth hypothesis at the provincial level in the framework of a two- and four-variable autoregressive model, using data on the four largest Korean provinces. Both bivariate and multivariate models are generally supportive of the existence of a Granger causal ordering from exports to growth, although a feedback effect in the opposite (from growth to exports) direction is also apparent.

This body of research, most of which focused on fast-growing Asian developing countries, shows that exports can indeed be shown to act as an engine of growth in many cases, but a feedback relationship between growth and exports also tends to hold. However, in other cases, the pattern of causality, or even the existence of a robust link between exports and growth, could not be demonstrated. The relationship between exports and growth appears to be particularly weak in the studies focusing on countries which, as opposed to the extensively researched Asian NICs, did not manage to overcome the intersectoral disarticulation and the structural lack of economic homogeneity, which are typical marks of underdevelopment. This is the case, for instance, of Richards (2001). The author tested the ELG hypothesis for the case of Paraguay over the 1966-1996 period, using several time series methods, such as the Granger causality test, error correction modeling, and vector autoregression. His conclusion does not support the ELG hypothesis: "…there does not appear to be econometric evidence that Paraguayan export activity is characterized by a dynamic that is transferred to other sectors of the economy in the manner often ascribed to export production for other less developed countries, such as the Asian NICs. This finding has important implications for the study of the linkage between exports and economic growth generally speaking…" (p. 143). Also Catao (1998) failed to confirm the validity of the ELG hypothesis for the case of Mexico under the Porfirio Diaz regime (1877–1911).

Methodological Issues

The brief review in the preceding sub-section confirms that the reciprocal interrelations among exports and GDP growth, and also the relative weight to be accorded to either of the two main causal linkages (from exports to GDP, or the opposite way round) are a matter of considerable dispute in theory, and can only be exhaustively explored empirically in the framework of a comprehensive analysis of each specific national economy, with the help of a properly constructed econometric model.

In this paper, no such model-based analysis is attempted. Our approach is consistent with "the researcher's view," suggested by Mela and Kopalle (2002), as opposed to the "alternative view" which assumes the "existence of a known linear additive relationship that is indeed the true

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[42] The story of the ELG hypothesis bears some resemblance to that of the "openness" story. In the latter case, attempts to "demonstrate" econometrically in a simplified fashion that one single factor, the "openness" of trade policies, could explain most of the variability in GDP growth performance among developing countries, have been shown to fail to pass a rigorous econometric scrutiny (Rodriguez and Rodrik 1999). Similar difficulties are the symptom of a deeper epistemological fallacy, common to all analytical approaches which aim to explain complex and diverse social and economic phenomena by means of a standardized and reductionist formal model.

[43] Many of these studies did not deal satisfactorily with the two crucial methodological problems raised by Sheehey (Richards 2001).

underlying process that generates the y" (p.670). According to Mela and Kopalle, "While the researcher may or may not control the X (observations of independent variables), the true process by which the corresponding observations of the dependent variable, y, are generated is unknown to the researcher. Thus, the researcher hypothesizes a linear additive model as a paramorphic representation of the process that generates the y…In this view, the parameters including σ2 are determined by the data" (p.670). Consistently with these caveats, the results of the following econometric exercise are to be seen in the framework of a correlation analysis, rather than as the testing of a regression model proper. Therefore, taking into account that in real-world economies the export/growth linkage is complex and includes, among other things, feedback effects, our goal is not to prove the existence of a causal relationship between services exports and GDP growth (in fact, there are no *a priori* theoretical reasons to deny it). Rather, comparing in a relative fashion the estimates of their reciprocal correlation parameters, we try to shed some light on the magnitude and relevance of the services exports/GDP growth "nexus" in different groups of countries and different time periods.

In other words, exports, and services exports in particular, are seen as an "engine for growth" only in a very broad and far from exhaustive sense. The existence of a causal linkage from growth of services exports (as a component of total exports) to GDP growth is assumed *ex ante* and, in fact, is not falsified *ex post* by the results. However, the latter only synthesize statistically the product of a myriad of complex macroeconomic interactions, some of which are likely to be causal linkages running in the opposite direction, from GDP growth to export expansion. This statistical exercise, therefore, can only contribute to estimate empirically the magnitude of the above-mentioned statistical relationship between growth of services exports and GDP respectively, and to explore its variations, if any, across the various groups of countries analyzed over different periods.

Finally, we refer to the issue of collinearity, which affects the second group of equations, in which merchandise exports are added to the right side as an additional explanatory variable. The consequences of collinearity depend essentially on two factors: (1) whether the "true" model is known, and the correspondent variables are available; (2) whether the regression analysis is predicated upon a sample or upon the entire population (Mela and Kopalle 2002). With respect to the first factor, in the present analysis the imperfect specification of the underlying model[44] is taken for granted. Thus, collinearity is bound to generate a variable omission bias and (possibly) an inclusion of irrelevant variable bias.[45] However, Mela and Kopalle (2002) also show that, in regressions where all correlation coefficients between the dependent and the independent variables are positive (which is the case in our analysis), "negative correlations among the independent variables have a much greater impact on variable omission bias than equivalent positive correlations" (p.675). As collinearity between the growth rates of services exports and those of merchandise exports is always positive, the bias in the estimated parameters and the deterioration in the overall fit of the regressions which might be assumed to have been caused by the variable omission problem is relatively less important than it would be otherwise. With respect to the second factor affecting the potential bias implied by collinearity, it should not apply to the present analysis, as the latter is predicated virtually upon the entire population (all countries in the world for which data are available). Therefore, the estimates of the parameter variance are expected to be substantially correct.

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[44] Consistently with the "researcher's view" mentioned above, in fact, the regressions are not based on a "model" in the proper sense of the word, but only in the sense of a simplified statistical specification of the linear exports/GDP linkage.

[45] "Following Johnston (1984, p. 260), it is noted that the effect of omitting j relevant variables …biases the parameter estimates for the remaining P-j variables" (Mela and Kopalle 2002, pp.699–670).

DATA AND VARIABLES

Taking into account the significant limitations still affecting both the availability and the reliability of data on services exports (see Section 1), a group of 114 countries (all those for which WTO data on services exports were available for the year 2000) was selected to constitute the basic sample group. The basic sample group was further divided into six sub-groups: Developed countries (DVD, countries 1–24); Latin America (LA, countries 25–45); Africa (AFRICA, countries 46–66); Near East and Mediterranean (NEMED, countries 67–76); East Asia and Pacific (EAPAC, countries 77–95); Transition countries (TRANS, countries 96–114)[46].

The analysis covers the 1980s and the 1990s, focusing first on the whole 1980-2000 period and then on each of the two decade-long periods 1980–1990 and 1990–2000. Coefficient estimates are expected to be less than fully precise, as they are influenced, among other things, by the scale effect caused by outliers[47].

For each period (sub-period) the growth rate of GDP (GRGDP) was taken as the dependent variable. On the right end side, the growth rate of services exports (GREXPSERV) and the growth rate of merchandise exports (GREXPGOODS) are taken as the core explanatory variables. As the core explanatory variables are expressed in growth rate terms, the coefficients of GREXPSERV and GREXPGOODS can be broadly interpreted as proxies for the elasticity of GDP with respect to the exports of services and goods.

In order to control for the robustness of the results, the impact on growth of two other sets of variables, along with the two core ones, was also investigated[48]. The first set was constituted by standard economic, social, and demographic variables which are believed in theory to likely have an impact on GDP growth. In the framework of the present statistical approach, only two of these variables turned out to be significant[49]: the investment ratio, proxied by the average gross fixed capital formation ratio over each period (GFKF), and the initial per capita GDP in log form.[50] The second set

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[46] As consistent data for the TRANS sub-group are only available for a few countries and not for all years, these 18 countries were in fact excluded from all but three of the models.

[47] Distortions are stronger for countries that experience disturbances, turmoil and less stability, and therefore they are likely to affect more severely parameter estimates for developing rather than for developed countries. Most outliers, in fact, are small developing countries exhibiting exceptionally high or low growth rates of either exports or (less frequently) GDP, due to country- and period-specific causes different from the underlying structural export/growth nexus.

[48] Consistently with the caveats exposed in Sub-section 3.3., the inclusion of these control variables is not to be seen as an attempt to build a comprehensive model capable of explaining fully the diverse countries' growth performances.

[49] Besides GFKF and LOGGDPPC, the following explanatory variables were tried (either in levels or in log form), but turned out to be either unavailable for a sufficient number of countries or not significant: primary, secondary and tertiary school enrolment rate (total and female, gross and net); illiteracy rate (total and female); population density (initial, 1980); population total (initial, 1980); population growth (average, 1980-2000); debt service ratio (debt service as a percentage of exports, average 1980-2000); share of services in GDP (initial, 1980). Many of these variables have been utilized in other studies in the framework of previous empirical exercises (see, for instance, Barro 1997), producing varying results according to the specific analytical framework in which they were carried out.

[50] GDPPC80, in particular, exhibits a strong negative (and thus theory-consistent) coefficient. The magnitude of the convergence effect (ie, the often-assumed tendency for growth to be faster in poorer countries), however, should not be over-emphasized, due mainly to two reasons. First, owing to high population growth in most developing countries, a faster growth of total GDP in poorer than in richer countries does not necessarily translate into a closing up of the GDP per capita gap (not measured in the present model). Second, as mentioned below in the main text, once regional dummies are added to the regression, the convergence effect loses significance, suggesting it was essentially confined to the strong performance of only one developing region, Asia.

of variables was formed by the six regional dummies (DVD; LA; AFRICA; NEMED; EAPAC; TRANS) and by the dummy DNC for all developing countries (countries 25–95)[51].

RESULTS

The first series of regressions was run on all sample countries over the entire 1980–2000 period. Its main goal was to verify the existence of a broad statistical relationship between the growth rates of services exports and GDP, and to explore how it was influenced by the inclusion of other explanatory variables, such as the growth rates of merchandise exports and other control variables.

The first regression was a trial one, with the rate of growth of GDP (GDP8000) as the dependent variable, and the rate of growth of services exports as the only explanatory variable (Table 12, Model 1)[52]. The regression is significant, but the R2 is low (0.21), and the coefficient of EXPSERV8000 (0.2) is likely to be spuriously high as it captures to a large extent the impact of the missing variable "rate of growth of merchandise exports". In fact, when the latter (EXPGOODS8000)[53] was added to the right end side, both variables turned out to be significant, and R2 rose to 0.5. Moreover, the coefficient of EXPSERV8000 fell to 0.12, about half the coefficient for the rate of growth of merchandise exports (EXPGOODS8000) (Table 12, Model 2). This result shows that, besides the previously mentioned issue of collinearity, the new variable is "dominant" with respect to the first one. This indicates that, in spite of the rise of services, the impact on GDP of merchandise exports still tends to be more relevant.[54]

Adding the investment ratio GFKF8000 and the log of the initial per capita income LOGGDPPC80, the coefficients of both EXPSERV8000 and EXPGOODS8000 changed little, showing them to be robust with respect to the introduction of the new variables. R2 increased moderately (Table 12, Model 3).

The next step was the introduction on the right hand side of 5 of the 6 regional dummies[55] (Table 12, Model 4). As expected, the impact of the regional variables was strong, showing that region-specific factors tended to make growth quite high in Asia, and lower in the developed countries and Latin America, with Africa, the Near East and the Mediterranean countries in an intermediate position. It also had the effect of rendering LOGGDPPC80 insignificant (as was to be expected), as well as of lowering the coefficient of EXPGOODS8000, and of changing the sign of the intercept. The coefficient of EXPSERV8000 was virtually unchanged with respect to the previous model. R2 rose up to 0.77. These results can be interpreted as follows. Region-specific factors (stemming particularly from Asia) were largely responsible for the income convergence effect evidenced by Model 3, and also contributed in rendering the elasticity of GDP growth with respect to the growth of merchandise exports uneven across the various world regions. The elasticity of GDP growth with respect to the growth of services exports, on the contrary, appears to have been similar in all the regions.

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[51] Dummy variables' values are 1 for the countries belonging to each group and 0 for all the other countries.

[52] As all the models have a cross-country structure, this regression, like all the others, was run using the White heteroskedasticity-consistent correction technique.

[53] The correlation coefficients between the GREXSERV and GREXGOODS are high: 0.47 for 1980–2000, 0.49 for 1980–1990, and 0.41 for 1990–2000. This finding confirms the existence of positive collinearity between the growth rates of services and merchandise exports. Yet, the results of this exercise, with all the caveats referred to above, can be interpreted as basically correct according to the Mela and Kopalle's (2002) argument briefly exposed in Sub-section 3.3.

[54] In order to check this proposition, control regressions were run substituting GRGOODS to GRSERV as the only explanatory variable. For all sub-periods and groups of countries, coefficients and T statistics were much higher than in the regressions where GREXSERV was the only explanatory variable.

[55] The dummy variable TRANS was excluded because 1980–2000 data on most transition countries were not available. Consistently, c was kept in the model.

Other regressions were run to investigate the differences in the aforementioned structural relations between developed countries and the whole group of developing countries taken as a whole. When added to the base model, the intercept dummy variable, DNC, turned out to be significant, with a coefficient close to unity, confirming the accepted wisdom that in the long run developing countries tend to grew on average faster than developed countries. The growth rates of both exports components and the investment ratio, however, proved robust, and did not lose their significance (Table 12, Model 5).

In the following exercise, four slope dummy variables were constructed, multiplying each of the explanatory variables by the intercept dummy DNC, and added to the base model. In the new 8-variables control regression, Wald tests carried out on the sum of the original and the slope dummy variables' coefficients showed that those constructed from the first three explanatory variables were significant[56]. On the contrary, only EXPGOODS8000 maintained a high level of significance among the original explanatory variables. Among the slope dummies, the coefficient of DNC*GFKF8000 was positive and significant at the 10 per cent level, that of DNC*GOODS8000 was negative but not significant, and those of DNC*EXPSERV8000 and DNC*LOGGDPC80 were positive and not significant (Table 12, Model 6). These findings suggest that the linkage between services exports and growth and (more clearly) the role of accumulation in the growth process were stronger for developing than for developed countries.

The results of the "very long term" 1980–2000 models suggest that the relation between GDP growth, on the one hand, and the growth of merchandise and services exports, on the other, is significant and robust, and that the export elasticity of GDP is much higher in the case of goods than in that of services. The investment rate and the initial per capita income are also significant in explaining growth performances. The application of dummy variables techniques, along with the weight of region-specific factors, shows that the structural linkages between growth and the explanatory variables were different, to some extent, in developed and developing countries respectively.

Another set of regressions was run over the two shorter 1980-1990 and 1990-2000 periods, in order to explore the changes – if any – in the GDP/exports nexus from one decade to the other[57]. For the 1980s, the first to be tested was the base set of explanatory variables used in Model 3: the growth rates of services and merchandise exports, the average investment ratio, and the log of the initial of per capita GDP level. The results were similar to those relative to the longer 1980-2000 period, but showed higher values for F, R2, and the coefficients of GFKF and LOGGDPPC, and slightly lower values for those of EXPSERV and EXPGOODS (Table 13, Model 7). Adding the regional dummies to the right hand side (Table 13, Model 8), the log of the initial of per capita GDP level lost its significance, and the coefficient of EXPGOODS decreased (as they did in Model 4). Regional dummies' coefficients, however, were not significant. The slope dummy model and the Wald tests showed that all the four explanatory variables were significant in the case of developing countries, but only EXPGOODS was significant[58] in the case of developed countries. They also showed that the elasticity of GDP growth with respect to EXPSERV, EXPGOODS, GFKF and LOGGDPPC was higher in developing than in developed countries, although not significantly so (Table 13, Model 9). These results were controlled, running two separate regressions on the group of 24 developed countries, on the one hand, and on that of 71 developing countries, on the other hand. The first regression failed to produce any significant result, while the second one showed that all the four

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[56] At the 5 per cent confidence level.
[57] Initially, trial regressions were also run for the short 5-year sub-periods 1990-1995 and 1995-2000. However, they did not produce significant and consistent results, due most likely to the very shortness of the sub-periods analyzed. Therefore, their findings are not presented in the main text of the paper.
[58] At the 10% level.

explanatory variables were quite significant for the developing countries' group[59] (Table 13, Models 10, 11).

These somewhat surprising findings show that during the 1980s, only for developing countries did the theory-consistent structural linkages between exports, accumulation, and initial per capita income hold in a strong and robust fashion. GDP growth in developed countries, on the contrary, was not structurally related to these factors in a statistically significant way. They also imply that the growth-enhancing role of capital accumulation and the magnitude of the catching-up process on the part of poorer countries as a whole were more relevant in that decade than (on average) during the longer 1980-2000 period.

Turning to the 1990–2000 period, only the growth rate of merchandise exports and the initial per capita income maintained their significance in the base model, with coefficients lower than in the previous decade. The growth rate of services exports and the investment rate turned out to be not significant (Table 14, Model 12). The fit and the explanatory power of the regression, as shown by the values of the F-statistic and of the R2, were also lower than in the previous models. These differences were due in part to the fact that – thanks to the availability of data – statistical information on a higher number of transition countries was included in the 1990–2000 sample: a control regression run for the 95 non-transition countries also produced low F and R2 values and a not significant GFKF coefficients, but the growth rate of services exports turned out to be significant at the 10 per cent level (Table 14, Model 13).

Adding the regional dummies, all explanatory variables lost significance. The TRANS variable, as expected, was negative, while all other dummies were positive. Three of them (LA, ASIA, and NEMED) were also significant at the 5 per cent level, showing that in the 1990s region-specific factors had a higher impact on growth than before (Table 3, Model 14). The results of the slope dummies model were at variance with those of the corresponding model relative to the previous decade. The Wald tests showed that not one of the explanatory variables' coefficients was significant in the case of developing countries. Conversely, the coefficients of EXPSERV, EXPGOODS, and GFKF were significant in the case of developed countries. The latter, oddly, had the wrong sign. The GDP growth elasticities with respect to both services and merchandise exports were lower in developing than in developed countries, while the elasticity with respect to the investment ratio was higher. For EXPGOODS and GFKF, moreover, the differences in coefficients between developed and developing countries were large, to the point of being statistically significant at the 5 per cent level. As in the case of the 1980-1990 models, these findings were controlled, running separate regressions on the two groups of developed and developing countries, respectively. The coefficients for EXPSERV and EXPGOODS were high and significant in the developed countries regression, low and not significant in the developing countries regression (Table 14, Models 16,17).

MAIN FINDINGS

The results of the 1990-2000 models can be summarized as follows. In the 1990s, services exports became a very significant factor[60] in the growth performances of the developed countries.[61] Conversely, in developing countries, the relationship between both services and merchandise exports, on one hand, and growth, on the other hand, lost statistical significance. Contrary to the 1980-1990 period, the elasticities of GDP with respect to the growth of both export components were higher in developed than in developing countries. These trends were particularly dramatic for the merchandise

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[59] As opposed to Model 7, the latter two models explore the variables' variations from the mean separately between each of the two sub-samples of countries, respectively. Therefore, the results of the two approaches, while pointing towards the same direction, are not statistically equivalent.

[60] See, in particular, the high value of R2 in Model 16.

[61] On the contrary, fixed capital accumulation appears to have played a marginal, if not perverse, role in the growth process of developed countries during the 1990s. This apparent statistical curiosum is due largely to the Japanese stagnation, but it might as well reflect to some extent the increased weight of technological and financial factors.

component of exports but affected services exports as well. In sum, the exports/GDP nexus became stronger in the developed countries but weaker in the developing countries.[62]

These findings indicate that for developed countries, only during the last decade did the growth of services exports – spurred, in particular, by the fast development of information-technology intensive services – begin showing a strong and increasing impact on overall GDP growth. This is consistent with the ever more crucial role played by the services sectors in the developed economies, with services' growing articulation and reciprocal inter-relation with the other productive sectors, as well as with services' increasingly traded nature. The picture is quite different in the case of developing countries. The role of services exports as a GDP growth engine was recognizable in the developing world already in the 1980s – albeit less clearly than that of merchandise exports – but in the following decade it appeared to vanish. Moreover, in the developing countries, the overall trade/growth nexus, which had been quite strong in the 1980s, was severely weakened over the 1990s. This breach was largely due to the disruptions caused by the international financial crisis of the late 1990s, which were particularly concentrated on a small cluster of very dynamic developing economies.

Therefore, contrary to the case of developed countries, the dynamics of services exports contributed relatively less to overall economic growth in the developing regions in the globalizing and liberalizing 1990s than during the previous decade. Such a diverging evolution of the services exports/GDP nexus between developed and developing countries is likely to be attributable mainly to structural factors. Broadly speaking, developed and developing countries do not export the same kinds of services. Developed countries have been experiencing a boom in advanced, technology- and skill-intensive services sectors, which are still non-existent or embryonic in most developing countries (with some important exceptions, i.e. India; see Arora, 1999; ILO, 2001; Teltscher 2002). Conversely, services exports in developing countries tend to stem mainly from the least advanced and less dynamic services sub-sectors. These sub-sectors are also characterized by a high level of external dependence (in terms of ownership, management, technology, finance, and trade[63]) and, in a parallel fashion, by the relative underdevelopment of their forward and backward linkages with the rest of the domestic economy.

The weight of these structural weaknesses of the services sector in developing countries, moreover, is likely to have been magnified by the tendency towards laissez faire, and trade and financial liberalization that prevailed in both the domestic and the international policy environments during most of the decade of the 1990s. Responding to the intellectual stimuli stemming from the Washington consensus, and to the more concrete pressure stemming from Washington-based international financial institutions, governments in many developing countries scrambled to spur exports growth, often sacrificing other legitimate policy goals. As Easterly (2001) has shown, the trade ratio (a basic openness indicator) in most developing countries increased substantially up to 1997,[64] although it subsequently dropped under the impact of the East Asian crisis. With the benefit from insight, it is arguable that the priority accorded to export expansion often went beyond what would had been advisable, as the pay-off in terms of GDP growth was in fact disappointing.[65]

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[62] Indicative results from trial regressions run over the 1990–1995 and 1995–2000 sub-periods (see Note 35), along with the statistical evidence presented in Section 2, suggest that the changes took place mainly in the second part of the 1990s.

[63] *Ceteris paribus*, the least each dollar worth of services (or merchandise) exports contributes to relieve the external constraint (i.e., the lower its positive contribution to the current account balance, net of the imports needed to generate it in the first place), the lower is likely to be its positive impact on the growth of the economy as a whole.

[64] Easterly (2001) shows that the median Export/GDP ratio in developing countries increased strongly from the late 1980s up to 1997, and fell afterwards (Fig. 6c, p. 35).

[65] Median per capita growth in developing countries during the 1980-1998 period was 0.0 percent (Easterly 2001, p. 3).

CONCLUSIONS

During the last two decades of the 20th Century, the share of the developing countries in total world services exports increased progressively, reaching almost 1/4 of the world total in 2000. However, developing countries did not escape from a generalized slow-down in international trade in services. The growth rate of services exports from developing countries halved in 1995-2000 with respect to first half of the decade, largely due to the impact of the Asian crisis. Developing countries' ability to import services also declined sharply, with serious consequences to their overall economic performances.

Most of the main exporters in each of the services sub-sectors among developing and transition countries belong to two groups. One is constituted by large semi-industrialized Asian countries, which have exhibited a strong overall growth and export performance over the last two decades. The other is formed by countries in Eastern Europe which have, in spite of the severe crisis they have been through, maintained a relatively high level of industrial and technological development. Yet, there are also cases of other developing countries which show a strong tendency to specialize in one or few specific services sub-sectors.

Correlation analysis in Section 4 shows that services exports do have a positive impact on GDP growth in developing countries. This impact, as in the case of developed countries, becomes more recognizable and statistically significant in the long, rather than in the short, run. Yet, for developing countries, the services exports/GDP growth nexus is weaker than in the case of developed countries. Moreover, in most developing regions the growth-enhancing impact of exports as a whole appears to have declined in the 1990s, although this decline appears to be due more to the merchandise component of exports rather than to the services component. A tentative explanation for these results is as follows. Export-oriented services activities in most developing countries are poorly integrated to the rest of the domestic economy, besides being often under the control of foreign economic agents. The modalities and sequencing of trade and financial liberalization policies were sub-optimally designed and implemented, due both to domestic and external factors and constraints, among them the fact that the reforms were often carried out under conditions of duress and financial starvation. Domestic resources were diverted toward exports as a goal per se, rather than in the framework of a comprehensive long-term growth-maximizing strategy. As a result, the opening-up reform process in many previously inward-oriented developing countries has been facing diminishing returns.

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Annex

Table 1a. TOTAL EXPORTS OF SERVICES

COUNTRY/GROUP	Services Exports Flow*				Growth Rates			
	1980	1990	1995	2000	1980-90	1990-2000	1990-95	1995-2000
World	**336 855**	**780 408**	**1 168 717**	**1 427 632**	**8.8**	**6.2**	**8.47**	**4.1**
Developed countries	276 234	623 379	864 037	1 033 042	8.5	5.2	6.7	3.6
Developing countries	56 319	147 111	260 813	346 827	10.1	9.0	12.1	5.9
Developing countries: America	17 114	29 043	42 906	56 773	5.4	6.9	8.1	5.8
Developing countries: Africa	9 474	15 101	20 960	29 144	4.8	6.8	6.8	6.8
Developing countries: Asia	24 501	95 170	190 435	252 732	14.5	10.3	14.9	5.8
Developing countries: Oceania	247	702	1 014	917	11.0	2.7	7.6	-2.0
Developing countries: Europe	4 982	7 095	5 497	7 260	3.6	0.2	-5.0	5.7
Major petroleum exporters	10 894	14 691	16 629	32 980	3.0	8.4	2.5	14.7
Major exporters of manufactures	20 315	89 136	183 236	234 381	15.9	10.2	15.5	5.0
High income countries	23 182	72 619	137 574	176 840	12.1	9.3	13.6	5.1
Middle income countries	20 073	50 314	88 049	110 373	9.6	8.2	11.8	4.6
Low income countries	8 523	17 804	35 190	59 615	7.6	12.8	14.6	11.1
Least developed countries	2 160	3 038	5 143	5 728	3.5	6.5	11.1	2.2
Heavily indebted poor countries	3 428	4 248	5 674	7 143	2.2	5.3	6.0	4.7
Land-locked countries	1 006	1 952	3 841	6 246	6.9	12.3	14.5	10.2

*In US$ millions

Table 1a. TOTAL EXPORTS OF SERVICES (continued)

COUNTRY/GROUP	Share of World Trade (%)				Percentage of Total Trade			
	1980	1990	1995	2000	1980	1990	1995	2000
World	—	—	—	—	14.2	18.2	18.5	18.4
Developed countries	0.82	0.798	0.739	0.724	17.6	20.0	19.7	20.4
Developing countries	0.167	0.189	0.223	0.24	8.8	15.0	15.5	14.6
Developing countries: America	0.051	0.037	0.037	0.04	13.3	16.7	16.0	14.2
Developing countries: Africa	0.028	0.019	0.018	0.02	9.2	15.6	20.4	20.5
Developing countries: Asia	0.073	0.122	0.163	0.18	6.3	13.9	14.8	14.0
Developing countries: Oceania	0.001	0.001	0.001	0.00	9.7	20.0	17.9	19.0
Developing countries: Europe	0.015	0.009	0.005	0.01	34.5	31.5	23.7	26.8
Major petroleum exporters	0.032	0.019	0.014	0.02	3.4	6.4	6.6	7.6
Major exporters of manufactures	0.060	0.114	0.157	0.16	10.7	15.3	15.4	14.3
High income countries	0.069	0.093	0.118	0.12	6.6	13.5	14.2	13.9
Middle income countries	0.060	0.064	0.075	0.08	11.1	18.4	20.3	16.8
Low income countries	0.025	0.023	0.030	0.04	9.5	11.9	12.4	13.2
Least developed countries	0.006	0.004	0.004	0.00	12.9	15.6	19.0	15.4
Heavily indebted poor countries	0.010	0.005	0.005	0.01	12.7	13.9	13.8	11.9
Land-locked countries	0.003	0.003	0.003	0.00	10.7	15.4	13.3	16.5

Table 1b. TOTAL IMPORTS OF SERVICES

COUNTRY/GROUP	Imports Services Flows*				Growth Rates				Share (%) of World Total			
	1980	1990	1995	2000	1980-90	1990-2000	1990-95	1995-2000	1980	1990	1995	2000
World	367 000	812 230	1 178 524	1 382 941	8.2	5.4	7.7	3.2	—	—	—	—
Developed countries	264 789	619 525	839 372	961 534	8.9	4.5	6.3	2.8	0.721	0.762	0.712	0.695
Developing countries	98 577	183 759	295 682	374 045	6.4	7.4	10.0	4.8	0.269	0.226	0.251	0.270
America	28 256	34 336	53 744	68 588	2.0	7.2	9.4	5.0	0.077	0.042	0.046	0.050
Africa	22 051	22 120	28 683	30 783	0.0	3.4	5.3	1.4	0.060	0.027	0.024	0.022
Asia	42 388	111 023	208 545	268 803	10.1	9.2	13.4	5.2	0.115	0.137	0.177	0.194
Oceania	438	769	1 133	1 372	5.8	6.0	8.1	3.9	0.001	0.001	0.001	0.001
Europe	5 445	15 511	3 577	4 499	11.0	-11.6	-25.4	4.7	0.015	0.019	0.003	0.003
Major petroleum exporters	40 114	44 914	50 446	59 700	1.1	2.9	2.4	3.4	0.109	0.055	0.043	0.043
Major exporters of manufactures	25 988	87 222	185 212	241 509	12.9	10.7	16.3	5.5	0.071	0.107	0.157	0.175
High income countries	42 067	84 859	149 149	194 204	7.3	8.6	11.9	5.4	0.115	0.104	0.127	0.140
Middle income countries	33 283	57 414	88 873	102 706	5.6	6.0	9.1	2.9	0.091	0.071	0.075	0.074
Low income countries	18 016	26 474	57 660	77 135	3.9	11.3	16.8	6.0	0.049	0.033	0.049	0.056
Least developed countries	5 398	7 986	10 802	12 949	4.0	5.0	6.2	3.7	0.015	0.010	0.009	0.009
Heavily indebted poor countries	8 284	11 576	12 934	14 641	3.4	2.4	2.2	2.5	0.023	0.014	0.011	0.011
Land-locked countries	3 289	4 548	6 783	8 907	3.3	7.0	8.3	5.6	0.009	0.006	0.006	0.006

*In US$ millions.

Table 1c. BALANCE OF TRADE IN SERVICES (in US$ Millions)

COUNTRY/GROUP	1980	1990	1995	2000
World	-30 145.6	-31 821.3	-9 806.86	44 690.41
Developed countries	11 444	3 854	24 665	71 508
Developing countries	-42 258	-36 648	-34 869	-27 218
Americas	-11 141	-5 293	-10 838	-11 815
Africa	-12 577	-7 019	-7 723	-1 639
Asia	-17 886	-15 853	-18 110	-16 070
Oceania	-191	-67	-119	-455
Europe	5 449	-821	13 053	28 481
Major petroleum exporters	-19 799	44 222	132 790	174 682
Major exporters of manufactures	-2 806	-14 602	-47 638	-64 669
High income countries	-21 994	-34 545	-61 100	-83 832
Middle income countries	-24 760	-39 610	-53 683	-43 091
Low income countries	-15 857	-23 436	-52 517	-71 406
Least developed countries	-1 971	-3 738	-5 127	-5 805
Heavily indebted poor countries	-7 278	-9 624	-9 093	-8 394
Land-locked countries	-3 289	-4 548	-6 783	-8 907

Note: The sum of developed and developing countries' world shares of trade in services is slightly less than 1 because the trade data of a third, smaller country group (Countries in Eastern Europe) are reported separately in the UNCTAD database.

Table 2. EXPORTS OF TRANSPORT SERVICES

2a Total Exports

	Transport Services Exports Flows*				Growth Rates		
	1980	**1990**	**1995**	**1999**	**1980-90**	**1990-95**	**1995-1999**
DNC,TNC	18 315	32 210	58 779	62 762	5.8	12.8	1.7
WORLD	122 984	188 384	279 555	293 333	4.4	8.2	1.2

2b Major Exporters among Developing and Transition Countries**

	Transport Services Exports Flows*				Growth Rates		
Country	**1980**	**1990**	**1995**	**1999**	**1980-90**	**1990-95**	**1995-1999**
Argentina	805.0	1 156.0	930.0	953.0	3.7	-4.3	0.6
Brazil	813.0	1 348.0	2 600.0	1 141.0	5.2	14.0	-18.6
India	446.3	959.4	1 890.4	1 877.0	8.0	14.5	-0.2
Korea, Republic of	1 545.2	3 179.1	9 272.1	11 466.1	7.5	23.9	5.5
Kuwait	706.6	922.2	944.9	1 087.3	2.7	0.5	3.6
Malaysia	472.2	1 197.8	2 465.7	2 492.4	9.8	15.5	0.3
Mexico	445.0	892.0	1 164.4	1 343.0	7.2	5.5	3.6
Nigeria	911.3	37.2	99.7	117.9	-27.4	21.8	4.3
Poland	1 194.8	1 832.6	3 041.0	2 419.0	4.4	10.7	-5.6
Russian Federation	—	—	3 781.0	3 008.0	—	—	-5.6
Singapore	1 307.7	2 225.3	5 125.7	4 581.2	5.5	18.2	-2.8
Taiwan, Province of China	—	—	—	3 490.0	—	—	—
Thailand	299.0	1 327.0	2 454.6	3 016.9	16.1	13.1	5.3
Turkey	266.0	920.0	1 712.0	2 901.0	13.2	13.2	14.1
Ukraine	—	—	2 152.0	3 073.0	—	—	9.3
Yugoslavia (former)	1 354.0	1 985.0	—	—	3.9	—	—

*In US$ millions.
**Defined as countries with US$2 billion in travel services exports for at least one year.

Table 2. EXPORTS OF TRANSPORT SERVICES (continued)

Country	2c. Sector Share (%) of Total Services				2d. Country Share (%) of World Total		
	1980	1990	1995	1999	1980-90	1990-95	1995-1999
Argentina	43	47	25	21	0.6	0.3	0.3
Brazil	47	36	42	16	0.7	0.9	0.4
India	15	21	28	13	0.5	0.7	0.6
Korea, Republic of	60	33	41	43	1.7	3.3	3.9
Kuwait	58	72	67	64	0.5	0.3	0.4
Malaysia	42	31	21	21	0.6	0.9	0.9
Mexico	10	11	12	11	0.5	0.4	0.5
Nigeria	81	4	16	12	0.0	0.0	0.0
Poland	59	57	28	29	1.0	1.1	0.8
Russian Federation	27	17	17	19	1.2	1.8	1.6
Singapore	—	—	—	20	—	—	1.2
Taiwan, Province of China	20	21	16	21	0.7	0.9	1
Thailand	—	—	36	33	—	1.4	1.0
Turkey	37	11	12	18	0.5	0.6	1.0
Ukraine	—	—	76	79	—	0.8	1
Yugoslavia (former)	30	31	—	—	1.1	—	—

Table 3. EXPORTS OF TRAVEL SERVICES

3a Total Exports

	Travel Services Exports Flows*				Growth Rates		
	1980	**1990**	**1995**	**1999**	**1980-90**	**1990-95**	**1995-1999**
DNC, TNC	20 972	50 285	95 428	111 354	9.1	13.7	3.9
WORLD	95 280	248 697	381 569	423 105	10.1	8.9	2.6

3b Major Exporters among Developing and Transition Countries**

	Travel Services Exports Flows*				Growth Rates		
Country	**1980**	**1990**	**1995**	**1999**	**1980-90**	**1990-95**	**1995-1999**
Argentina	344	903	2 223	2 898	10.1	19.7	6.9
China	—	1 738	8 730	14 098	—	38.1	12.7
Croatia	—	—	1 349	2 493	—	—	16.6
Czech Republic	—	—	2 880	3 033	—	—	1.3
Dominican Republic	173	726	1 571	2 483	15.5	16.7	12.1
Egypt	593	1 100	2 684	3 903	6.4	19.5	9.8
Hungary	—	985	2 649	3 397	—	21.9	6.4
India	1 552	1 558	2 582	3 010	0.0	10.6	3.9
Indonesia	—	2 153	5 229	4 353	—	19.4	-4.5
Korea, Republic of	369	3 161	5 150	6 841	23.9	10.3	7.4
Malaysia	317	1 684	3 969	3 588	18.2	18.7	-2.5
Mexico	3 202	5 527	6 179	7 223	5.6	2.3	4.0
Philippines	320	466	1 136	2 553	3.8	19.5	22.4
Poland	240	358	2 306	3 173	4.1	45.1	8.3
Russian Federation	—	—	4 312	3 723	—	—	-3.6
Singapore	1 433	4 650	7 744	5 183	12.5	10.7	-9.6
Thailand	868	4 325	8 035	7 028	17.4	13.2	-3.3
Turkey	326	3 225	4 957	5 203	25.8	9.0	1.2

*In US$ millions
**Defined as countries with US$2 billion in travel services exports for at least one year.

Table 3. EXPORTS OF TRAVEL SERVICES (continued)

Country	3c. Sector Share (%) of Total Services				3d. Country Share (%) of World Total		
	1980	1990	1995	1999	1980-90	1990-95	1995-1999
Argentina	18.3	36.9	59.2	65.4	0.4	0.4	0.6
China	—	29.7	45.6	59.3	—	0.7	2.3
Croatia	—	—	55.0	67.0	—	—	0.4
Czech Republic	—	—	42.8	43.8	—	—	0.8
Dominican Republic	55.8	66.2	80.5	87.1	0.2	0.3	0.4
Egypt	24.8	18.4	31.2	41.1	0.6	0.4	0.7
Hungary	—	34.2	51.1	60.1	1.6	0.6	0.7
Korea, Republic of	14.4	32.8	22.6	25.8	0.4	1.3	1.4
Malaysia	28.0	43.6	34.2	30.1	0.3	0.7	1.0
Mexico	69.7	68.3	63.2	61.6	3.4	2.2	1.6
Philippines	22.1	14.4	12.2	53.2	0.3	0.2	0.3
Poland	11.9	11.2	21.6	37.5	0.3	0.1	0.6
Russian Federation	—	—	40.8	41.0	—	—	1.1
Singapore	29.5	36.3	26.0	21.9	1.5	1.9	2.0
Thailand	58.2	67.4	54.1	48.0	0.9	1.7	2.1
Turkey	45.9	40.2	33.9	31.7	0.3	1.3	1.3

Table 4. EXPORTS OF COMMUNICATION SERVICES

4a. Total Exports

4a. Total Exports	Communication Services Exports Flows*				Growth Rates		
	1980	1990	1995	1999	1980-90	1990-95	1995-1999
DNC, TNC	54	808	6 801	6 597	31.0	53.1	-0.8
WORLD	1 899	7 548	22 797	28 515	14.8	24.7	5.8

4b. Major Exporters among Developing and Transition Countries**

Country	Communication Services Exports Flows*				Growth Rates		
	1980	1990	1995	1999	1980-90	1990-95	1995-1999
Argentina	—	—	332.0	163.0	—	—	-16.3
China	—	159.0	755.7	590.0	—	36.6	-6.0
Korea, Republic of	30.9	394.6	560.7	400.2	29.0	7.3	-8.1
Mexico	—	—	860.0	1 168.0	—	—	8.0
Philippines	—	—	—	424.0	—	—	—
Poland	—	—	302.0	376.0	—	—	5.6
Russian Federation	—	—	482.0	465.0	—	—	-0.9
Taiwan, Province of China	—	—	—	501.0	—	—	—

Country	4c. Sector Share (%) of Total Services					4d. Country Share (%) of World Total			
	1980	1990	1995	1999	2000	1980	1990	1995	1999
Argentina	—	—	8.8	3.7	2.4	—	1.5	0.6	0.7
China	—	2.7	4.0	2.5	—	—	2.1	3.3	2.1
Mexico	—	—	8.8	10.0	—	—	3.8	4.1	—
Philippines	—	—	—	8.8	—	—	—	—	1.5
Poland	—	—	2.8	4.4	—	—	1.3	1.3	—
Russian Federation	—	—	4.6	5.1	4.0	—	2.1	1.6	2.5
Taiwan, Province of China	—	—	—	2.9	1.4	—	—	1.8	1.9

*In US$ millions
**Defined as countries with US$300 million in communication services exports for at least one year.

Table 5. EXPORTS OF CONSTRUCTION SERVICES

5a. Total Exports

	Construction Services Exports Flows*				Growth Rates		
	1980	1990	1995	1999	1980-90	1990-95	1995-1999
DNC, TNC	—	787	2665	3 566	—	27.6	7.6
WORLD	7 750.37	12 269.06	34 369.29	31 056.22	4.7	22.9	-2.5

5b. Major Exporters among Developing and Transition Countries**

	Construction Services Exports Flows*				Growth Rates		
Country	1980	1990	1995	1999	1980-90	1990-95	1995-1999
China	—	—	—	985	—	—	—
Czech Republic	—	—	57	233	—	—	42.3
Egypt	—	—	1	116	—	—	228.4
Russian Federation	—	—	103	126	—	—	5.2
Slovakia	—	—	109	62	—	—	-13.2
Taiwan, Province of China	—	—	—	165	—	—	—
Turkey	—	741	1 863	1 176	—	20.2	-10.9

	5c. Sector Share (%) of Total Services				5d. Country Share (%) of World Total			
Country	1980	1990	1995	1999	1980	1990	1995	1999
China	—	—	—	4.1	—	—	—	3.2
Czech Republic	—	—	0.8	3.4	—	—	0.2	0.7
Egypt	—	—	—	—	—	—	0.0	0.4
Russian Federation	—	—	1.0	1.4	—	—	0.3	0.4
Slovakia	—	—	4.6	3.3	—	—	0.3	0.2
Taiwan, Province of China	—	—	—	1.0	—	—	—	0.5
Turkey	—	9.2	12.8	7.2	—	6.0	5.4	3.8

*In US$ millions
**Defined as countries with over US$100 million in construction services exports for at least one year.

Table 6. EXPORTS OF COMPUTER AND INFORMATION SERVICES

6a. Total Exports	Computer and Information Services Exports Flows*				Growth Rates		
	1980	**1990**	**1995**	**1999**	**1980-90**	**1990-95**	**1995-1999**
DNC, TNC	0.4	8.95	152.47	849.19	36.5	76.3	53.6
WORLD	0.4	2 190.92	10 825.21	28 067.19	136.5	37.6	26.9

6b. Major Exporters among Developing and Transition Countries**

	Computer and Information Services Exports Flows*				Growth Rates		
Country	**1980**	**1990**	**1995**	**1999**	**1980-90**	**1990-95**	**1995-1999**
China	—	—	—	265	—	—	—
Czech Republic	—	—	5	65	—	—	89.0
Hungary	—	—	—	86	—	—	—
Slovenia	—	—	12	55	—	—	46.0
Taiwan, Province of China	—	—	—	39	—	—	—

	6c. Sector Share (%) of Total Services				6d. Country Share (%) of World Total			
Country	**1980**	**1990**	**1995**	**1999**	**1980**	**1990**	**1995**	**1999**
China	—	—	—	1.1	—	—	—	0.9
Czech Republic	—	—	0.8	3.4	—	—	0.2	0.7
Hungary	—	—	—	1.5	—	—	—	0.3
Slovenia	—	—	0.6	2.9	—	—	0.1	0.2
Taiwan, Province of China	—	—	0.2	0.6	—	—	—	0.1

*In US$ millions
**Defined as countries with over US$100 million in computer and information services exports for at least one year.

Table 7. EXPORTS OF FINANCIAL AND INSURANCE SERVICES

7a. Total Exports

	Financial and Insurance Services Exports Flows*				Growth Rates		
	1980	**1990**	**1995**	**1999**	**1980-90**	**1990-95**	**1995-1999**
DNC, TNC	1 592	2 234	6 539	7 360	3.4	24.0	3.0
WORLD	8 914	37 155	64 435	94 609	15.3	11.6	10.1

7b. Major Exporters among Developing and Transition Countries**

Country	Financial and Insurance Services Exports Flows*				Growth Rates of Exports		
	1980	**1990**	**1995**	**1999**	**1980-90**	**1990-95**	**1995-1999**
Brazil	137	115	1 013	469	-1.7	54.5	-17.5
China	—	227	1 852	370	—	52.2	-33.1
Korea, Republic of	49	5	85	526	-21.1	79.2	57.7
Mexico	466	335	641	1 072	-3.2	13.8	13.7
Poland	97	126	883	725	2.7	47.5	-4.8
Taiwan, Province of China	—	—	—	1 058	—	—	—

Country	7c. Sector Share (%) of Total Services				7d. Country Share (%) of World Total			
	1980	**1990**	**1995**	**1999**	**1980**	**1990**	**1995**	**1999**
Brazil	7.9	3.1	16.5	6.5	1.5	0.3	1.6	0.5
China	—	3.9	9.7	1.6	—	0.6	2.9	0.4
Korea, Republic of	1.9	0.0	0.4	2.0	0.6	0.0	0.1	0.6
Mexico	10.2	4.1	6.6	9.1	5.2	0.9	1.0	1.1
Poland	4.8	4.0	8.3	8.6	1.1	0.3	1.4	0.8
Taiwan, Province of China	—	—	—	6.1	—	—	—	1.1

*In US$ millions
**Defined as countries with over US$100 million in financial and insurance services exports for at least one year.

Table 8. EXPORTS OF OTHER BUSINESS SERVICES

8a. Total Exports

	Other Business Services Exports Flows*				Growth Rates		
	1980	**1990**	**1995**	**1999**	**1980-90**	**1990-95**	**1995-1999**
DNC, TNC	15 594	35 322	71 962	79 682	8.5	16.1	2.6
WORLD	89 127	183 639	277 652	309 193	7.5	9.1	2.7

8b. Major Exporters among Developing and Transition Countries**

Country	Other Business Services Exports Flows*				Growth Rates		
	1980	**1990**	**1995**	**1999**	**1980-90**	**1990-95**	**1995-1999**
India	826	1 967	2 120	8 788	9.1	1.5	42.7
Korea, Republic of	384	2 376	6 761	6 035	20.0	23.3	-2.8
Malaysia	250	885	5 004	5 719	13.5	41.4	3.4
Philippines	688	2 167	7 839	929	12.2	29.3	-41.3
Saudi Arabia	2 967	3 031	3 480	5 380	0.2	2.8	11.5
Singapore	1 980	5 756	16 500	13 361	11.3	23.4	-5.1
Taiwan, Province of China	—	—	—	8 052	—	—	—

Country	8c. Sector Share (%) of Total Services				8d. Country Share (%) of World Total		
	1980	**1990**	**1995**	**1999**	**1990**	**1995**	**1999**
India	27.8	42.5	31.3	60.8	1.1	0.8	2.8
Korea, Republic of	14.9	24.7	29.6	22.7	1.3	2.4	2.0
Malaysia	22.0	22.9	43.1	48.0	0.5	1.8	1.9
Philippines	47.5	66.8	83.9	19.3	1.2	2.8	0.3
Saudi Arabia	57.2	100.0	100.0	100.0	1.7	1.3	1.7
Singapore	40.8	44.9	55.3	56.4	3.1	5.9	4.3
Taiwan, Province of China	—	—	—	46.8	—	—	2.6

*In US$ millions
**Defined as countries with over US$5 billion in other business services exports for at least one year.

Table 9. EXPORTS OF ROYALTIES AND LICENSE FEES

9a. Total Exports

9a. Total Exports	Royalties and License Fees Exports Flows*				Growth Rates		
	1980	1990	1995	1999	1980-90	1990-95	1995-1999
DNC, TNC	78	313	752	1 601	14.9	19.1	20.8
WORLD	10 801	27 351	53 443	68 006	9.7	14.3	6.2

9b. Major Exporters among Developing and Transition Countries**

Country	Royalties and License Fees Exports Flows*				Growth Rates		
	1980	1990	1995	1999	1980-90	1990-95	1995-1999
Brazil	12	12	32	133	0.0	21.7	42.8
Korea, Republic of	23	37	299	455	4.8	51.8	11.1
Mexico	21	73	114	42	13.3	9.4	-22.2
Paraguay	—	76	140	189	—	12.9	7.8
Taiwan, Province of China	—	—	—	248	—	—	—

Country	9c. Sector Share (%) of Total Services					9d. Country Share (%) of World Total		
	1980	1990	1995	1999	2000	1990	1995	1999
Brazil	0.7	0.3	0.5	1.9	1.3	0.0	0.1	0.2
Korea, Republic of	0.9	0.4	1.3	1.7	-	0.1	0.6	0.7
Mexico	0.5	0.9	1.2	0.4	-	0.3	0.2	0.1
Paraguay	—	18.2	23.9	33.7	-	0.3	0.3	0.3
Taiwan, Province of China	—	—	—	1.4	1.8	—	—	0.4

*In US$ millions
**Defined as countries with over US$2 billion in other business services exports for at least one year.

Table 10. EXPORTS OF PERSONAL,CULTURAL AND RECREATIONAL SERVICES

10a. Total Exports	Personal, Cultural & Recreational Services Exports Flows*				Growth Rates		
	1980	1990	1995	1999	1980-90	1990-95	1995-1999
DNC, TNC	0	18	2 557	3 700	—	168.6	9.7
WORLD	100	3265	9 420	16 251	41.7	23.6	14.6

10b. Major Exporters among Developing and Transition Countries**

Country	Personal, Cultural & Recreational Services Exports Flows*				Growth Rates		
	1980	1990	1995	1999	1980-90	1990-95	1995-1999
Argentina	—	30	104	112	—	28.2	1.9
Czech Republic	—	74	244	—	—	26.9	—
Mexico	—	5	208	—	—	113.8	—
Turkey	—	2 282	2 615	2 589	—	2.8	-0.2

Country	10c. Sector Share (%) of Total Services				10d. Country Share (%) of World Total			
	1980	1990	1995	1999	1980	1990	1995	1999
Argentina	—	—	0.8	2.3	—	—	0.3	—
Czech Republic	—	—	1.1	3.5	—	—	0.8	0.6
Mexico	—	—	0.0	1.8	—	—	0.0	1.5
Turkey	—	—	15.6	15.9	—	—	24.2	1.3

*In US$ millions
**Defined as countries with over US$300 million in personal, cultural and creational services exports for at least one year.

Table 11. EXPORTS OF GOVERNMENT SERVICES

11a. Total Exports

	Government Services Exports Flows*					Growth Rates		
	1980	**1990**	**1995**	**1999**	**2000**	**1980-90**	**1990-95**	**1995-1999**
DNC, TNC	3 911	7 463	7 202	6 641		6.7	-0.7	-2.0
WORLD	30 252	45 264	46 033	42 314	27 423	4.1	0.3	-2.1

11b. Major Exporters among Developing and Transition Countries**

	Government Services Exports Flows*				Growth Rates		
Country	**1980**	**1990**	**1995**	**1999**	**1980-90**	**1990-95**	**1995-1999**
Brazil	65	56	130	316	-1.5	18.3	24.9
China	—	107	700	83	—	45.6	-41.3
Egypt	72	1 159	328	218	32.0	-22.3	-9.7
India	110	15	11	503	-17.9	-5.7	157.5
Korea, Republic of	168	482	694	763	11.1	7.6	2.4

	11c. Sector Share (%) of Total Services				11d. Country Share (%) of World Total			
Country	**1980**	**1990**	**1995**	**1999**	**1980**	**1990**	**1995**	**1999**
Brazil	3.7	1.5	2.1	4.4	0.2	0.1	0.3	0.7
China	—	1.8	3.7	0.3	—	0.2	1.5	0.2
Egypt	3.0	19.4	3.8	2.3	0.2	2.6	0.7	0.5
India	3.7	0.3	0.2	3.5	0.4	0.0	0.0	1.2
Korea, Republic of	6.5	5.0	3.0	2.9	0.6	1.1	1.5	1.8

*In US$ millions
**Defined as countries with over US$500 million in government services exports for at least one year.

Table 12. Results I
Period:1980–2000

Models	Explanatory Variables	Coefficient	t-Statistic	R-squared	F statistic
1	**114 countries**				
	EXPSERV8000	0.2	4.09**		
	c	1.76	5.68**		
				0.21	25.5
2	**114 countries**				
	EXPSERV8000	0.12	3.1**		
	EXPGOODS8000	0.25	5.96**		
	c	1.05	4.18**		
				0.5	44.9
3	**114 countries**				
	EXPSERV8000	0.1	2.3**		
	EXPGOODS8000	0.2	3.35**		
	GFKF8000	0.08	2.29**		
	LOGGDPPC80	-0.25	-2.83**		
	c	1.72	2.18**		
				0.56	22.7
4	**114 countries**				
	EXPSERV8000	0.11	2.86**		
	EXPGOODS8000	0.12	2.02**		
	GFKF8000	0.05	2.09**		
	LOGGDPPC8000	0.1	0.76		
	DVD	1.01	1.15		
	LA	1.39	1.68		
	AFRICA	2.44	3.13**		
	ASIA	3.69	3.77**		
	NEMED	2.6	3.16**		
	c	-1.91	-1.63		
				0.77	23.6
5	**114 countries**				
	EXPSERV8000	0.1	2.6**		
	EXPGOODS8000	0.17	3.4**		
	GFKF8000	0.08	3.35**		
	LOGGDPPC8000	-0.04	-0.3		
	DNC	0.99	2.43**		
	c	-0.55	-0.46		
				0.6	19.7

Table 12. Results I (continued)
Period:1980–2000

Models	Explanatory Variables	Coefficient	t-Statistic	R-squared	F statistic
6	**114 countries**				
	EXPSERV8000	0.08	1.14		
	EXPGOODS8000	0.22	2.31**		
	GFKF8000	-0.003	-0.09		
	LOGGDPPC8000	-0.33	-1.12		
	DNC*EXPSERV8000	0.02	0.26		
	DNC*EXPGOODS8000	-0.05	-0.43		
	DNC*GFKF8000	0.09	1.73*		
	DNC*LOGGDPPC80	0.3	0.9		
	DNC	-3.72	-1.33		
	c	3.97	1.55		
				0.6	10.6

*Significant at the10% level
**Significant at the 5% level

Table 13. Results II
Period:1980–1990

Models	Explanatory Variables	Coefficient	t-Statistic	R-squared	F statistic
	114 countries				
7	EXPSERV8090	0.08	2.12**		
	EXPGOODS8090	0.17	4.2**		
	GFKF8090	0.15	5.11**		
	LOGGDPPC80	-0.49	-5.35**		
	c	2.3	2.87**		
				0.65	33.2
	114 countries				
8	EXPSERV8090	0.08	2.17**		
	EXPGOODS8090	0.13	3.4**		
	GFKF8090	0.09	3.26**		
	LOGGDPPC80	-0.02	-0.12		
	DVD	-1.43	-1.2		
	LA	-1.58	-1.36		
	AFRICA	0.18	0.17		
	ASIA	1.35	1.17		
	NEMED	-0.94	-0.8		
	c	0.57	0.39		
				0.76	23.6
	114 countries				
9	EXPSERV8090	0.01	0.13		
	EXPGOODS8090	0.13	1.8*		
	GFKF8090	0.06	0.91		
	LOGGDPPC80	-0.19	-0.64		
	DNC*EXPSERV8090	0.08	0.89		
	DNC*EXPGOODS8090	0.04	0.48		
	DNC*GFKF8090	0.08	1.13		
	DNC*LOGGDPPC80	-0.25	-0.72		
	DNC	-0.15	-0.04		
	c	2.12	0.67		
				0.66	13.9
10	**DVD 1 24**				
	EXPSERV8090	0.01	0.12		
	EXPGOODS8090	0.13	1.68		
	GFKF8090	0.06	0.85		
	LOGGDPPC80	-0.19	-0.59		
	c	2.12	0.62		
				0.22	1.06(pr0.4)
	DNC 25 95				
11	EXPSERV8090	0.08	1.99*		
	EXPGOODS8090	0.18	3.58**		
	GFKF8090	0.14	4.22**		
	LOGGDPPC80	-0.44	-2.71**		
	c	1.98	1.8*		
				0.67	25.1

*Significant at the10% level
**Significant at the 5% level

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Table 14. Results III
Period:1990–2000

Models	Explanatory Variables	Coefficient	t-Statistic	R-squared	F statistic
	114 countries				
12	EXPSERV9000	0.06	1.25		
	EXPGOODS9000	0.15	2.7**		
	GFKF9099	0.06	1.38		
	LOGGDPPC90	-0.22	-2.22**		
	c	2.61	2.16		
				0.33	8.9
	DVD,DNC 1 95				
13	EXPSERV9000	0.09	1.75*		
	EXPGOODS9000	0.11	2.3*		
	GFKF9099	0.05	1.35		
	LOGGDPPC90	-0.25	-2.38**		
	c	3.07	2.62		
				0.38	10.5
	114 countries				
14	EXPSERV9000	0.07	1.26		
	EXPGOODS9000	0.07	1.39		
	GFKF9099	0.05	1.49		
	LOGGDPPC90	-0.16	-0.89		
	DVD	2.44	1.41		
	LA	2.98	2.14**		
	AFRICA	2.23	1.65		
	ASIA	4.27	2.93**		
	NEMED	4.23	2.7**		
	TRANS	-2.22	-1.55		
				0.57	9.7
	114 countries				
15	EXPSERV9000	0.13	2.33**		
	EXPGOODS9000	0.3	3.74**		
	GFKF9099	-0.08	-1.95*		
	LOGGDPPC90	-0.25	-0.93		
ns	DNC*EXPSERV9000	-0.04	-0.51		
ns		-0.21	-2.22**		
ns	DNC*GFKF8099	0.14	2.49**		
ns	DNC*LOGGDPPC90	7.56E-05	0.67		
	DNC	-1.23	-0.85		
	c	4.24	1.67		
				0.44	5.5
	DVD 1 24				
16	EXPSERV9000	0.14	2.6*		
	EXPGOODS9000	0.3	3.67**		
	GFKF9099	-0.09	-1.92**		
	LOGGDPPC90	-0.01	-0.043		
	c	2.04	0.3		
				0.8	16.5

Models	Explanatory Variables	Coefficient	t-Statistic	R-squared	F statistic
	DNC 25 95				
17	EXPSERV9000	0.08	1.4		
	EXPGOODS9000	0.09	1.6		
	GFKF9099	0.06	1.54		
	LOGGDPPC90	-0.07	-0.34		
	c	1.92	1.19		

*Significant at the10% level
**Significant at the 5% level