

Determinants of Exports in Developing Countries

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Abstract

This paper analyzes the determinants of exports in developing countries using panel data of 75 countries for the period 1970-2004. The analysis shows that GDP and GDP growth rates positively affect exports. The effect of FDI on exports is positive but insignificant. Thus the success of FDI led export growth in a few Asian countries cannot be generalized on all developing countries, because structural problems vary across the countries. It is also found that depreciation of real exchange results in increase in exports. The results further show that industrialization significantly promotes exports. The impact of communication facilities on exports also turns out to be significant with positive signs. Such facilities are helpful in exploration of and access to new markets.

I. Introduction

Returns from trade sector depend upon accelerating growth of exports. According to the orthodox classical economist, as well to the modern liberal economists the trade is equivalent to an engine of economic growth. Exports promotion strategy is often in accordance with the principle of comparative advantage, when a country specializes in a product, which it can produce competitively. The goods become available to the community of the world at cheaper prices. The markets are extended. The internal and external economies are attained. The income and employment levels expand. Consequently, the process of economic development is facilitated. In nutshell, putting more emphasis on the promotion of exports would permit the optimal allocation of world resources.

The FDI led exports growth is controversial in empirical literature. But the role of domestic investment is most important for export expansion strategies. The importance of FDI, however, does not diminish the role of production investment from the domestic economy. While private domestic investment can be regarded as a permanent and reliable channel to enhance production capacity, investment in public sector has been considered important, for example in roads, communication and other public goods and services that are essential to stimulate private investment. Further more, government has a decisive

role through support for research and contract with foreign buyers as well as in facilitating access to credit to both directly and indirectly exporting terms.

Funke and Holly (1992) argue that the majority of the previous approaches have emphasized demand factors. Such models have generally been rather unsuccessful in explaining long run trends in export performance.¹ They take into account both supply side and demand side factors and apply the model to the West German manufacturing sector. The study is based on quarterly data over the period 1961.1 to 1987.4. The findings of the study suggest that supply side factors are much important for explaining export performance than demand side factors.

Togan (1993) studies quantitatively the system of export incentives in Turkey. The export incentives are as follow, export credits, tax rebate scheme, premium from the “Support and Price Stabilization Fund”, duty free imports of intermediates and raw materials, and exemption from the value added tax, foreign exchange allocations, exemption from the corporate income tax and other subsidies.

The study investigates the changes in the structure of export incentives in Turkey from 1983 to 1990. The study finds that during the 1980s the level of the economy- wide subsidy rates and that of inter industry dispersion of incentives has substantially been lowered. The study also finds that the Turkish export- and import-competing industries have benefited from the export incentives more than the other sectors.

Riedel, Hall and Grawe (1984) investigate quantitatively the determinants of export performance in 1970s. They conduct a Time-Series analysis over the period 1968-1978. The study analyzes the effects of relative price of exports, relative domestic demand and domestic profitability on export performance. The dependent variable used was the ratio of indexes of constant price exports to industrial production. Exports were expressed as a ratio to output in order to account for the effect of expansion of production capacity.

The results support the view that domestic market conditions strongly influence export behavior. The variable measuring domestic profitability or relatively domestic demand proved statistically significant in explaining export behavior in 23 of 30 sectors.

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¹ See the debate between Landesman and Snell (1989) and Holly and Wade (1991), for example

Relative price, incorporating export policy incentives and the exchange rate proved statistically significant in only 10 of the 30 sectors.

However, relative prices tended to be significant in those sectors where comparative advantage is presumed to be strongest, for example, ready-made garments, carpet weaving, handicrafts and metal products. The study has the loophole of using short period. It requires a long period for better estimates.

Sharma (2001) investigate exports determinant in India using annual data for 1970-98. The study uses simultaneous equation framework. The results of study suggest that demand for Indian exports increase when its export price falls in relation to world prices. Furthermore, the real appreciation of the rupee adversely effects Indian exports. Exports supply is positively related to the domestic relative price of exports and higher domestic demand reduces export supply. Foreign investors appear to have statistically no significant impact on export performance although the coefficient of FDI has a positive sign.

Hoekman and Djankov (1998) analyze the magnitude of change in the export structure in Central and Eastern European countries. They investigate the relative importance of processing (subcontracting) trade, imports of input, and FDI as determinants of the countries' export performance in European Union markets. They undertake a statistical analysis of the extent to which these variables are associated with the countries' export composition during 1990-95.

The findings of the study suggest that in most countries export of intermediate goods and machinery drove the changes in export structure. Local enterprises apparently exploited the opportunity to acquire foreign inputs and know-how in order to improve production quality, thereby expanding their export market share in the European Union.

Indeed, FDI was concentrated in sectors where the Central and Eastern European countries do not have a revealed comparative advantage (that is, they are not relatively specialized in terms of their export share in Eastern Union markets): this is the cause for Bulgaria, the Czech Republic, and Hungary. Of the five countries for which data are available, Poland is the only one with a significant positive association between FDI and exports structure. This negative relationship implies that FDI could be a force for change. Foreign investors must perceive the industries concerned to be viable in the median term,

and over time this FDI may lead to greater changes in the countries' export composition. Thus FDI complements efforts by domestic industries to restructure and up grade production facilities.

As far as, studies on export determinants are concerned, such studies are usually based on country specific factors as export expansion schemes, subsidies etc. There is hardly any study that conducted panel data estimation on export determinants for a large number of developing countries.

The present study aims to find out the internal and external determinants of export promotion in a large set of developing countries. In this study we will follow panel data estimation procedure for 75 developing countries. The rest of the discussion is organized as follows: section II explains the model and framework of analysis: section III introduces the data set and the construction of variables. Section IV puts forward the main findings from empirical analysis. Section V presents a summary results which some policy implications.

II. Methodology

In this chapter, we formulate a framework of analysis to determine the effects of various factors on exports in developing countries, which we have taken in our sample. The underlying objective is to explain the rational behind exports.

In the export function we consider all those factors that play a meaningful role in the determination of exports in the developing countries. Exports are determined by both internal and external factors. Externally the role of exchange rate and FDI is worthwhile. While internally the role of industrialization and government export expansion policies are important.

Model

Thus we have a single-equation model:

$$EXP_{it} = g(FDI_{it}, Z_{it}, \dots, Z_m, \xi_{it}) \quad (2.1)$$

Where EXP_{it} represents the endogenous variables, exports, while Z_{it} are the vectors of exogenous variables. The subscript $I (=1, \dots, n)$ represents country and $t (= 1, \dots, T)$ period of time (years). Notice that the vector Z_{it} , would generally contain some overlapping variables.

Export promotion strategies have a great deal in trade liberalization regime. On one hand, as developing countries are facing twin deficits, namely, fiscal deficit and trade deficit. On the other hand, external debt crises create further financial problems. In such sorry state of financial crises, the sole inflow of FDI is not sufficient. But the expansion of export sector for the improvement of financial disturbance also needs to be addressed. In this respect, we identify various determinants of exports. Export growth is basically determined by external factors, for this we employ two variables FDI and real exchange rate. However, exports are also effected by domestic factors. In this respect we incorporate GDP, GDP growth rate, indirect taxes, communication facilities, savings, industrialization, labor force and official development assistance. Specified equation for export promotion is as follow:

$$\begin{aligned}
 EXP_{it} &= g(FDI_{it}, Z_{it}, \dots, Z_m, \xi_{it}) \\
 EX_{it} &= f(FDI_{it}, GDP_{it}, GROW_{it}, SAV_{it}, OD_{it}, IT \\
 &\quad EXCH_{it}, TV_{it}, TP_{it}, VAD_{it}, LF_{it})
 \end{aligned} \tag{2.2}$$

Where

- EX = Exports as a percentage of GDP,
- FDI = Foreign Direct Investment as a percentage of GDP,
- GDP = Gross domestic production in constant prices of 1989,
- $GROW$ = Annual percentage growth rate of GDP,
- SAV = National savings as a percentage of GDP,
- OD = Official development assistance as a percentage of GDP,
- IT = Indirect taxes as a percentage of GDP,
- $EXCH$ = Real exchange rate. It is obtained by multiplying the nominal exchange rate with US CPI and then divided by domestic CPI,
- TV = Number of televisions per 1000 persons,
- TP = Number of telephones per 1000 persons,
- Vad = Industry value added as a percentage of GDP,

LF = Total labor force,

Justification of Exports Determinants

Production level

It is the supply side determinant of exports.² Higher the level of production is the main cause of export expansion, because surplus of output can be exhausted in international markets. In a close economy surplus of production lead to fall in prices, that in turn creates pessimism among the producers. While, in an open economy such surpluses create foreign reserves by exporting production. So we expect the positive impact of GDP on exports growth. In empirical literature Kumar (1998) confirms the positive impact of GDP on exports.

Production Growth

Growth of the GDP is an indicator of future potential and sustainability of production level. Growth is more valid determinant of exports as compare to GDP because it measures the sustainability of output levels. So we expect positive impact of GDP growth on exports expansion.

Exchange Rate

A fall in domestic prices due to exchange rate depreciation makes exports cheaper in international markets resulting in increased demand for exports. But this effect varies across the countries due to domestic macroeconomic instability and issues of quality competition in exports sector. In empirical literature Sharma (2000) finds positive impact of depreciation. We expect the positive impact of real exchange rate on export growth.

Communication Facilities

In this era, when time is shrinking, the importance of communication facilities is becoming most important. For the measurement of communication facilities we employed two variables, namely, number of Televisions and number of Telephones. These two variables are also justified in empirical literature [Kumar (1998)]. Expansion of such facilities has the favorable effect for exploration and excess to the world markets. Hence we expect the positive impact of provision of such facilities.

Indirect Taxes

² See for detail Bertil (1968)

The effect of this variable is adverse on production decisions. But we cannot rule out the possibility of positive effect on exports due to fiscal incentives by government. Generally, government provides tax exemptions for the expansion of exports sector. Moreover, higher rate of indirect taxes has the negative impact on domestic demand resulting in exportable surplus.

Official Development Assistance

Large size of official development assistance implies that the procedure of infrastructure growth is emerging or rises in subsidies. This will favorably affect the investment climate. We expect the positive effect of this variable on export growth.

Savings

Savings are the source of investment. Higher savings means lower interest rates that in turn inversely affect FDI. Generally, in developing countries savings are used for non-productive factors, for example, purchasing of jewelry, property, etc. Higher savings also imply that society is not consumption oriented, it means large volume of goods is available for exports. So we expect positive impact of this variable on exports.

Industrialization

The agricultural output is subjected to uncertainty, particularly because of operation of nature's vagaries. Accordingly, now a day, just on the basis of agricultural output no country has greater incomes and outputs. On the other hand, it is the industrialization that results in maximum utilization of natural and human resources of the country and the industrial output is more or less stable. Thus more increase in industrialization will provide greater stimulus to output and national income of the country. Industrialization also promotes agriculture sector and agriculture uplifts the industrial sector. The industrial development will have the effect of developing the allied and related sectors.

The situation of persistent deficit in balance of payments is attributed to concentration in agriculture exports, falling prices of exports, the imports restrictions by the rich countries and the increasing import bill due to increased demand for oil and manufactured products etc. Through industrialization a country can enhance industrial production; replace the agriculture exports by the industrial exports, which command reasonable and stable prices in the world markets. Moreover, the industrialization reduces the dependence on imports by initiating the process of import substitution. Keeping in

view, all such arguments we can conclude the positive impact of industrialization on exports.

Labor Force

Optimum utilization of resources depends upon the labor force. Labor force positively determines production levels. In developing countries large volume of labor force in agriculture sector can be transferred in industrial sector without effecting the output of agriculture sector, because this sector is confronted with the problem of disguised unemployment. Such labor force is properly utilized in industrial sector that in turn expand export sector. In empirical literature, Pfaffermayr (1996) justifies the positive impact of labor force on exports.

Skilled labor force is the source of competitiveness in production and lower cost of production. Many developing countries exploit the advantages of skilled labor force for competitiveness in export sector. So we expect the positive impact of this variable on export growth. At the same time many under developing countries have unskilled labor force. The effect of unskilled labor force is opposite on competitiveness in export sector. Hence we expect both sign either positive or negative.

Foreign Direct Investment

In empirical literature the effects of FDI on exports are controversial. Many studies (e.g. Pfaffermayr (1996)) find positive impact of FDI on exports. The main reason underlying is the export oriented MNCs. Since government provides facilities for export promotion. Such facilities also attract foreign investors, FDI in order to promote exports government can adopt FDI led export growth strategies with twin objectives of capturing the benefits of both FDI inflow and exports growth. On the other hand, many studies find insignificant or weaker impact of FDI on exports (see Hoekman and Djankov (1997)). Such studies point out that the role of FDI in export promotion in developing countries remains controversial and depends crucially on the motive for such investment. If the motive behind FDI is to capture domestic market (tariff-jumping type investment), it may not contribute to export growth. On the other hand, if the motive is to tap exports markets by taking advantage of the country's comparative advantage, then FDI may contribute to export growth.

III. Data and Estimation Procedure

The data for this study have been taken from world development indicators (WDI) 2005. Originally a sample of 155 countries was selected but after screening process 75 countries was chosen for which data on most of the variables were available for at least 15 years. All the variables are measured in US dollar at current prices.

Gross foreign direct investment is measured as percentage of GDP. Gross foreign direct investment is inflows of foreign direct investment recorded in the balance of payments financial account.

Official exchange rate is measured as the number of local currency units per US\$, period average. Official exchange rate refers to the actual principal exchange rate and is an annual average based on monthly averages determined by country authorities or on rates determined largely by market forces in the legally sanctioned exchange market. We converted the nominal exchange rate into real exchange rate. For this we multiplied the nominal exchange rate with US CPI and then divided it by domestic CPI.

Gross national savings are measured as percentage of GDP. It includes net current transfers is equal to gross domestic savings plus net income and net current transfers from abroad.

Official development assistance and net official aid record the actual international transfer by the donor of financial resources or of goods or services valued at the cost to the donor, less any repayments of loan principal during the same period. Aid dependency ratios are computed using values in U.S. dollars converted at official exchange rates.

Vehicles are measured as the number of vehicles per 1,000 people. Motor vehicles include cars, buses, and freight vehicles but do not include two-wheelers. Population refers to mid year population in the year for which data are available.

Industry, value added is measured as percentage of GDP. It comprises value added in mining, manufacturing, construction, electricity, water, and gas. Value added is the net output of a sector after adding up all outputs and subtracting intermediate inputs. It is calculated without making deductions for depreciation of fabricated assets or depletion and degradation of natural resources.

Total labor force comprises people who meet the International Labor Organization (ILO) definition of the economically active population: all people who

supply labor for the production of goods and services during a specified period. It includes both the employed and the unemployed. While national practices vary in the treatment of such groups as the armed forces and seasonal or part-time workers, in general the labor force includes the armed forces, the unemployed and first-time job seekers, but excludes homemakers and other unpaid caregivers and workers in the informal sector.

Telephone mainlines are measured as the number of lines per 1,000 people. Telephone mainlines are telephone lines connecting a customer's equipment to the public switched telephone network. Likewise television sets are also measured as the number of sets in use per 1,000 people.

Net indirect taxes are measured as percentage of GDP. These taxes are the sum of indirect taxes less subsidies. Indirect taxes are those taxes payable by producers that relate to the production, sale, purchase or use of the goods and services. Subsidies are grants on the current account made by general government to private enterprises and unincorporated public enterprises. The grants may take the form of payments to ensure a guaranteed price or to enable maintenance of prices of goods and services below costs of production, and other forms of assistance to producers.

We now discuss estimation procedure for our model. Since time series data have the problem of autocorrelation and cross sectional data have the problem of heteroscedasticity. Pooling may minimize both problems. Moreover in pooling large data set produce efficient results and removes specification biases. Since political, structural and institutional characteristics vary from country to country, imposing a single relationship to all units is likely to suppress information. In order to overcome this problem we will use the approach of uniform shifts. The econometric literature suggests two approaches for uniform shifts [Green (1993), Kmenta (1986) and Maddala (1977)] the fixed effects and random effects model. In the present study we will follow fixed effects model.

IV. Empirical Results and Interpretation

In this section we report the empirical results based on pooled data for 75 developing countries over the period 1970 to 2004. We select a large set of developing countries for empirical investigation.

The panel data model is estimated by allowing the deterministic shifts across the countries. Since the model uses panel data, it is likely to suffer from autocorrelation as well as hetroskedasticity. Both are removed by applying appropriate econometric techniques.³

Note: (a) The results in parentheses show t-values.

(b) The * indicates that the parameters are significant at least 10 % level.

Table 4.1 (a)
Panel Data Estimation for Exports Determinants

Variables	Fixed effects	Variables	Fixed effects
FDI	0.000261 (1.4945)	EXCH	3.96E-06 (17.48)*
GDP	7.15E-20 (4.91)*	T P	0.000326 (6.41)*
Grow	0.012143 (4.05)*	TV	9.85E-05 (4.66)*
SAV	0.389982 (15.66)*	LF	0.242757 (2.72)*
OD	0.164817 (8.38)*	VAD	0.003333 (10.27)*
IT	0.037753 (2.08)*	AR(1)	0.73764 (38.16)*
R ²	.948	A. R ²	.943
D W	1.999	F	651

³ The problem of autocorrelation is removed by first order autoregressive transformation AR (1), while the problem of hetroskaticity was removed by using the white hetroskadasticity command in E Views, which

Table 4.2 (b)

Countries	Fixed Effects	Countries	Fixed Effects
Angola	0.359979 (0.05)	Sri Lanka	0.038739 (1.43)
Argentina	-0.25367 (-4.84)*	Lesotho	0.023765 (1.92)**
Burundi	-0.12632 (-2.33)*	Madagascar	-0.00733 (-1.57)
Benin	0.030453 (1.04)	Mexico	-0.09568 (-3.13)*
Burkina Faso	-0.13914 (-2.53)*	Mali	-0.02695 (-1.62)**
Bahrain	0.117196 (0.16)	Mozambique	-0.14095 (-2.35)*
Belize	0.209103 (0.99)	Mauritania	0.14736 (0.39)
Bolivia	-0.08238 (-2.71)*	Mauritius	0.235294 (0.44)
Brazil	-0.28131 (-4.87)*	Malaysia	0.193511 (0.02)
Botswana	0.034213 (1.58)	Niger	-0.03811 (-1.81)**
Chile	-0.07527 (-3.05)*	Nigeria	0.024003 (2.04)*
China	-0.28698 (-4.00)*	Nicaragua	0.21441 (0.19)
Cote d'Ivoire	0.118932 (0.46)	Nepal	0.129937 (0.64)
Cameroon	-0.03159	Pakistan	-0.08133

produces white hetroskadastic consistent standard errors.

	(-2.06)*		(-2.75)*
Congo, Rep.	0.11057	Panama	0.063984
	(0.90)		(0.89)
Colombia	-0.1646	Peru	-0.18529
	(-3.66)*		(-4.21)*
Cape Verde	-0.03617	Philippines	0.021434
	(-1.57)		(1.98)*
Costa Rica	0.047827	Papua New Guinea	0.135933
	(1.35)		(0.70)
Czech Republic	0.009174	Poland	-0.1806
	(1.71)**		(-3.38)*
Dominican Republic	0.003549	Paraguay	0.039938
	(1.92)**		(1.51)
Algeria	-0.1484	Saudi Arab	0.066661
	(-4.24)*		(1.87)**
Ecuador	-0.06776	Senegal	0.075647
	(-3.04)*		(0.90)
Egypt, Arab Rep.	-0.06257	Sierra Leone	-0.02819
	(-2.73)*		(-1.89)**
Fiji	0.347795	El Salvador	-0.06229
	(1.90)**		(-2.49)*
Gabon	0.056024	Swaziland	0.459727
	(1.57)		(2.80)*
Ghana	-0.04942	Chad	-0.04935
	(-1.91)**		(-1.76)**
Gambia, The	0.196334	Thailand	-0.08595
	(0.21)		(-2.46)*
Guatemala	-0.04144	Togo	0.170605
	(-2.29)*		(0.05)
Guyana	0.532451	Trinidad and	0.014148
	(2.80)*	Tobago	(2.50)*

Honduras	0.063976 (1.08)	Tunisia	0.099853 (0.88)
Haiti	-0.10133 (-2.39)*	Turkey	-0.36063 (-5.14)*
Indonesia	-0.05185 (-2.69)*	Tanzania	0.019454 (1.35)
India	-0.18033 (-3.29)*	Uganda	-0.11255 (-2.29)*
Iran, Islamic Rep.	-0.29245 (-3.87)*	Venezuela, RB	-0.11511 (-3.58)*
Jamaica	0.14999 (0.83)	South Africa	-0.06532 (-2.99)*
Jordan	0.267707 (1.76)**	Zambia	-0.01003 (-1.96)**
Kenya	0.021997 (1.28)	Zimbabwe	-0.04759 (-2.25)*
Korea, Rep.	-0.16022 (-3.36)*		

In literature the first and foremost determinant is FDI. However in empirical literature the effects of FDI on exports are controversial. Our study finds positive but insignificant impact of FDI on export growth. The success stories of East and South East Asian countries suggest that FDI is a powerful tool of export promotion because multinational companies (MNCs) through which most FDI is undertaken have the well established contacts and up to date information about foreign markets. However, the experience of these countries cannot be generalized to all developing countries given the lower level of infrastructure and the rigidity in both the factor as well as commodity markets. Further more, the role of FDI in exports promotion in developing countries remains controversial and depends crucially on the motive for such investment. If the motive behind FDI is to capture domestic market (tariff-jumping type investment), it may not contribute to export

growth. On the other hand, if the motive is to tap exports markets by taking advantage of the country's comparative advantage, then FDI may contribute to export growth or not depends on the nature of policy regime. By now it is well known that an outward oriented regime encourages export-oriented FDI while an inward-oriented policy regime attracts FDI mainly to capture domestic rather than exports markets.

The effect of GDP and GDP growth is highly significant with positive sign. The level of production can be utilized at domestic and international level at the same time. The developing countries have relative advantages for agriculture goods. They can exhaust benefits of lower cost production by export growth policies. More over, large size of GDP creates environments for investment decisions.

The real exchange rate is the most important variable for export expansion. The impact of real exchange rate on trade is controversial and it varies from country to country. The exchange rate positively determines export. Our empirical estimates are consistent with theory as well as empirical evidence found in other studies [e.g. Sharma (2001)].

Depreciation of domestic currency makes its exports cheaper and exports expensive. In theory the benefits of depreciation can exceed than its losses if Marshall Lerner conditions fulfill⁴. Our empirical estimates support the hypotheses of favorable effect of real exchange rate on exports.

The effect of communication facilities is positively significant in explaining export growth. In the globalization era, when the value of time is most important, the need of wide spread communication facilities is becoming most important. For the measurement of communication facilities we employed two variables, namely, number of Tele visions and number of Tele phones. Both variables turned out to be significant. Expanding the net of such facilities is helpful in exploration of new international markets. Further, these make easy to access the world markets. As developing countries exports are concentrated in few markets they can reap the benefits of global communication facilities. The results are in line with Kumar (1998).

The effect of labor force is positively significant on export growth. Optimum utilization of resources depends upon the labor force. Labor force positively determines

production levels. In developing countries large volume of labor force in agriculture sector can be transferred in industrial sector without effecting the output of agriculture sector. Because this sector is confronted with the problem of disguised unemployment. Such labor force is properly utilized in industrial sector that in turn expand export sector. The results are consistent with Pfaffermayr (1996).

The effect of official development and assistance variable is also positively significant. This variable reflects the development phenomena. Exports are favorably affected by development expenditures. Because it is the sign of government positive behavior and future expectations of exporters for export facilities become stronger.

The effect of indirect taxes is positively associated with exports. The proportion of indirect taxes varies for different goods. So it is not necessary that indirect tax is high for exportable goods. Furthermore, government provides tax exemptions to exporters. These are the reasons that this variable does not negatively determine to exports.

The effect of savings is significant in explaining export growth. Higher savings imply lower the interest rates that promote investment opportunities. The investment is the key channel for export growth. In developing countries government provide many incentives for export promotion strategies. The domestic investments take place in different sectors but it is much responsive in trade sector to incentives provided by government. After the activism of WTO developing countries are enhancing export oriented investment schemes. These are the arguments that support our hypotheses that investment led export growth. The empirical results also support our hypotheses. Over and above, savings are the source of removal of internal and external gaps in developing countries. As two-gap theory explains saving, investment and exports, imports gap in developing countries. Large savings are the source of removal of domestic gap that in turn remove external gap by enhancing export growth.

The effect of industrialization is highly significant in explaining export growth. The importance of industrialization for developing countries is obvious for the following reasons. The agricultural output is subjected to uncertainty, particularly because of operation of nature vagaries. Accordingly, now a day, just on the basis of agricultural output no country have greater incomes and outputs. On the other hand, it is the

⁴ According to Marshall the devaluation is beneficial if and only if the sum of export and import elasticities is

industrialization that results in maximum utilization of natural and human resources of the country; the industrial output is more or less stable. Thus more the industrialization will provide greater stimulus to output and national income of the country. Industrialization promotes agriculture sector and agriculture uplifts the industrial sector. The industrial development will have the effect of developing the allied and related sectors. For example, if in a country the steel mills are established, they will provide foundations for industrialization. They will provide steel and iron. The industries, which use steel and iron as their input, will be able to get them from domestic sources. In this way, these industries will develop; the business of coal will develop; the demand for labor having the skill for moulding and melting will be created. In this way, the processes of development will cumulate and market will be extended. Industrialization is also the cause of attainment of external and internal economies.

The situation of persistent deficit in BOP is attributed to agriculture exports, falling prices of exports, the imports restrictions by the rich countries and the increasing import bill due to increased demand for oil, cooking oil, machinery and vehicles etc. In such state of affairs, international payments are increasing day by day while receipts are not increasing to the desired extent. Through the industrialization developing countries will be able to enhance their industrial production; replace the agriculture exports by the industrial exports which command reasonable and stable prices in the world markets. Moreover, the industrialization will reduce the dependence on imports by initiating the process of import substitution.

V. Conclusion and Policy Implication

The objective of this study was to find out factors, which are important in determining exports in developing countries. For this purpose we selected a sample of 75 developing countries over the period 1970-2004. The data have been derived from the world development indicators (WDI) 2005. Fixed effects (country specific intercepts) model is estimated for panel pooled data.

The effects of GDP and GDP growth rates are significant with positive signs in explaining exports. Higher the production level of a country is the main source of exports while higher the growth rates show sustainability and future potential of the economy.

The effect of FDI is not significant but positively associated. The success stories of Asian countries that FDI led export growth cannot be generalized on all developing countries, because structural problems vary across the countries. The effect of real exchange rate on exports is significant with positive sign. Although the benefits of depreciation in currency are not fruitful across the countries, depending upon their domestic structure of economies. But our results find overall effect is significant.

The industrial output more or less is stable. The prices of manufacturing goods are stable in the world markets. Our results suggest positive significant effect of industrialization on exports. The impact of communication facilities is also turned out to be significant with positive signs in explaining exports. Such facilities are helpful in exploring and access to new markets.

The effect of savings and labor force is also significant. Both facilitate investment tendencies that determine exports. It is not necessary that investment take place in export sector. But it is generally observed that trade sector is providing more investment opportunities due to trade liberalization at domestic and international level.

The policy implications that we are offered are:

- It is of critical importance to maintain a high and sustainable economic growth rate. Evidence has shown that a sustainable growth patterns promote exports.
- Export oriented MNCs should be encouraged in host countries. So that, trade deficits can be removed.
- The net of communication facilities should be widened in host countries. Subsidies may be provided in communication sector for the sake of lower prices of such facilities.
- A stable exchange rate policy has to be ensured in order to avoid the exchange rate risk attached to the assets, import prices and profit considerations of direct investor in developing countries.
- Developing countries should replace the agriculture exports by the industrial exports, which command reasonable and stable prices in the world markets. Moreover, the industrialization will reduce the dependence on imports by initiating the process of import substitution.

References

- Baldwin, R. E. (1979). "Determinants of Trade and Foreign Investment: Further Evidence", *Review of Economics and Statistics*, 61: 40-48.
- Bertil, O. (1968). "Model Construction in International Trade Theory", *Published in Induction, Growth and Trade*. Clarendon Press. Oxford PP: 325-341.
- Funke, M. and S. Holly (1992). "The Determinants of West German Exports of Manufactures: An Integrated Demand and Supply Approach", *Weltwirtschaftliches Archive*, 128(3): 498-512.
- Government of Pakistan, Economic Survey. Islamabad: Economic Advisors Wing Ministry of Finance. (Various Issues).
- Green, W. H. (1993). "*Econometric Analysis*", Second Edition, New York: MacMillan.
- Grossman, G. M. and E. Helpman (1989). "Product Development and International Trade", *Journal of Political Economy*, 97(6): 1261-1283.
- Hausman, J. and W. Taylor (1985). "Panel Data and Unobserved Individual Effects", *Econometrica*, 49: 1377-1398.
- Helpman, E. (1984). "A Simple Theory of International Trade with Multinational Corporations" *Journal of Political Economy*, 92(3): 451-471.
- Hirsch, S. S. Kalish and S. Katzeneison (1988). "Effects of Knowledge and Service Intensities on Domestic and Export Performance", *Weltwirtschaftliches Archive*, 124(2): 230-241.
- Hoekman, B. and S. Djankov (1997). "Determinants of Export Structure of Countries in Central and Eastern Europe", *The World Bank Economic Review*, 11(3): 471-487.
- Kmenta, J. (1986). "*Elements of Econometrics*", Second Edition, New York: MacMillan.
- Kravis, I.B. and Robert, E. Lipsey (1982). "The Location of Overseas Production and Production for Export by US Multinational Firms", *Journal of International Economics*, 12: 201-223.
- Kumar, N. (1998). "Multinational Enterprises, Regional Economic Integration, and Export-Platform Production in the Host Countries: An Empirical Analysis for the US and Japanese Corporations", *Weltwirtschaftliches Archiv*, 134: 450-483.
- Rehman, K. (1991). "Firms' Competitive and National Comparative Advantages as Joint Determinants of Trade Composition", *Weltwirtschaftliches Archive*, 127(1): 83 -97.
- Lall, S. (1978). "Transnationals, Domestic Enterprises and the Industrial Structure in Host LDCs: A Survey", *Oxford Economic Papers*, 30: 217-248.

- Maddala, G. S. (1977). *“Econometrics”*, New York: McGraw-Hill.
- Nayyar, D. (1978). “Transnational Corporations and Manufactured Exports from Poor Countries”, *Economic Journal*, 88: 59-84.
- O’Sullivan, P. J. (1993). “An assessment of Ireland’s Export-Led Growth Strategy via Foreign Direct Investment, 1960-1980”, *Weltwirtschaftliches Archive*, 129: 139-158.
- Petrochilos, G. A. (1989). “Foreign Direct Investment and the Development Process: The Case of Greece”, *Avebury: Gower Publishing Company Ltd.*
- Pfaffermayr, M. (1996). “Foreign outward Direct Investment and Exports in Austrian Manufacturing: Substitutes or Complements?” *Weltwirtschaftliches Archive*, 132(2): 501-522.
- Riedel, J., C. Hall and R. Grawe (1984). “Determinants of Indian Exports Performance in the 1970s”, *Weltwirtschaftliches Archive*, 120(1): 40-63.
- Sharma, K. (2000). “Export Growth in India: Has FDI Played a Role?” at:<http://www.econ.yale.edu/~egcenter/>
- Todaro, M. P. (1997) *“Economic Development”* Sixth Edition. New York: Longman.
- Togan, S. (1993). “How to Assess the Significance of Export Incentives”: An Application to Turkey”, *Weltwirtschaftliches Archive*, 129 (4): 777-799.
- World Bank (1991). *World Development Report*, New York: Oxford University Press, Various Issues.