UNITED NATIONS CONFERENCE ON TRADE AND DEVELOPMENT

POLICY ISSUES IN INTERNATIONAL TRADE AND COMMODITIES
STUDY SERIES No. 48

EXPORT STRUCTURE AND ECONOMIC PERFORMANCE IN DEVELOPING COUNTRIES: EVIDENCE FROM NONPARAMETRIC METHODOLOGY

by

Sudip Ranjan Basu
UNCTAD, Geneva

and

Monica Das
Skidmore College, New York

UNITED NATIONS
New York and Geneva, 2011

Note

The purpose of this series of studies is to analyse policy issues and to stimulate discussions in the area of international trade and development. The series includes studies by UNCTAD staff and by distinguished researchers from academia. This paper represents the personal views of the authors only, and not the views of the UNCTAD secretariat or its member States.

The designations employed and the presentation of the material do not imply the expression of any opinion whatsoever on the part of the United Nations Secretariat concerning the legal status of any country, territory, city or area, or of its authorities, or concerning the delimitation of its frontiers or boundaries.

Material in this publication may be freely quoted or reprinted, but acknowledgement is requested, together with a reference to the document number. It would be appreciated if a copy of the publication containing the quotation or reprint could be sent to the UNCTAD secretariat at the following address:

Chief
Trade Analysis Branch
Division on International Trade in Goods and Services, and Commodities
United Nations Conference on Trade and Development
Palais des Nations
CH-1211 Geneva

Series Editor:
Victor Ognivtsev
Officer-in-Charge, Trade Analysis Branch

UNCTAD/ITCD/TAB/49

UNITED NATIONS PUBLICATION

ISSN 1607-8291

© Copyright United Nations 2011
All rights reserved

Abstract

The objective of the paper is to use nonparametric methodology to examine the relationship between skill and technology intensive manufacture exports and gross domestic product (GDP) per capita, controlling for institutional quality and human capital in developing countries. The paper uses the Li-Racine (2004) generalized kernel estimation methodology to examine the role of skill and technology content of the exports in understanding differential level of economic performance across countries and country groups. In the extended model, we also control for other factors that influence economic performance such as availability of financial capital and effective foreign market access of exports of developing countries. The paper uses the database from the United Nations COMTRADE Harmonized System (HS) four-digit level of disaggregation to provide new system of classification of traded goods by assigning each one of them according to their skill and technology content as proposed in Basu (forthcoming). The analysis is carried out for a set of 88 developing countries over 1995 to 2007. Similar to parametric results, the nonparametric analysis lends further support to the view that as the skill and technology content of the exports increase, the impact on GDP per capita increases positivity and significantly as well, after controlling for other policy variables.

Keywords: Nonparametric analysis, Export structure, Institutions, Developing countries

JEL Classification: C1, F1, O43, R11

Acknowledgements

We would like to thank Wojciech Stawowy for providing research support and Sandwip Das, Khalil Rahman, Victor Ognivtsev, Aki Kuwahara and Mia Mikic for their encouraging comments during the preparation of the paper. Thanks are also due to the participants' comments at the Research Workshop on Trade Diversification in the Context of Global Challenge, UNESCAP-UNCTAD-WTO, Vientiane, Lao PDR, 27-28 October 2010 and XVth Spring Meeting of Young Economists, Luxembourg, 15-17 April 2010, where some concepts and results of this paper were presented. We gratefully acknowledge the Faculty Development grant from Skidmore College, New York, as well as the Economics department for funding the services of research assistant Brian Stickles.

The views expressed in this paper are those of the authors and do not necessarily reflect the views of the United Nations Secretariat or its members. Any mistakes and errors in this paper are the authors' own.

Contents

List of figures

List of tables

Annex tables

1. Introduction

Does transformation in export structure cause differential levels of economic performance across countries? Should the trade policymaking agenda of developing countries be directed towards building capacities and capabilities for producing skill and technologically intensive manufacturing goods with similar to those of developed countries?[1] What effects do low, medium and high-skill and technological intensive exports at the national level have on Gross Domestic Product per capita (GDPPC) in developing countries? Answers to these questions are relevant for trade policymakers and planners in developing and least developed countries (LDCs) as well as to the United Nations and other multilateral organizations.

During the recent global economic and financial crisis, many developing countries faced a steady decline of their exports revenue due to the over-dependence on international trade leading to over-exposure of those economies to the rest of the world that eventually led to many unwarranted impacts on economic growth and employment opportunities at the domestic markets (UNCTAD, 2009) Some developing countries such as China, India, Brazil and others could undertake trade-related policies to speed up the recovery process –diversification of their exports basket has been one of the key trade policy components – to stabilize the exports sector growth and subsequently GDP growth.

In recent years, the trade literature provides a number of empirical evidence to support the importance of export diversification and what a country produces matter, by examining the national share of exports (NSEXP) in manufacturing goods (Lall, 2000; Hausman, Hwang and Rodrik, 2006; UNDESA, 2006; UNECA, 2007; World Bank, 2009; and Shirotori, Tumurchudur and Cadot, 2010). However, to support the increasing role of exports and their transformation, countries' domestic industrial policies require emphasizing the promotion of efficient domestic institutions, spending on human capital accumulation and well-balanced financial and trade-supporting economic policies to raise the level of the GDP per capita – a measure of improvement in economic performance – at the national level (UNCTAD, 2002; Imbs and Wacziarg, 2003; Dollar and Kraay, 2003; Hausmann and Klinger, 2006; Rodrik, 2007; Klinger, 2009; UNDESA, 2010).

Apart from key role of diversification of exports as well as changing nature of skill and technological content of products in developing countries to boost economic performance, there are growing number of research papers in literature to document the critical role of efficient domestic institutional conditions as well as human capital accumulation and geography (Acemoglu et al., 2001; Sachs, 2003; Easterly and Levine, 2003; Rodrik *et al.,* 2004; and Basu, 2008).

The purpose of our paper is to further investigate the *quality of exports hypothesis by classifying the exported products in relation to level of skill and technological contents*. We compute shares of low (C), medium (D) and high (E) level skill and technology contents of exported products for each of the countries in the sample and then use the measure of institutional quality index (*IQI*) by applying the latent variable technique developed by Nagar and Basu (2002) and combined gross enrolment ratio (CGER) to explore their impact on income. Utilizing the Li–Racine nonparametric estimation technique for mixed data, developed by Li and Racine (2004) and Racine and Li (2004), our paper explores the relationship between GDP per capita (GDPPC) and level of skill and technology contents of exports. The technique of choice allows us to examine the *GDPPC*-(C/D/E) *NSEXP,* the relationship in a data-driven specification-free manner.

[1] For details, refer to the United Nations Statistics Division. Table A1 gives a complete list and classification of the countries used in the paper.

The contribution of our paper is in the application of the Li and Racine (2007) nonparametric methodology to investigate the relationship between three types of manufactures exports based on their skill and technology intensity and GDP per capita variable, in a panel with both time and country effects. In the estimation of any model with GDP per capita and export structure and other institutional, human capital and policy variables, mainly two types of biases can be at work: (a) misspecification bias and (b) endogeneity/omitted variable bias. The parametric estimates potentially suffer from both (Basu, forthcoming). The nonparametric estimates in the paper effectively deal with (a). Bias due to (b) is left for future works.

Our nonparametric estimates find strong support for positive significant impact of higher level of skill and technology intensive manufactures on GDP per capita, one of the first attempts in this field of study. For the majority of the countries examined, the impact of higher level of skill and technology related exports on the GDP per capita are quite favorable. Since the Li–Racine methodology provides weighted estimates (weights determined by all observations) of the regression function and its slope at every data point, we can also examine the nonparametric estimates for various subgroups by continents and country characteristics. The impact of skill and technology contents of exports on GDP per capita is far from uniform across countries or time periods. However, the favourable relationship between these two or minimal support for a negative relation between the two variables, is robust to most sub groups and country characteristics.

We now sketch a course for the rest of the paper. Section 2 presents the nonparametric density estimates and the Li–Racine estimation technique for mixed data, utilized in the paper to the estimation of (C/D/E) NSEXP-GDPPC relationship, and then latent variable technique for calculating the IQI. Section 3 discusses the data set and the empirical model. Main results of the paper are presented in section 4 and section 5 concludes the paper.

2. Empirical Methodology

This section provides description of nonparametric density estimation to all the variables considered in the analysis and then provide theoretical framework of the Li–Racine (2004) generalized kernel estimation methodology. We also construct the IQI, which is a composite index based on the methodology developed by Nagar and Basu (2002).

2.1 Nonparametric Density Estimates

In this section we obtain some graphs of the probability density functions of the variables considered in the core as well as extended models. Figures 1 through 8 are the graphs of the density functions for all economic variables used in the empirical models. The estimator of the probability function of random variable $X \in \Re$ at the point $x \in \Re$ is given by

$$\hat{f}(x) = \frac{1}{n}\sum_{i=1}^{n} K(x_i, x, h) \qquad (1)$$

In the above equation, X is a continuous random variable, *K(.)* is the Gaussian kernel density function and h is a smoothing parameter obtained from the method of cross validation.

We estimate the density functions, unconditional or conditional moments of distributions, without making any prior assumptions about functional forms. The data are allowed to speak for themselves in determining the shape of the unknown functions (Silverman, 1986). Suppose X is a continuous random variable, *f(x)* is the probability density function and *F(x)* is the cumulative density function, when $X = x$. With h as the smoothing parameter, the nonparametric naive estimate of $f(x)$ is

$$\hat{f}(x) = \underset{h \to 0}{lt} \left[F(x + h/2) - F(x - h/2) \right] / h \tag{2}$$

According to equation (2), the nonparametric density estimate $\hat{f}(x)$ is 1/h the probability that X belongs to the interval $[x - h/2, x + h/2]$. In other words, $\hat{f}(x)$ is 1/h the probability that $(X - x)/h$ belongs to the interval $[-1/2, \ 1/2]$. Following the methodology outlined in Silverman (1986), we define an identity function.

$$\begin{aligned} I(.) &= 0 \quad if \quad -0.5 \le (X_i - x)/h \le 0.5 \\ &= 0 \quad otherwise \end{aligned} \tag{3}$$

We rewrite the nonparametric density function as

$$\hat{f}(x) = \frac{1}{nh} \sum_{i=1}^{n} I\left(\frac{X_i - x}{h} \right) \tag{4}$$

The graph of the estimated density function from equation (3) is not a smooth curve. Thus the weight function *I(.)* is replaced by the following kernel density function *K(.)*,

$$K(\psi_i) = \frac{1}{\sqrt{2\pi}} exp\left(-\frac{1}{2} (\psi_i)^2 \right) \tag{5}$$

$$\psi_i = (X_i - x)/h \, ; \, \int_{-\infty}^{+\infty} K(\psi) d\psi = 1$$

The nonparametric density function is

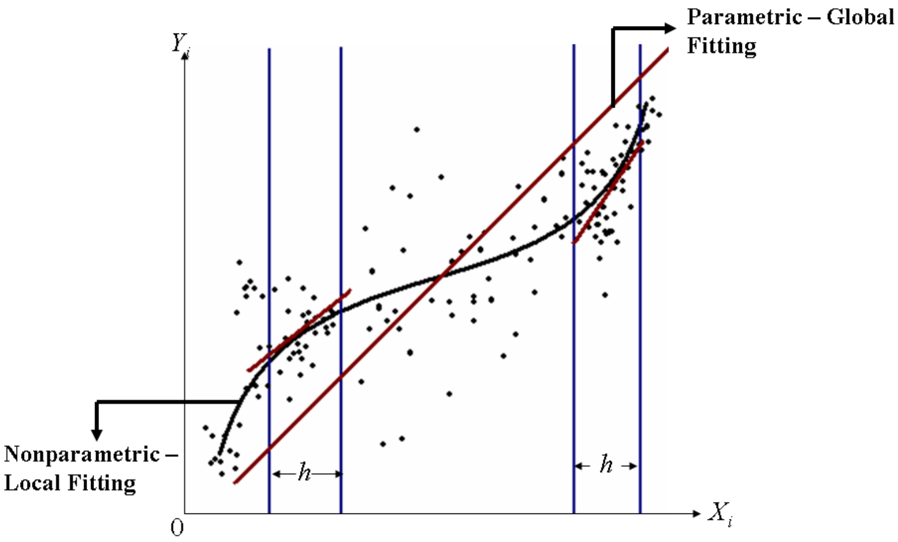
$$\hat{f}(x) = \frac{1}{nh} \sum_{i=1}^{n} K(\psi_i) \tag{6}$$

It is well known in the literature that the choice of kernels does not influence significantly the efficiency of estimates. The choice of window width is, however, crucial, since small values of h cause over-smoothing and high values lead to under-smoothing of the estimates. To estimate the density function is (5), we choose the optimum h such that is minimizes some function of the mean squared error of $\hat{f}(x)$.

2.2 A Generalized Kernel Estimation

The basic principle behind the nonparametric estimation technique is to fit a window h (also known as smoothing parameter) around every observation of the data set and estimate the relationship of interest between variables in each window. A kernel density function *K(.)* is used to give high weights to data points close to the window and low weights to data points far from the window. Thus the regression relationship is estimated, piece by piece or window by window as shown in figure 1. One of the advantages of nonparametric estimation is that it estimates the regression function *m(.)* as well as the slope coefficients *β(.)* at every data point.

Figure 1: Nonparametric Estimation Analysis Framework



If y_i is the target variable (GDP per capita) and x_i the policy variable (level of skill and technology content of the manufactures goods, institutional quality or enrolment ratio), ($E(y_i|x_i) < \infty$) the relation among them may be expressed in terms of the conditional moment $E(y_i|x_i) = m(x_i)$. When the actual functional form is unknown, parametric specifications including complex ones like the translog functions are deemed inadequate. Compared with the parametric procedures, the nonparametric methodology is more proficient in capturing non linearities in the underlying system thus dealing with the problem of model misspecification.

The paper uses the Li–Racine Generalized Kernel Estimation Methodology (by Li and Racine, 2004; and Racine and Li, 2004) to examine the relationship between exports structure by classifying the product space through level of skills and technology content manufactures and GDP per capita. Equation (7) represents the basic regression model.

$$y_i = m(x_i) + \varepsilon_i \qquad (7)$$

In equation (7), y_i represents the i^{th} observation on the dependent variable (GDP per capita) and i indexes country-time observations of N countries and T time intervals. Also, $m(.)$ is an unknown smooth regression function with argument x_i=[x_i^c, x_i^u], where x_i^c is a $NT \times k$ vector of continuous variables (low, medium and high skill and technology intensive manufactures as well as institutional quality and gross combined enrolment ratio), x_i^u is a $NT \times 1$ vector of unordered discrete variables (country effects) and ε_i is a $NT \times 1$ vector of errors. Following the Li-Racine methodology, we take a first order Taylor expansion of (7) around x_j to obtain equation (8).

$$y_i \approx m(x_j) + (x_i^c - x_j^c)\beta(x_j) + \varepsilon_i \qquad (8)$$

Here, $\beta(x_j)$ is the partial derivative of $m(x_j)$ with respect to x^c. The estimate of $\delta(x_j) \equiv [m(x_j)\ \beta(x_j)]'$ is represented by equation (9).

$$\hat{\delta}(x_j) = \begin{pmatrix} \hat{m}(x_j) \\ \hat{\beta}(x_j) \end{pmatrix}$$

$$=\left[\sum_i K_{\hat{h}}\begin{pmatrix} 1 & \left(x_i^c - x_j^c\right) \\ \left(x_i^c - x_j^c\right) & \left(x_i^c - x_j^c\right)\left(x_i^c - x_j^c\right)' \end{pmatrix}\right]^{-1} \sum_i K_{\hat{h}}\begin{pmatrix} 1 \\ \left(x_i^c - x_j^c\right) \end{pmatrix} y_i \qquad (9)$$

In equation (9), $K_{\hat{h}} = \prod_{s=1}^{q} \hat{h}_s^{-1} w\left(\frac{x_{si}^c - x_{sj}^c}{\hat{h}_s}\right) \prod_{s=1}^{r} l^u\left(x_{si}^u, x_{sj}^u, \hat{\lambda}_s^u\right)$ is the generalized kernel function. The commonly used product kernel K_h is from Pagan and Ullah (1999), where w is the standard normal product kernel function with window width $h_s = h_s(\mathrm{NT})$ associated with the s^{th} component of x^c. The kernel function l^u is a variation of Aitchison and Aitken (1976) kernel function which equals one if $x_{si}^u = x_{sj}^u$ and λ_s^u otherwise.

It is well known in the nonparametric literature that estimation of the bandwidths (h, λ^u) is crucial. The methodology helps to implement a number of "data-driven" numerical algorithms to determine the appropriate bandwidth or smoothing parameters for a given sample. The paper uses the Least squares cross validation method as discussed in Racine and Li (2004). Least squares cross validation selects h_1, h_2, … h_q, λ_1^u, λ_2^u, … λ_r^u to minimize the following cross validation function:

$$CV = \sum_{i=1}^{n} \left(y_i - \hat{m}_{-i}(x_i)\right)^2 M(x_i) \qquad (10)$$

Here, $\hat{m}_{-i}(x_i) = \Sigma_{l \neq i}^{n} y_l K_\gamma(.) / \Sigma_{l \neq i}^{n} K_\gamma(.)$ is the leave-one-out kernel estimate of $m(x_i)$ and $0 \leq M(.) \leq 1$ is a weight function. The purpose of $M(.)$ is to avoid difficulties caused by dividing by zero or by the slow convergence rate induced by boundary effects.

2.3 Computing the IQI

The *IQI* is latent variable, which cannot be measured directly in a straightforward manner.[2] However, we assume that any latent variable (Y) is linearly determined by exogenous variables X_1, X_2, … X_k. Let $Y=\alpha+\beta_1 X_1+\ldots+\beta_k X_k+\varepsilon$, where X_1, X_2, … X_k is set of variables that are used to capture Y. If variance of error ε is small relative to the total variance of the latent variable Y, we can reasonably assume that the total variation in Y is largely explained by the variation in the variables. So, which linear combination of X_1, X_2, … X_k can account for the explained part of the total variation in Y due to the variables X_2, … X_k?

Nagar and Basu (2002), propose to replace the set of variables by an equal number of their principal components (PC), so that 100 per cent of variation in variables is accounted for by their PCs.

First, the variables are transformed, or X_k= [X_k − minimum(X_k)/(maximum(X_k) − minimum(X_k))].[3] Finally, *IQI* is computed as a weighted sum of the transformed version of these selected variables, where respective weights are obtained from the analysis of principal

[2] See Anderson (1984) for detailed discussion on multivariate statistical analysis.

[3] N is the total number of countries in the sample and k = number of variables as there are 3 in core model and 5 in extended model.

components.[4] Hence, the highest weight is assigned to the first PC, because it accounts for the largest share of total variation in all indicator variables. Similarly, the second PC accounts for the second largest share and therefore is assigned the second largest weight, and so on.

Therefore, to calculate IQI, we construct three separate components of *IQI*: Economic *IQI*, Social *IQI* and Political *IQI*, and then combine them to obtain *IQI*. Higher values of *IQI* indicate a higher level of institutional quality respectively.

3. Data and Empirical Model

3.1 Data

Our paper is based on 88 developing countries, of which 24 emerging developing countries (emerging South)[5], and 64 other developing countries. The developing country lists also include 45 LDCs and small island developing Countries (SIDS), as defined by United Nations and the World Trade Organization (WTO) respectively.[6] We obtained data from the UNCTAD sources and several international and research institutions as well as from the University of Pennsylvania.[7]

The data on countries' exports are based on the new UNCTAD database of Trade Statistics called South-South Trade Information System (SSTIS), the data of which is mostly in drawn from the United Nations Commodity Trade Statistics Database (COMTRADE) covering over 1,250 products at the HS 4-digit level for the years 1995 to 2007. The value of exports at the HS-4 digit level is measured in United States dollars. Then, we decompose the exports database into six categories as proposed in Basu (forthcoming) by their level of skill and technology content. The categories of exports are used to compute different factor-contents to indicate how countries are moving out from primary commodities to manufactures-skill and technology content sectors. This paper builds on, especially for classifying the products by skill and technology contents of exports products, the previous studies UNCTAD (2002, 1996) and Lall (2000, 2005). The novelty of this new skill and technology contents exports structure classification is due to its focus at the HS-4 digit level products and also to identify products in terms of six different levels: Non-fuel primary commodities (A), Resource-intensive manufactures (B), Low skill- and technology-intensive manufactures (C), Medium skill- and technology intensive manufactures (D), High skill- and technology intensive manufactures (E) and Mineral fuels (F). The paper computes share of low, medium and high skill and technology intensive manufactures at the national level, a share of these three categories of country's total exports for any particular year, excluding mineral fuels. Furthermore, all the countries with high value of minerals fuels exports are dropped from the analysis. The classification of skill and technology content of products at HS-4 digit and HS-6 digit levels can be downloaded from UNCTAD website (http://www.unctad.info/en/Trade-Analysis-Branch/Data-And-Statistics/Other-Databases/)

---

[4] See Nagar and Basu (2002) for details, and also see Basu, Klein and Nagar (2005).

[5] Emerging South classification in this paper is based on UNCTAD country classification, IMF country classification, Goldman Sachs N11 country groupings, Morgan Stanley Capital International Emerging Market Index and Basu Emerging Seven country groupings (2007).

[6] See Annex Table A1 for a complete list of developing countries.

[7] See Annex Table A2 for data sources of the variables used in the paper.

3.2 Dependent and Independent Variables

Our main dependent variable is real GDP per capita (international $, 2005 Constant Prices, Chain series) to identify level of economic performance at the cross-country level. The corresponding variable *GDPPCpenn* is obtained from PWT 6.3, Center for International Comparisons of Production, Income and Prices at the University of Pennsylvania.

The three main variables are used to understand the skill and technology content of exports to estimate their impact on the real GDP per capita. It is believed, according to the trade literature, that with the improvement in quality of manufacturing exports in terms of skill and technological contents, the country's economic performance would be higher.

The variable *CNSEXP* measures share of low skill- and technology-intensive manufactures as a percentage of total merchandise exports at any given year/period. Similarly, the two other variables are the following: *DNSEXP* measures share of medium skill- and technology-intensive manufactures as a percentage of total merchandise exports and *ENSEXP* measures share of high skill- and technology-intensive manufactures as a percentage of total merchandise exports. The higher values of these variables imply that their importance is increasing of these products in their export baskets.

The variable *IQI* measures institutional quality index. IQI is constructed to evaluate the quality of institutions. It is calculated from three aspects of institutional quality: economic (EIQI), social (SIQI) and political (PIQI). Economic institutional quality is a combination of legal and property rights, bureaucratic quality, corruption, democratic accountability, government stability, law and order, independent judiciary, and regulation; social institutional quality is based on press freedom, civil liberties, physical integrity index, empowerment right index, freedom of association, women's political rights, women's economic rights, and women's social rights; and political institutional quality depends on executive constraint, index of democracy, political rights, polity score, lower legislative, upper legislative and independent sub-federal units. The IQI is based on 23 indicators of quality of institutions from 1995 to 2007. The higher value of the IQI implies better level of institutional quality (Basu, 2008).

The variable *CGER* measures combined gross enrolment ratio. CGER is constructed to define a possible measure of human capital. Human capital plays a major role in enhancing labour productivity and eventually the economic performance. Availability of skilled manpower eases resource constraints, makes productive capacities efficient, and thereby increases production and exports of skill and technology intensive manufactures. The measure comes from the UNESCO Education Database from 1995 to 2007.

In the extended model, we include two variables to broaden up the scope of supporting policies at the national and global level to help increase the trade integration process and subsequently improve GDP per capita.

The variable *PCRDBOFGD*P measures financial sector resource availability. *PCRDBOFGDP* is constructed to define a possible measure of size of financial system. The functioning of financial system and markets significantly affects economic performance. A well-functioning credit market can directly provide available funds/savings to where they can be invested most efficiently. The following variable is selected to reflect the domestic credit allocation condition for financial resource availability in private sector: the private credit by deposit money banks and other financial institutions as a percent of GDP is another. The higher value of the variable implies better access of a country's financial resources for commerce (World Bank, 2009). The measure comes from the World Bank Financial Structure Dataset from 1995 to 2007.

The variable *WAVG* measures effective foreign market access. *WAVG* is shown to define a possible measure of effective access to foreign markets. This measure tries to capture trade barriers faced in destination markets. For example, the trade-weighted average tariff that any country faces on international markets corresponds to the trade weighted average imposed by its trade partners. However, low tariff barriers in destination markets may not be a fully adequate guide to the openness of the markets of receiving countries. The following variable is selected to reflect the this market access: Trade-weighted average tariff applied on exports in partner countries (per cent) is the average of effectively applied rates by trading partners weighted by the total imports of trading partner countries. The higher value of the WAVG implies better access of a country's exports to the foreign markets (UNCTAD, 2007). The measure comes from the UNCTAD-TRAINS database from 1995 to 2007.

In figures 2–9, we present the graphs of nonparametric estimates of the density (pdf) function of all variables used in the paper. Using the methodology outlined in section 2.1, we estimate the pdf using data information of all countries used in the core and extended model, for the three years, 1995, 2003 and 2007. Thus, we are able to analyse how the functions change over the time period under consideration in the paper. All variables are in measured in logs. In figure 2, we look at the density function of the log of *GDPPCpenn*, the variable used to measure economic performance. The density function is bi-model and moves to the right from 1995 to 2007, as all countries have more income. Figures 3, 4 and 5 look at the density functions of the log of variables (*C/ D/ E) NSEXP*; used to measure the share of low/ medium/ high skill- and technology intensive manufactures in total merchandise exports. The pdf for log of share of low skill-technology manufactures in exports (*CNSEXP)* shifts downwards and to the left, the pdf for the log of share of medium skill-technology manufactures (D*NSEXP)* in exports shifts to the right and the density function for the log of share of high skill-technology manufactures (D*NSEXP)* in exports also shifts to the right and changes shape from a uni-modal to a bi-modal distribution. Overall, we observe that during the period 1995 – 2007, more countries had a high share of high to medium skill-technology manufactures in exports and more countries have a low share of low skill-technology manufactures in exports. Figure 6, illustrates the density function of the log of *IQI*, the index measuring institutional quality. Over time the pdf changes from a bi-modal to a uni-modal distribution. Thus, the distribution of IQI is likely to be log-normal. In figure 7, we see movements in the density function of log of *CGER*, variable measuring combined enrolment ratio or accumulation of human capital in the country. The density function moves upwards during the time period considered, as more countries have higher measures of human capital accumulation. The distribution of log of *PCRDBOFGD*P, variable measuring the size of the financial resources availability in the system, is illustrated in figure 8. We observe the estimated density function shifts downwards as fewer countries have large credit flows available in their economies. A similar trend is observed for log of *WAVG*, variable measuring effective access to foreign market access of their exports. The pdf shifts downwards and to the left. Over the time period 1995–2007, it seems through this measure that fewer countries have effective market access.

Figure 2: Nonparametric pdf Estimates for *lnGDPPCpenn*

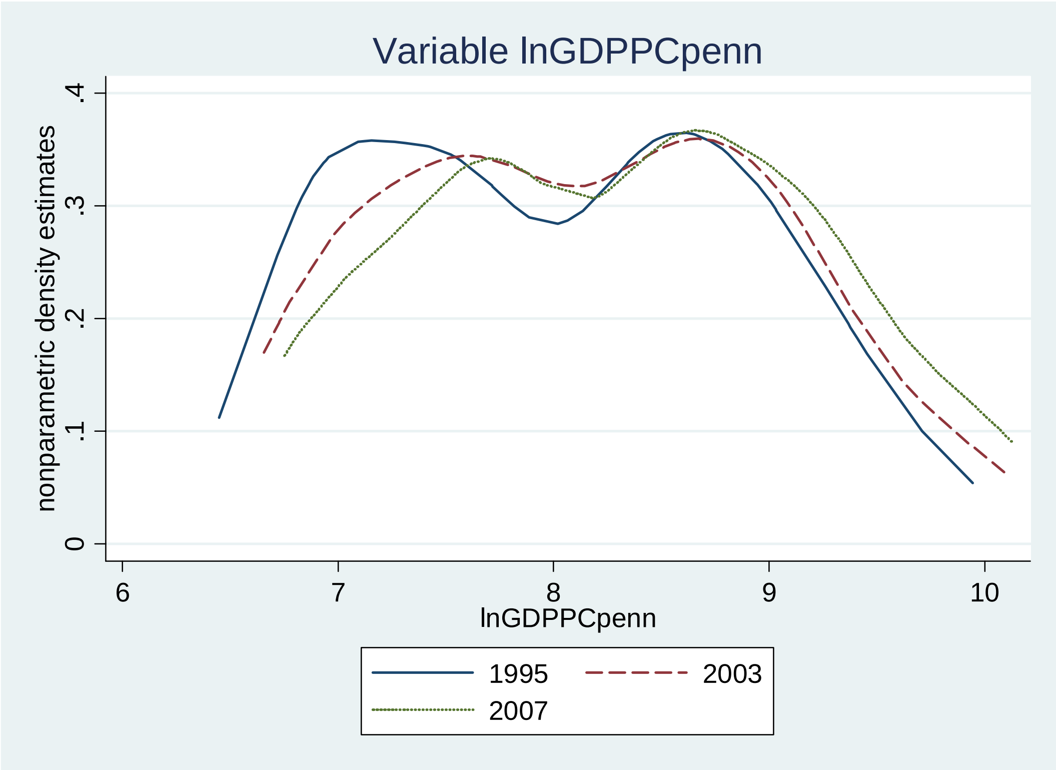


Figure 3: Nonparametric pdf Estimates for *lncnsexp*

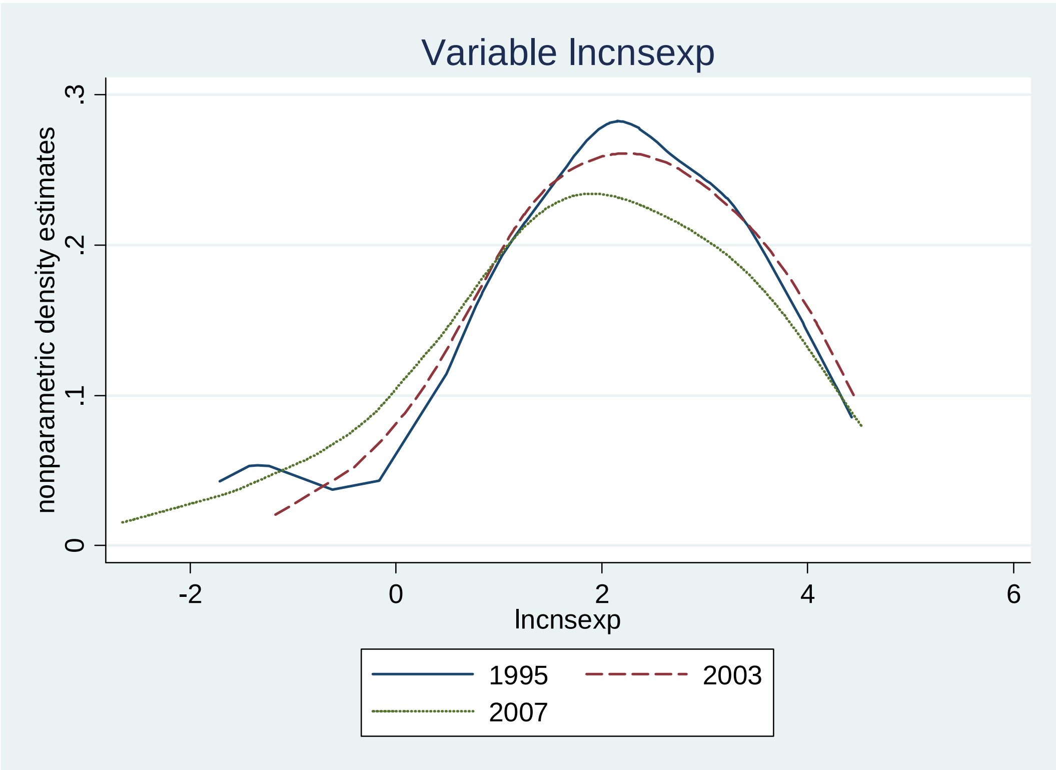


Figure 4: Nonparametric pdf Estimates for *lndnsexp*

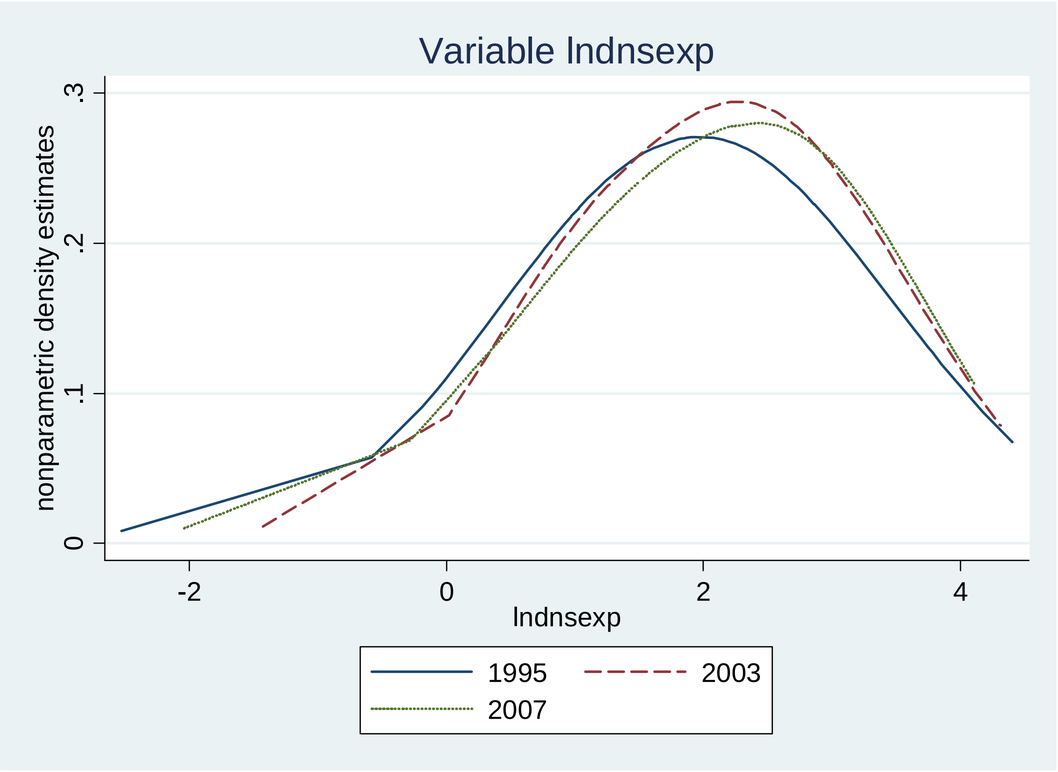


Figure 5: Nonparametric pdf Estimates for *lnensexp*

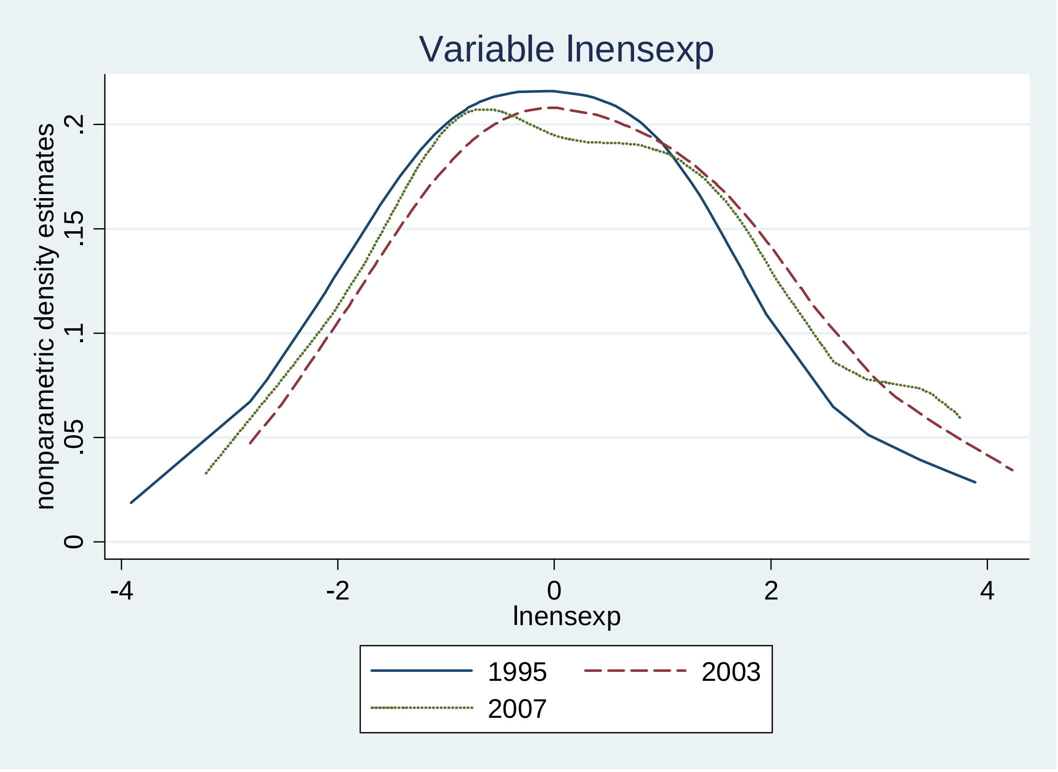


Figure 6: Nonparametric pdf Estimates for *lniqi*

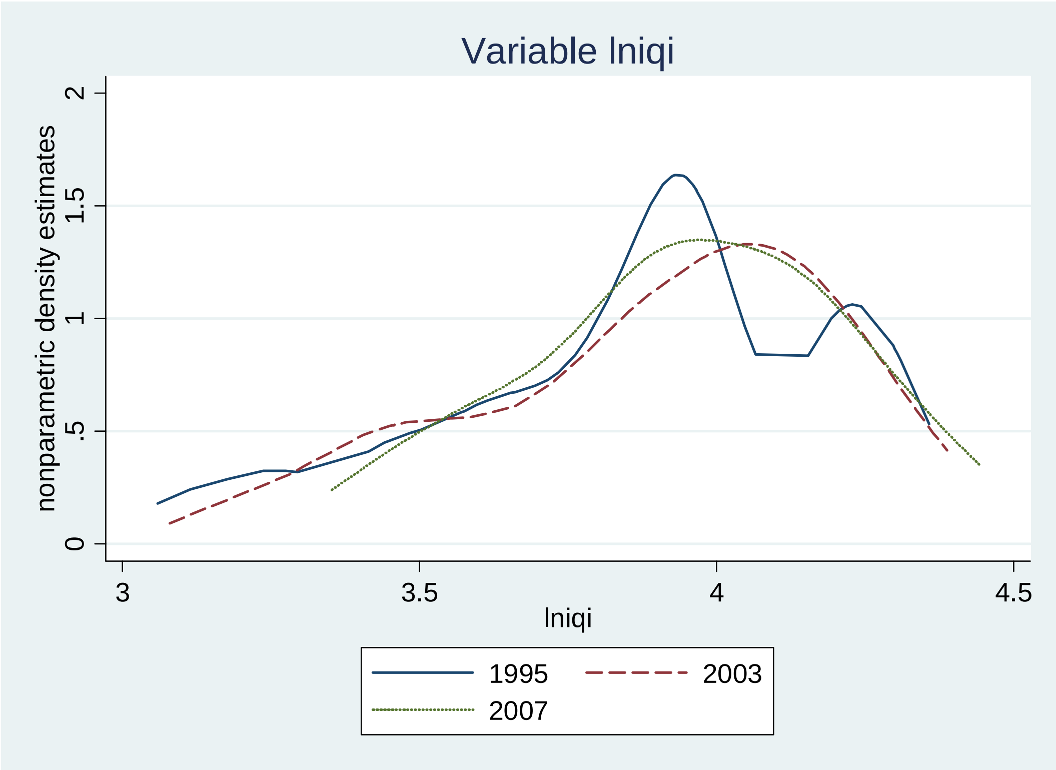


Figure 7: Nonparametric pdf Estimates for *lncger*

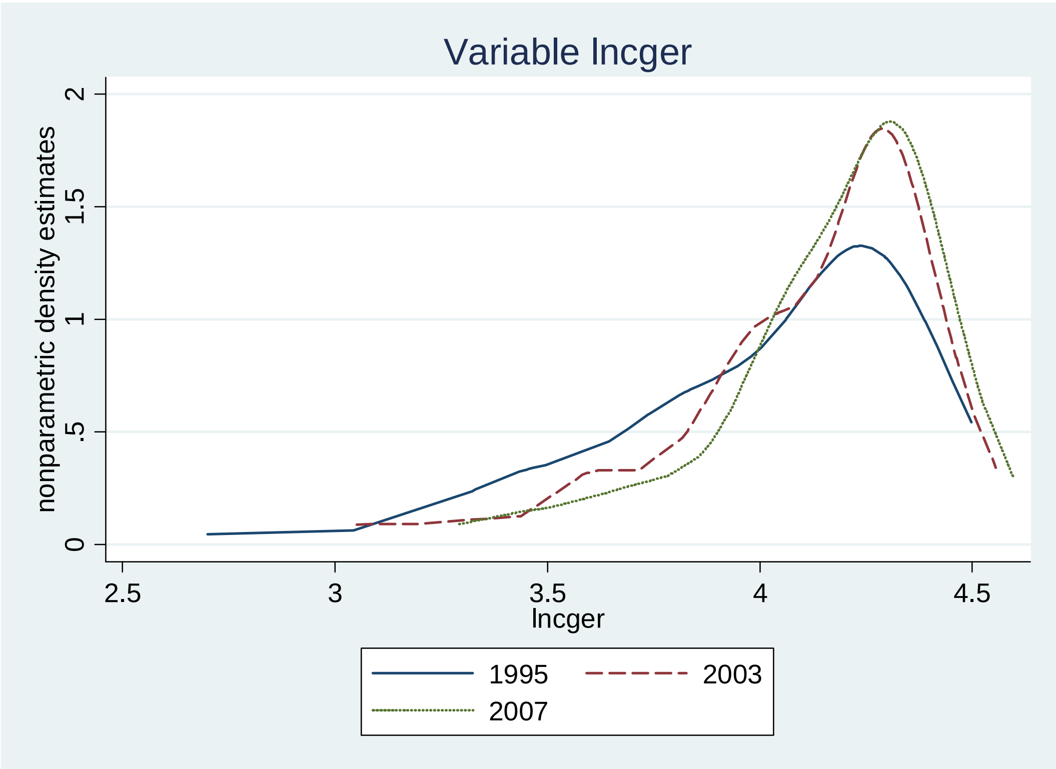


Figure 8: Nonparametric pdf Estimates for *lnpcrdbofgdp*

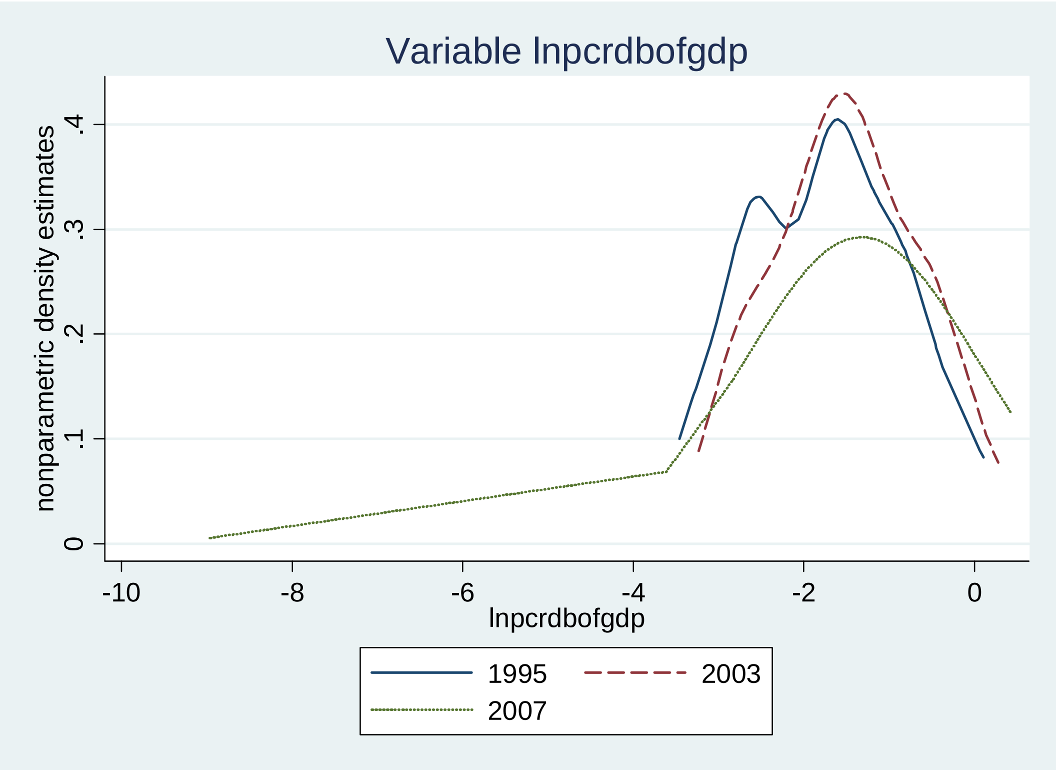
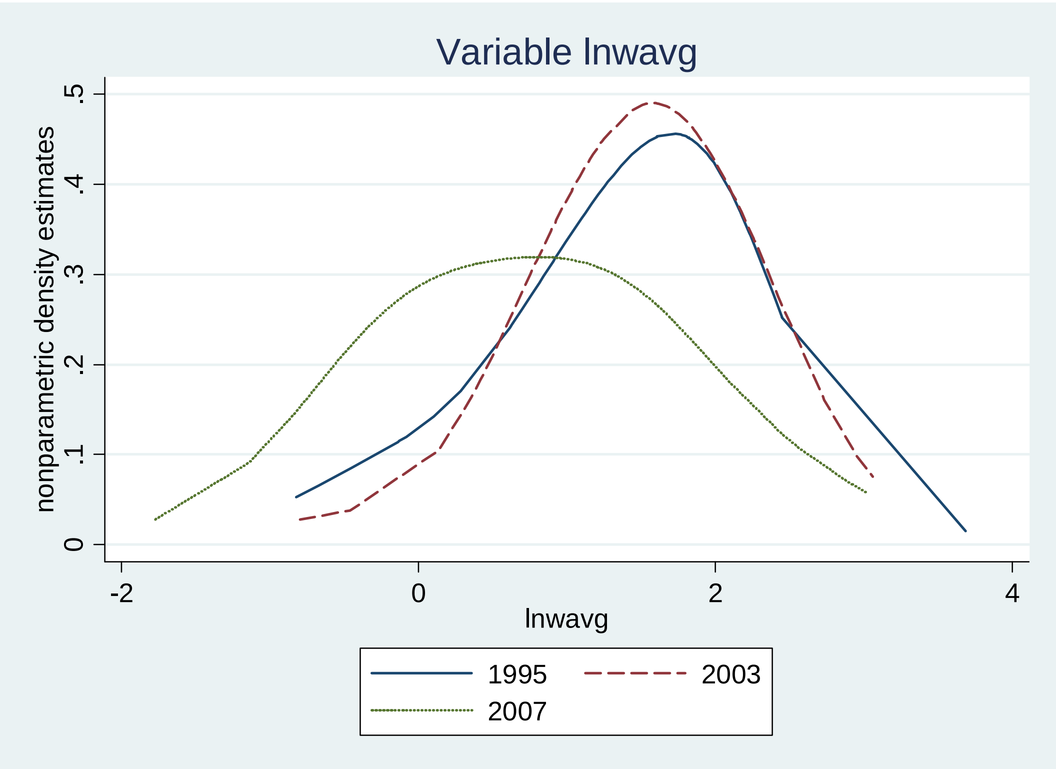


Figure 9: Nonparametric pdf Estimates for *lnwavg*



3.3 The Empirical Model

The main objective of our work is to examine the impact of three levels of exports based on skill and technology content of the products (low, medium and high) on GDP per capita (*GDPPCpenn*). In the core model specification, other covariates in the model are the institutional quality index (*IQI*) and the combined gross enrolment ratio (*CGER*). To capture the relationship between skill and technology contents of exports and GDP per capita, we replace a typical parametric model of the form,

$$lnGDPPCpenn_{it}=\beta_0+\beta_1 ln(C/D/E)NSEXP_{it}+\beta_2 lnIQI_{it}+\beta_3 lnCGER_{it}+\varepsilon_{it}$$

with the corresponding nonparametric model in equation (5). Here, *m(.)* is an unknown smooth function of the covariates, α_i are unobserved country characteristics that are constant over time. This flexible estimation strategy helps us avoid any functional form misspecification bias and enables us to explore the shape of the underlying relationship without superimposing any *a priori* functional form restriction.

$$lnGDPPC_{it}=m(\alpha_i,\ lnCNSEXP_{it},\ lnIQI_{it},\ lnCGER_{it}) \quad (5)$$

$$lnGDPPC_{it}=m(\alpha_i,\ lnDNSEXP_{it},\ lnIQI_{it},\ lnCGER_{it}) \quad (6)$$

$$lnGDPPC_{it}=m(\alpha_i,\ lnENSEXP_{it},\ lnIQI_{it},\ lnCGER_{it}) \quad (7)$$

We have also estimated the extended model to check the robustness of the variable of interest, along with two additional covariates such as *PCRDBOFGDP* and *WAVG* apart from *IQI* and *CGER*.

$$lnGDPPC_{it}=m(\alpha_i,\ lnCNSEXP_{it},\ lnIQI_{it},\ lnCGER_{it},\ lnPCRDBOFGDP_{it},\ lnWAVG_{it}) \quad (8)$$

$$lnGDPPC_{it}=m(\alpha_i,\ lnDNSEXP_{it},\ lnIQI_{it},\ lnCGER_{it},\ lnPCRDBOFGDP_{it},\ lnWAVG_{it}) \quad (9)$$

$$lnGDPPC_{it}=m(\alpha_i,\ lnENSEXP_{it},\ lnIQI_{it},\ lnCGER_{it},\ lnPCRDBOFGDP_{it},\ lnWAVG_{it}) \quad (10)$$

This paper is based on 88 countries as shown in table A1. However, sample size differs due to availability of PCRDBOFGDP and WAVG which have data on 64 countries. We construct a panel of 1144 observations with all country-time combinations in the core model and 832 observations with all country-time combinations in the extended model.

4. Results

This section discusses results for the core empirical model and then describes results from the extended model as robustness check. In section 4.1, we initially discuss results from core model which has three main independent variables for the sample of 88 developing countries over the period of 1995–2007. The three independent variables are the (low/medium/high) skill and technology manufactures exports share of the total national exports of goods, measure of institutional quality and combined enrolment ratio The results also reported for three group of countries, namely (a) regional groupings as Asia, Americas and Africa; (b) emerging South and other developing countries; and (c) least developed countries and small island developing countries and other developing countries. In section 4.2, we discuss results for the extended model which then include two additional variables, *viz.,* measure of financial resource availability in the economy and effective market access index. The extended model consists of 64 developing countries due to lack of comparable data on two additional variables across the years and countries. All the variables are in logs (denoted here as prefix "*ln*" to all the variables). Hence, we can interpret all nonparametric as well as parametric estimates as measures of elasticity.

As noted earlier, the nonparametric estimation technique gives us an estimate of the value of the regression function (the conditional moment) and its slope at every country-time period combination. To help us with the analysis and interpretation of results, we provide the slope estimates at the 25th, 50th and 75th percentiles (labeled quartiles 1, 2 and 3 or Q1, Q2 and Q3) and their standard errors obtained via bootstrapping. For comparison we also state the results from a similar parametric model. The table also indicates which estimates are significant at the 90 per cent, 95 per cent or 99 per cent confidence level. To explore the relationship between exports with low, medium and high skill and technology manufactures and GDP per capita along with other independent variables, we show the results in the tables below. Hence all nonparametric as well as parametric estimates measure elasticity of the dependent variable with respect to the independent variable.

4.1 Core Model Results

We now show the relationship between *(C/D/E) NSEXP* and GDP per capita. Tables 1 to 6 show a set of nonparametric estimates in which GDP per capita is regressed on values of (*C/D/E) NSEXP* and IQI (institutions) and CGER (human capital) as regressors.

Table 1 displays the nonparametric estimates of the responsiveness of GDP per capita to changes in CNSEXP, DNSEXP and ENSEXP. More specifically, the first column of tables 1.a to 1.c measures the percentage change in GDP per capita when skill and technology content of manufactures exports changes by 1 per cent, i.e. the export elasticity.

For CNSEXP, at the first quartile, the nonparametric estimate of the impact CNSEXP on GDPPCpenn is -0.059 (0.011), which is statistically significant at the 1 per cent level. At the median, the impact is negative, - 0.006 (0.001), also significant. Finally, at the 75th percentile, the nonparametric estimate is positive significant at the 1 per cent level (0.029 (0.002)). For the overall sample, we can note that for more than 50 per cent of the country-year observations, the low skill and technology content manufactures export elasticity is negative.

*For DNSEXP, a*t the first quartile, the nonparametric estimate of the impact DNSEXP on GDPPCpenn is -0.032 (0.004), which is statistically significant at 1 per cent level. At the median, the impact is positive, 0.013 (0.003), but also significant. Finally, at the 75th percentile, the nonparametric estimate is positive significant at the 1 per cent level (0.082 (0.004)). For the overall sample, we can note that for more than 75 per cent of the country-year observations, the medium skill and technology content manufactures export elasticity is positive.

For *ENSEXP,* at the first quartile, the nonparametric estimate of the impact DNSEXP on GDPPCpenn is -0.004 (0.001), which is statistically significant at 5 per cent level. At the median, the impact is positive, 0.040 (0.002), also significant. Finally, at the 75th percentile, the nonparametric estimate is positive significant at the 1 per cent level (0.121 (0.005)). For the overall sample, we can note that for more than 75 per cent of the country-year observations, the high skill and technology content manufactures export elasticity is positive.

The estimated coefficient varies from -0.006 to 0.040, with *ENSEXP* impact estimates being larger than *CNSEXP* and *DNSEXP* estimates at the median. At the median of *ENSEXP* slope coefficient is 0.04 implies when the skill and technology content manufactures of exports increases by 10 per cent, GDP per capita increases by 0.40 per cent.

The second column of tables 1.a to 1.c measures the institutional elasticity or the percentage change in GDP per capita when institutional quality changes by 1 per cent. In all the three specifications, more than 75 per cent of the observations show a positive estimate of the institutional elasticity. Here, at the median of IQI slope coefficient is 0.16 (table 1.c) implies, controlled for the high skill and technology content manufactures of exports and education variables, when institutional quality increases by 1 per cent, GDP per capita increases by 0.16 per cent which is a large impact.

The third column of tables 1.a to 1.c measures the education elasticity or the percentage change in GDP per capita when education changes by 1 per cent. In all the three specifications, more than 75 per cent of the observations show a positive estimate of the educational elasticity. Here, at the median of CGER slope coefficient is 1.384 (table 1.c) implies, controlled for the high skill and technology content manufactures of exports and institutional quality variable, when combined school enrolment increases by 1 per cent, GDP per capita increases by 1.39 per cent which is also a large impact. All standard errors are obtained via bootstrapping and are provided in the parentheses below the estimates. So, the results in tables 1.a to 1.c shows that for three categories of exports contents, we can make two important observations. First, there is quite large evidence of a statistically significant, positive impact of high skill and technology content manufactures on development as compared to low and medium groups. Second, the effect of higher *NSEXP* is not uniform across country-time period combinations.

Tables 2.a to 2.c show the nonparametric median estimates of the responsiveness of GDPPCpenn to changes in (C/D/E) NSEXP for each country.

For CNSEXP at the median, Uruguay has the highest positive and significant estimate of $\partial GDPPCpenn/\partial CNSEXP$, while Malaysia has the highest negative and significant estimate. Among 88 countries, 39 countries have positive median estimates and 49 have negative median estimates. In the case of IQI, 58 countries have positive median estimates and 30 countries have negative median estimates. For CGER, 62 countries have positive median estimates and 26 have negative median estimates.

For DNSEXP at the median, Malaysia has the highest positive and significant estimate of $\partial GDPPCpenn/\partial DNSEXP$, while Peru has the highest negative and significant estimate. Among 88 countries, 53 countries have positive median estimates and 35 have negative median estimates. In this case, IQI in 59 countries have positive median estimates and 29 countries have negative median estimates. For CGER, 64 countries have positive median estimates and 24 have negative median estimates.

For ENSEXP at the median, Malaysia has the highest positive and significant estimate of $\partial GDPPCpenn/\partial ENSEXP$, while Philippines has the highest negative and significant estimate. Among 87 countries (data on Seychelles is missing), 66 countries have positive median estimates and 21 have negative median estimates. Similarly, IQI in 58 countries have positive median estimates and CGER in 77 countries have positive median estimates respectively.

Table 3 presents the median elasticities by time periods to access any changes in the *GDPPCpenn*- C/D/E) NSEXP relationship over time. Table 3.a shows that for every time period, the median nonparametric estimate of the slope of the *GDPPCpenn*- CNSEXP function is negative but statistically insignificant, although in values, the median elasticities have not been stable over time. The *GDPPCpenn*- IQI function is positive and statistically significant over time as well as the function of *GDPPCpenn-CGER.*

Table 3.b shows the *GDPPCpenn-* DNSEXP function is positive and statistically significant in some years. The values of median elasticities remained within the range of 0.010 and 0.017 over time which is much higher than median elasticties of *GDPPCpenn-* CNSEXP.

Table 3.b presents the median elasticities by time periods to access any changes in the *GDPPCpenn-* ENSEXP relationship over time has increased positively and statistically significant in all the 13 years. It is also worth noting that their absolute values are in the range of 0.026 and 0.063 (in 2007). In summary, we can make observation that the impact of high skill and technology content manufactures exports on GDP per capita has increased over time as compared to two other groups of products.

The nonparametric estimate of the regression function or the slope at any observation is a weighted average, where the weights are determined by the closeness of other data points to that observation. Also, he nonparametric estimates are calculated at every data point, so we are able to examine the nonparametric slope estimates for various subgroups. We examine median estimates for three continents: (a) Asia, (b) Americas and (c) Africa. Tables 4.a to 4.c show the nonparametric median estimates of the responsiveness of GDPPCpenn to changes in (C/D/E) NSEXP for each continents. At the median, estimate of the slope of the *GDPPCpenn-* CNSEXP function is negative and statistically significant for Asia [-0.027(0.011)] and Americas [-0.010 (0.002)], and then impact is positive but insignificant [0.001(.001)] for Africa. Table 4.a also shows that institutions have positive and significant impact in Americas and Asia, while educational achievements have positive and significant impact in all continents.

In the case of GDPPCpenn- DNSEXP estimates at the median, all the continents have positive and statistically significant impact with largest impact on DNSEXP on GDP per capita is in Americas [0.031 (0.004)]. The results for IQI and CGER are similar as in the case of GDPPCpenn- CNSEXP functional estimates as in table 4.a.

Interestingly, estimate of the slope of the *GDPPCpenn-* ENSEXP function is positive and statistically significant for Asia [0.0 61(0.008)], followed by Americas [0.0 55(0.005)] and Africa [0.025(0.003)]. Once again, for these continents, there is strong evidence of a statistically significant positive relationship between *GDPPCpenn and* ENSEXP as compared to CNSEXP and DNSEXP.

It should also be noted that IQI impact is largest in Americas on GDPPDpenn (table 4.c, 0.644) compared to Asia and Africa. Whereas in the case of CGER, for all the continents, it has a positive and significant impact on GDPPCpenn and is largest in Asia (table 4.c, col. 3, 2.030).

Tables 5.a to 5.c show estimated results for two different country groups distinguished by their growing importance in the world economy: emerging countries and other developing countries at the median. For CNSEXP, impact is negative but significant for both the country groups. However, the impact is positive and statistically significant for DNSEXP and ENSEXP. The higher shares of medium and high skill technology intensive manufactures tend to have higher positive and significant impact for the emerging South countries.

Tables 6.a to 6.c present estimates separately for two country groups distinguished by income levels: least developed countries and small island developing countries (LDCSIDS) and non LDCSIDS. Like before, impact of DNSEXP and ENSEXP is positive and statistically significant in the case of both groups and estimated coefficient is much higher of ENSEXP in non-LDCSIDS compared to LDCSIDS group of countries. IQI and CGER have positive and significant impact on GDPPCpenn for both groups of countries.

To summarize the effects of CNSEXP, DNSEXP and ENSEXP covariates, we note the following: the nonparametric estimate of ∂*GDPPCpenn/*∂CNSEXP is negative and significant and that of *∂GDPPCpenn/∂ DNSEXP* is positive and significant at the median. The median nonparametric estimate of responsiveness of *∂GDPPCpenn/∂* ENSEXP is positive and significant for the entire dataset and different country groups and years under consideration. The higher values of the estimated elasticities for ENSEXP suggest that high skill and technology intensive manufactures have higher impact on GDP per capita than low and medium skill and technology intensive manufactures in contributing the path of development of a country.

Also, the effects of the remaining covariates, *∂GDPPCpenn/∂* IQI and *∂GDPPCpenn/∂* CGER are mostly positive and significant in influencing GDP per capita in this current sample.

In addition, if we look at the estimates for the entire dataset, the parametric estimate of the impact of CNSEXP, DNSEXP and ENSEXP on *GDPPCpenn* are always positive and statistically significant and their estimated slope coefficient varies from 0.058 (CNSEXP) to 0.196 (DNSEXP), with 0.151 for ENSEXP. Also, the parametric estimates lie above third quartile of the nonparametric estimates and are multiple times as large as the median of the nonparametric estimates. It is clear that parametric estimates are global estimates whereas nonparametric estimates are locally weighted, vary across the observations and give a broader picture of the *GDPPCpenn*- (C/D/E) NSEXP relationship. The *∂GDPPCpenn/∂* IQI and *∂GDPPCpenn/∂* CGER have positive and significant impact on GDP per capita as well likewise in the case of nonparametric estimates.

Furthermore, any discrepancy between the signs of the parametric and nonparametric estimates may arise due to two types of biases: a misspecification bias and an endogeneity/omitted variable bias. The parametric model potentially suffers from both, the nonparametric model potentially suffers only from the second type of bias. Thus, it is the misspecification bias and its interaction with the endogeneity bias that drives the differences across the two estimation techniques. Nonparametric instrumental variable techniques are not fully developed and will be explored in our future research.

4.2 Extended Model Results: Robustness Checks

In this section, we include two additional variables, as has been used in the literature, to test the robustness of results in tables 1.a to 1.c. The objective here is to cross check to (a) resource availability from financial sector (PCRDBOFGDP) institutions such as banks and (b) effective foreign market access (WAVG) – as an exogenous variable − play a role in influencing GDP per capita other than through level of skill and technology intensive manufactures exports, institutional quality and combined gross enrolment. We run these model specifications for the sample of 64 developing countries from the core model sample as the data is not consistently available for PCRDBOFGDP and WAVG.

Tables 7.a to 7.c examines the impact of PCRDBOFGDP and WAVG on *GDPPCpenn* for countries with three different types of skill and technology intensive manufactures exports. It displays the 25th, 50th and 75th percentiles of all nonparametric estimates. More than 50 per cent of the nonparametric estimates of the impact of PCRDBOFGDP on *GDPPCpenn* are significant positive in all the three types of exports structure. For all three levels of export structures at the 75th percentile, the nonparametric estimate of *WAVG*-GDPPCpenn relationship is positive significant at the conventional levels. It appears that the majority of the countries have not been able to completely take advantage of the effective foreign market access (and preferences) in favorably influencing the development paths of their economies. On the other hand, the results clearly indicate that efficient functioning of the financial market and credit flows for business sector development is critical ingredient to increase the level of GDP per capita in all countries over the time period. More importantly, the level of skill and technology intensity manufacture exports still matters for improving the level of GDP per capita, along with a strong institutional structure and educational level.

Table 8 shows the impact of all the five covariates at the median for all the countries in the sample with the high skill and technology intensive manufacture exports share. [8] The results suggest that for a 60 per cent of the country-time period observations, the relationship between ENSEXP and GDP per capita is significant positive, while 70 per cent of cases are for PCRDBOFGDP and only 23 per cent for WAVG. The relationship between CGER and GPPPCpenn is the strongest (77 per cent) and followed by IQI (59 per cent). So, the country level results also show that higher level of skill and technology contents of exports matter to improve the GDP per capita along with good institutions, human capital and financial markets. Tables 9.a to 9.c present results of the nonparametric estimates at the median by year for all the covariates. The results provide further support a positive impact of ENSEXP on GDP per capita along with other covariates except for WAVG.

Likewise in core model (table 4), we now present the results by region. The new set of results in tables 10.a to 10.c indicate that the impact of CNSEXP and DNSEXP on GDP per capita is positive significant Africa, along with institutions, human capital and financial credit flows. The effective foreign market access is positive and significant in the specification with DNSEXP in African countries. It seems that the level of effective foreign market access to these low-income countries has not been uniform across all sectors and their impact is also dispersed across countries with the regions. In the case of Americas, the results show that their increasing share in ENSEXP has been helping them to improve their GDP per capita along with support from human capital, institutions and financial resource availability. The impact of ENSEXP on GDP per capita is positive in Asia but not significant while human capital and efficient financial market activities have positive and significant impact on their economic development.

A similar set of results are obtained in tables 11.a to 11.c in the case of emerging South countries in comparison to other south countries in the sample. It clearly shows that emerging south countries have transformed their exports structure from low skill and technology contents exports to higher level of products to raise their level of GDP per capita. Another set of results for LDCSIDS indicate that WAVG has positive and significant impact on GDP per capita in the case of DNSEXP and ENSEXP of specifications which implies that highly targeted preferential foreign market access of LDCSIDS exports products, especially in developed market could help them to influence their GDP per capita as shown in tables 11.a to 11.c. It also appears that for $\partial GDPPCpenn/\partial$ ENSEXP in LDCSIDS is positive and significant in this extended model. This implies that the countries in LDCSIDS group when undertake policies to improve their export structure for more sophisticated products, could potentially improve their GDP per capita effectively as was shown in the case of core model (table 6c).

[8] We report only the median nonparametric estimates of ENSEXP for brevity. More detailed nonparametric results for DNSEXP and CNSEXP and the remaining covariates are available if requested from the authors.

5. Conclusions

The impact of high skill and technology intensive manufactures exports on economic performance has enormous implications for development policy makers and international agencies to achieve the Millennium Development Goals (MDGs). In this paper, we reassess the relationship between three levels of skill and technology contents of manufactures and GDP per capita by utilizing the Li–Racine methodology.

We examine here a dataset of 88 developing countries over the 1995–2007 time period. There is strong evidence of a statistically significant, positive impact of high skill and technology content products on GDP per capita. It's worth noting that the nonparametric estimates are far from uniform over all country-time period combinations.

The paper also offers a closer look of the impact on institutional quality, human capital on GDP per capita for various country-groups in the core model. The extended model also provides evidence that a flow of credit and well function financial markets are essential to support higher level of economic performance. We also found that effective market access for products from Africa and low income economies have been helpful to enhance their export capacity vis-à-vis GDP per capita. Due to differences in level of economic development in Asia and the Americas, a majority of the countries have not been, a first look at the evidence, beneficial of the foreign market access of their products.

The results of the nonparametric model of our paper support the notion that in general the higher level of skill and technology intensive manufactures could help increase GDP per capita in developing countries. Our paper supports the view that countries with higher quality of exports product along with better institutional quality, human capital and financial markets are in a better position to reap benefits from trade integration and economic policies. On the other hand, countries with low skill and technology related products with weak institutional quality, lower level of human capital and lack of financial resources find it difficult to enhance their economic performance level. Overall, our empirical evidence indicate that effective support to the exports sectors, which has competitive advantage to enhance their capability to produce high quality and skill and technology content exports. Developing countries should underscore the urgent need for trade-policy support along with emphasizing on augmenting domestic investment for high quality of human capital development and increasing institutional efficiency as a necessary component to improve productive capacity for harmonious economic development.

References

Acemoglu D, Johnson S and Robinson J (2001). The colonial origins of comparative development: An empirical investigation. *American Economic Review.* 91 (5): 1369–1401.

Aitchison J and Aitken CGG (1976). Multivariate Binary Discrimination by Kernel Method, *Biometrika*, Vol 63 (3), 413 – 420.

Anderson TW (1984). *An Introduction to Multivariate Statistical Analysis*, 2nd Edition. JohnWiley and Sons. New York.

Basu SR, Klein LR and Nagar AL (2005). Quality of Life: Comparing India and China,The paper presented at Project LINK meeting, 1 November 2005, United Nations Office at Geneva.

Basu SR (2007). The E7 in international trade: Dynamism and cooperation*,* paper presented at the Project LINK International Meeting, Chinese Academy of Social Sciences, Beijing, China, 14–17 May 2007.

Basu SR (2008). A new way to link development to institutions, policies and geography. *Policy Issues in International Trade and Commodities.* United Nations publication. UNCTAD/ITCD/TAB/38. New York and Geneva.

Basu SR (forthcoming). Retooling Trade Policy in Developing Countries: Does Technology Intensity of Exports Matter for GDP Per Capita? *Policy Issues in International Trade and Commodities.* United Nations publication. UNCTAD/ITCD/TAB/. New York and Geneva.

Cingranelli-Richards (CIRI) Human Rights Dataset. http://ciri.binghamton.edu/.

Dollar D and Kraay A (2003). Institutions, trade and growth: revisiting the evidence. Policy research working paper no. 3004. World Bank.

Easterly W and Levine R (2003). Tropics, germs, and crops: how endowments influence economic development. *Journal of Monetary Economics.* 50 (1): 3–39.

Hausmann R and Klinger B (2006). Structural transformation and patterns of comparative advantage in product space. CID Working Paper, No. 128. Cambridge, Massachusetts: Harvard University, Center for International Development.

Hausmann R, Hwang J and Rodrik D (2006). What you Export Matters, NBER Working Paper No. 11905.

The Heritage Foundation and The Wall Street Journal. Index of Economic Freedom. http://www.heritage.org/research/features/index/.

Henisz WJ. The Political Constraint Index (POLCON) Dataset.

Imbs J and Wacziarg R (2003). Stages of diversification. *American Economic Review.* Vol. 93, No. 1 (March), 63-86.

Klinger B (2009) Is South-South Trade a Testing Ground? *Policy Issues in International Trade and Commodities.* United Nations publication. UNCTAD/ITCD/TAB/40. New York and Geneva.

Lall S (2000). Selective industrial and trade policies in developing countries: theoretical and empirical issues. QEH Working Paper, No. 48. Oxford, United Kingdom: Queen Elizabeth House, University of Oxford. August.

Lall S, Weiss J and Zhang J (2005). The "Sophistication" of Exports: A new Measure of Product Characteristics, *QEH Working Paper Series,* 123.

Li Q and Racine J (2004). Cross-Validated Local Linear Nonparametric Regression, *Statistica Sinica*, Vol 14 (2), 485 – 512.

Nagar AL and Basu SR (2002). Weighting socio-economic variables of human development: A latent variable approach. In: Ullah A et al., eds. *Handbook of Applied Econometrics and Statistical Inference.* New York. Marcel Dekker.

Pagan A and Ullah A (1999). *Nonparametric Econometrics*. New York. Cambridge University Press.

Polity IV Project. Political Regime Characteristics and Transitions, 1800-2008, by M.G. Marshall, K. Jaggers, and T.R. Gurr.

PRIO (International Peace Research Institute). Vanhanen's index of democracy. http://www.prio.no/CSCW/Datasets/Governance/Vanhanens-index-of-democracy/.

PRS Group. International Country Risk Guide. http://www.prsgroup.com/ICRG.aspx.

Racine J and Li Q (2004). Nonparametric Estimation of Regression Functions with both Categorical and Continuous data, *Journal of Econometrics*, Vol 119 (1), 99 – 130.

Rodrik D, Subramanian A and Trebbi F (2004). Institutions rule: The primacy of institutions over geography and integration in economic development. *Journal of Economic Growth*. 9 (2): 131–165.

Rodrik D (2007). Industrial development: some stylized facts and policy directions. *In Industrial Development for the 21st Century: Sustainable Development Perspectives*. United Nations publication, New York.

Shirotori M, Tumurchudur B and Cadot O (2010). Revealed Factor Intensity Indices at the Product Level, P*olicy Issues in International Trade and Commodities.* United Nations publication. UNCTAD/ITCD/TAB/44. New York and Geneva.

Sachs J (2003). Institutions don't rule: Direct effects of geography on per capita income. Working paper no. 9490. National Bureau of Economic Research.

Silverman BW (1986). Density Estimation for Statistics and Data Analysis, Chapman Hall, New York.

UNCTAD (1996). Trade and Development Report, 1996: Developing Countries in World Trade. New York and Geneva.

UNCTAD (2002). Trade and Development Report, 2002: Developing Countries in World Trade. New York and Geneva.

UNCTAD (2007). Developing Countries in International Trade: Trade and Development Index. New York and Geneva.

UNCTAD (2009). *Global economic crisis: implications for trade and development, Report* by the UNCTAD secretariat, TD/B/C.I/CRP.1, Trade and Development Board, Trade and Development Commission, First session, Geneva, 11–15 May 2009

UNCTAD: Trade Analysis and Information System (TRAINS), database, http://r0.unctad.org/trains_new/index.shtm.

United Nations, Department of Economic and Social Affairs (UN–DESA) (2006). World Economic and Social Survey 2006: Diverging Growth and Development. New York

United Nations, Department of Economic and Social Affairs (UN–DESA) (2010). World Economic and Social Survey 2010: Retooling Global Development. New York.

United Nations Economic Commission for Africa (2007). Economic Report on Africa 2007: Accelerating Africa's Development through Diversification. Addis Ababa, Ethiopia: UNECA.

World Bank (2009). Breaking into New Markets: Emerging Lessons for Export Diversification, eds. R. Newfarmer, W. Shaw and P. Walkenhorst. Washington, DC: World Bank.

List of tables

Table 1: Nonparametric First, Second and Third Quartile Estimates

Table 1.a: Low Skill- and Technology-Intensive Manufactures

	Dependent variable: GDP per capita (international $, 2005 Constant Prices)_ lnGDPPCPenn		
	lncnsexp	**lniqi**	**lncger**
	(1)	**(2)**	**(3)**
1st quartile	-0.059* (.011)	-0.060* (.005)	-0.159* (.034)
Median	-0.006* (.001)	0.086* (.004)	0.627* (.05)
3rd quartile	0.029* (.002)	0.316* (.021)	1.384* (.062)
Parametric	0.058* (.013)	0.295* (.051)	1.46* (.065)

Table 1.b: Medium Skill- and Technology-Intensive Manufactures

	Dependent variable: GDP per capita (international $, 2005 Constant Prices)_ lnGDPPCPenn		
	lndnsexp	**lniqi**	**lncger**
	(1)	**(2)**	**(3)**
1st quartile	-0.032* (.004)	-0.056* (.009)	-0.018 (.063)
Median	0.013* (.003)	0.119* (.011)	0.737* (.041)
3rd quartile	0.082* (.004)	0.324* (.017)	1.478* (.069)
Parametric	0.196* (.014)	0.249* (.249)	1.34* (.061)

Table 1.c: High Skill- and Technology-Intensive Manufactures

	Dependent variable: GDP per capita (international $, 2005 Constant Prices)_ lnGDPPCPenn		
	lnensexp	**lniqi**	**lncger**
	(1)	**(2)**	**(3)**
1st quartile	-0.004** (.001)	-0.109* (.018)	0.466* (.026)
Median	0.040* (.002)	0.160* (.018)	1.384* (.047)
3rd quartile	0.121* (.005)	0.623* (.022)	2.211* (.055)
Parametric	.151* (.011)	.348* (.048)	1.31* (.062)

Notes: Standard errors are in parentheses.
Standard errors of nonparametric estimates are obtained from bootstrapping (seed 10101)
* significant at 1% level, ** significant at 5% level, *** significant at 10% level.

Table 2: Nonparametric Median Estimates by Country

Table 2.a: Low skill- and Technology-Intensive Manufactures

	Dependent variable: GDP per capita (international $, 2005 Constant Prices)_ lnGDPPCPenn					
ccode	**lncnsexp**	**se**	**lniqi**	**se**	**lncger**	**se**
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
AFG	-0.082	.054	0.084*	.003	-0.423	.435
ARG	-0.414*	.014	0.983*	.018	1.305*	.001
BDI	0.002*	.000	0.000	.020	-0.375*	.056
BEN	-0.018	.019	-0.019*	.003	0.280*	.071
BFA	0.133*	.007	0.363*	.016	0.806*	.071
BGD	0.097*	.002	-0.089*	.001	1.953*	.006
BHS	-0.018*	.000	0.034	.036	1.449*	.064
BLZ	-0.008*	.000	0.166*	.016	1.964*	.02
BOL	-0.116*	.000	0.056*	.002	0.902*	.008
BRA	-0.097*	.001	0.542*	.005	-0.620*	.007
BTN	-0.001	.001	0.493*	.056	2.260*	.064
CAF	0.036*	.000	0.090*	.001	0.374*	.009
CHL	-0.022*	.003	-0.046*	.000	3.326*	.015
CHN	-0.125*	.026	0.208*	.005	13.121*	.163
CIV	0.192*	.000	0.050*	.002	-0.338*	.002
CMR	-0.040*	.001	-0.136*	.019	0.259*	.004
COL	0.045*	.000	0.238*	.000	1.092*	.000
COM	0.009*	.000	0.088*	.005	-0.166*	.009
CPV	-0.043*	.000	1.4*	.001	3.122*	.011
CRI	0.031*	.001	1.539*	.001	1.873*	.008
CUB	0.006*	.000	0.204*	.005	1.288*	.012
DJI	0.026*	.009	-1.210*	.164	0.027	.037
DMA	-0.063*	.000	-0.070*	.011	-1.16*	.017
DOM	0.044*	.006	0.897*	.037	1.512*	.126
EGY	-0.183*	.001	0.080*	.0001	-0.5*	.019
ERI	-0.039*	.007	0.02	.02	-0.475*	.06
ETH	0.097***	.052	0.187*	.041	0.263	.293
FJI	-0.046*	.000	0.02*	.001	-0.015	.019
GHA	-0.036*	.001	0.007*	.002	1.412*	.029
GIN	0.003	.005	0.035	.047	0.431**	.174
GMB	-0.012*	.000	-0.034*	.001	1.028*	.012
GNB	-0.007*	.000	0.41*	.001	-10.516*	.086
GRD	-0.042*	.000	1.912*	.000	2.114*	.030
GTM	0.002*	.000	0.121*	.015	0.485*	.006
GUY	0.054*	.008	0.169*	.045	-0.1648	.011
HND	0.032*	.001	0.404*	.009	1.242*	.005
IDN	-0.210*	.022	-0.218*	.033	1.005*	.041
IND	0.046	.054	-0.104*	.008	1.923*	.093
JAM	-0.011*	.000	0.240*	.000	0.014	.027
JOR	0.029*	.000	-0.151*	.000	1.123*	.011
KEN	0.004*	.000	-0.026*	.008	0.280*	.000
KHM	0.090*	.024	-0.148	.134	2.03*	.016
KNA	-0.02*	.007	0.352*	.006	-0.947*	.006
KOR	0.003	.008	-0.456*	.005	4.126*	.072

	Dependent variable: GDP per capita (international $, 2005 Constant Prices)_ lnGDPPCPenn					
ccode	**lncnsexp**	**se**	**lniqi**	**se**	**lncger**	**se**
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
LAO	-0.094*	.001	-0.050*	.011	3.091*	.024
LBN	0.139*	.002	-0.060*	.001	0.543*	.015
LBR	0.04	.037	-0.207	.18	1.349*	.395
LKA	-0.027*	.004	-0.834*	.002	-1.636*	.009
LSO	-0.12*	.008	0.574*	.047	0.616*	.098
MAR	-0.008	.009	0.272*	.023	0.556*	.038
MDG	0.009	.015	0.254*	.071	-0.387*	.094
MEX	0.044**	.019	0.355*	.001	1.215*	.048
MLI	0.025*	.004	0.447*	.057	0.539*	.052
MNG	-0.040*	.005	-0.119*	.019	0.922*	.017
MOZ	0.006	.037	0.177*	.026	1.259*	.076
MUS	0.209*	.012	0.302*	.022	3.193*	.033
MWI	-0.091*	.017	-0.154	.136	-0.95*	.103
MYS	-0.517*	.002	0.009*	.001	2.919*	.010
NAM	0.084*	.000	-0.581*	.000	-0.468*	.000
NER	0.003**	.001	-0.068*	.016	0.07*	.013
NIC	-0.007**	.003	-0.116*	.02	0.648*	.023
NPL	-0.099*	.006	-0.064*	.001	0.758*	.004
PAK	0.034*	.011	0.068*	.024	0.992*	.053
PAN	-0.328*	.022	0.643*	.029	-0.865*	.218
PER	-0.403*	.000	0.488*	.000	-0.992*	.014
PHL	-0.252*	.000	-0.382*	.001	-2.432*	.041
PRY	-0.005*	.000	0.111*	.005	-0.615*	.007
RWA	-0.004*	.000	0.248*	.002	-0.063*	.005
SEN	0.021*	.002	0.018*	.006	0.381*	.011
SLB	-0.18*	.008	0.327*	.006	-1.651*	.058
SLV	-0.036*	.003	0.214*	.012	0.812*	.003
STP	-0.009*	.000	0.357*	.010	1.649*	.036
SUR	0.007*	.000	0.274*	.000	-3.482*	.02
SYC	0.034*	.000	0.669*	.003	1.343*	.013
TCD	-0.087*	.000	-0.569*	.032	1.085*	.034
TGO	-0.144*	.000	0.140*	.001	0.610*	.000
TON	0.01*	.000	0.079*	.002	-0.124*	.002
TUN	-0.004**	.001	0.086*	.001	6.67*	.004
TUR	-0.279*	.009	-0.088*	.009	0.161*	.062
TZA	0.042	.028	-0.09*	.031	0.587*	.013
UGA	0.059*	.000	-0.034*	.002	1.124*	.018
URY	0.612*	.005	0.256*	.002	4.242*	.047
VCT	-0.038*	.000	0.436*	.010	4.801*	.000
VNM	0.015*	.006	-0.122*	.002	13.874*	.027
WSM	-0.004*	.000	0.496*	.000	0.518*	.004
ZAF	-0.007*	.002	-0.069*	.005	-4.415*	.031
ZMB	-0.129*	.025	0.214*	.089	1.283*	.071
ZWE	-0.277*	.002	1.264*	.002	-4.08*	.015

Notes: Standard errors are in parentheses.
Standard errors of nonparametric estimates are obtained from bootstrapping (seed 10101)
* significant at 1% level, ** significant at 5% level, *** significant at 10% level.

Table 2.b: Medium Skill- and Technology-Intensive Manufactures

	Dependent variable: GDP per capita (international $, 2005 Constant Prices)_ lnGDPPCPenn					
ccode	**lndnsexp**	**se**	**lniqi**	**se**	**lncger**	**se**
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
AFG	-0.096*	0.012	0.179**	.078	-1.324*	0.22
ARG	0.395*	.005	0.760*	.018	1.879*	.036
BDI	0.008**	.003	-0.018	.013	-0.447*	.107
BEN	0.030	.020	0.013	.029	0.222*	.012
BFA	0.140*	.012	0.053**	.024	0.901*	.084
BGD	-0.016*	.001	-0.088*	.001	1.949*	.017
BHS	0.301*	.004	0.526*	.055	1.495*	.105
BLZ	-0.024*	.000	0.217*	.027	1.965*	.041
BOL	-0.077*	.001	-0.072*	.003	0.771*	.006
BRA	-0.074*	.005	0.810*	.000	-0.560*	.004
BTN	-0.067*	.001	0.359*	.072	2.459*	.088
CAF	-0.002*	.000	0.078*	.001	0.503*	.002
CHL	0.099*	.007	0.102*	.011	3.457*	.012
CHN	0.320*	.037	0.189*	.007	13.252*	.047
CIV	-0.022*	.000	0.405*	.007	-1.075*	.033
CMR	-0.029**	.012	-0.072*	.004	0.314*	.096
COL	0.031*	.001	0.200*	.001	1.146*	.002
COM	-0.016*	.006	0.116*	.019	-0.124*	.039
CPV	0.006*	.000	1.403*	.010	2.913*	.080
CRI	0.083*	.001	1.439*	.089	1.742*	.042
CUB	-0.043*	.000	0.103*	.023	1.683*	.058
DJI	0.097*	.006	-1.727*	.222	-0.160*	.024
DMA	0.076*	.006	0.184*	.005	-0.649*	.035
DOM	0.064*	.008	0.861*	.056	0.860*	.211
EGY	-0.204*	.005	0.199*	.004	-2.095*	.005
ERI	-0.009	.009	0.060***	.033	-0.533*	.148
ETH	-0.001	.009	0.163	.110	0.412*	.097
FJI	0.050*	.000	-0.017*	.002	0.199*	.026
GHA	0.050*	.003	-0.006	.008	1.117*	.089
GIN	0.035	.069	0.100	.159	0.471**	.204
GMB	0.009*	.002	-0.019*	.004	1.074*	.025
GNB	0.010*	.000	0.406*	.001	-11.762*	.082
GRD	0.166*	.001	1.195*	.003	1.138*	.032
GTM	0.010*	.012	0.127*	.037	0.475*	.026
GUY	0.011*	.001	0.239*	.063	-0.169*	.017
HND	0.026*	.001	0.306*	.010	1.109*	.013
IDN	-0.209*	.008	-0.269*	.043	1.727*	.014
IND	0.281*	.049	-0.234*	.062	1.518*	.032
JAM	0.018**	.007	0.175*	.009	0.362*	.001
JOR	-0.25*	.008	0.008**	.004	0.696*	.049
KEN	0.027*	.002	-0.023	.026	0.260*	.012
KHM	-0.023	.017	0.077	.13	2.222*	.032
KNA	0.139*	.003	0.220*	.013	-0.894*	.049
KOR	0.271*	.000	-0.460*	.010	3.212*	.008
LAO	-0.074*	.000	0.121*	.015	3.407*	.028
LBN	0.115*	.010	0.026*	.003	0.125*	.006

	Dependent variable: GDP per capita (international $, 2005 Constant Prices)_ lnGDPPCPenn					
ccode	**lndnsexp**	**se**	**lniqi**	**se**	**lncger**	**se**
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
LBR	0.106*	.008	-0.258	.220	0.873	.686
LKA	0.183*	.000	-0.560*	.001	-1.310*	.013
LSO	-0.067*	.004	0.662*	.092	0.672*	.179
MAR	0.104*	.033	0.297*	.048	0.480*	.010
MDG	-0.009*	.002	0.144**	.061	-0.418*	.119
MEX	0.286*	.022	0.314*	.030	1.358*	.004
MLI	0.017**	.007	0.328***	.198	0.504*	.068
MNG	0.058*	.006	-0.038	.024	1.211*	.054
MOZ	0.007	.035	0.172***	.104	1.182*	.160
MUS	-0.108*	.000	0.311*	.022	3.143*	.052
MWI	0.053*	.002	-0.026	.161	-0.684*	.183
MYS	0.581*	.000	-0.220*	.006	1.003*	.010
NAM	0.088*	.000	-0.728*	.001	0.332*	.001
NER	-0.006*	.001	-0.075***	.039	-0.013	.018
NIC	-0.009*	.002	-0.183*	.025	0.622*	.035
NPL	0.031*	.000	-0.069*	.003	0.540*	.020
PAK	-0.108*	.003	0.036*	.010	1.128*	.034
PAN	-0.034*	.003	0.637*	.061	2.252*	.015
PER	-0.382*	.000	0.584*	.001	-4.897*	.036
PHL	0.271*	.000	0.235*	.000	2.426*	.030
PRY	0.085*	.001	0.233*	.005	-0.498*	.011
RWA	-0.014*	.000	0.302*	.008	-0.198*	.035
SEN	0.005**	.002	-0.030	.023	0.412*	.021
SLB	-0.122*	.001	-0.127*	.022	-1.203*	.034
SLV	0.055*	.005	0.109*	.029	0.559*	.008
STP	-0.044*	.001	0.554*	.019	1.745*	.050
SUR	-0.037*	.000	0.254*	.000	-3.201*	.017
SYC	-0.061*	.000	0.781*	.004	0.831*	.005
TCD	-0.088*	.010	-0.210	.217	1.141*	.056
TGO	0.031*	.002	0.357*	.003	1.079*	.034
TON	0.003*	.000	0.040*	.001	-0.037*	.009
TUN	0.321*	.001	0.046*	.000	5.378*	.003
TUR	-0.094*	.006	-0.190*	.024	1.408*	.034
TZA	0.013*	.004	-0.100*	.017	0.786*	.04
UGA	0.037*	.000	-0.188*	.013	0.935*	.012
URY	0.326*	.003	0.146*	.011	0.823*	.053
VCT	-0.023*	.001	0.378*	.025	4.831*	.004
VNM	0.162*	.000	-0.050*	.004	10.4*	.013
WSM	0.028*	.001	0.497*	.001	0.200*	.031
ZAF	0.061*	.004	-0.138*	.009	-3.937*	.063
ZMB	0.031	.071	0.156*	.026	1.101*	.085
ZWE	-0.156*	.000	1.202*	.007	-5.37*	.109

Notes: Standard errors are in parentheses.
Standard errors of nonparametric estimates are obtained from bootstrapping (seed 10101)
* significant at 1% level, ** significant at 5% level, *** significant at 10% level.

Table 2.c: High Skill- and Technology-Intensive Manufactures

	Dependent variable: GDP per capita (international $, 2005 Constant Prices)_ lnGDPPCPenn					
ccode	**lnensexp**	**se**	**lniqi**	**se**	**lncger**	**se**
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
AFG	.073	.063	1.42**	.767	-.141	.86
ARG	0.119*	0.011	1.404*	0.011	2.823*	0.016
BDI	-.004	.005	.017	.084	-.406*	.127
BEN	-0.009*	0.003	0.274**	0.131	0.520*	0.185
BFA	0.033*	0.004	0.065*	0.015	0.797*	0.108
BGD	0.064*	0.003	-0.259*	0.028	0.901*	0.09
BHS	0.171*	0.015	0.718*	0.216	1.110*	0.21
BLZ	-0.041*	0.003	0.687*	0.103	1.995*	0.128
BOL	-0.020*	0.005	0.410*	0.12	-0.909*	0.17
BRA	0.011***	0.006	0.955*	0.045	0.969*	0.041
BTN	0.004	0.026	-0.15	0.133	2.095*	0.114
CAF	0.024*	0.003	0.034**	0.015	0.546*	0.08
CHL	0.037*	0.01	1.164*	0.109	2.934*	0.113
CHN	.279*	.042	.172*	.016	8.9*	.757
CIV	-0.005	0.004	0.408*	0.05	-0.764*	0.06
CMR	-0.050*	0.004	-0.161*	0.017	0.463*	0.019
COL	0.121*	0.01	0.284*	0.034	2.108*	0.059
COM	.010	.017	.116	.24	.27	.293
CPV	.069*	.009	1.26*	.083	3.16*	.266
CRI	0.041*	0.001	1.234*	0.073	1.479*	0.024
CUB	-.063*	.022	-.122	.162	2.418*	.614
DJI	.011	.007	-1.38*	.175	-.094*	.031
DMA	.145*	.007	.706*	.041	.081	.063
DOM	0.009	0.056	0.174	0.23	2.572*	0.864
EGY	-0.145*	0.014	0.091**	0.045	0.454*	0.202
ERI	-.125*	.041	.076	.073	.088	.154
ETH	.060*	.019	.378*	.072	.457*	.095
FJI	0.088*	0.003	0.033	0.066	2.854*	0.211
GHA	0.032*	0.005	-0.033	0.039	1.496*	0.024
GIN	-.049*	.007	-.934*	.258	.100	.096
GMB	0.008	0.008	-0.057***	0.03	1.453*	0.338
GNB	-.001	.006	.51	.249**	1.8*	.098
GRD	.058*	.009	1.7*	.148	1.09*	.321
GTM	0.201*	0.018	0.683*	0.033	0.798*	0.031
GUY	0.326*	0.03	0.206	0.129	-0.812*	0.037
HND	0.068*	0.01	0.761*	0.07	2.011*	0.058
IDN	0.033	0.059	-0.211	0.158	1.503*	0.199
IND	0.155*	0.028	-0.2*	0.055	1.676*	0.062
JAM	0.131*	0.005	0.67*	0.021	1.849*	0.071
JOR	-0.013**	0.006	0.228*	0.045	1.770*	0.052
KEN	0.087*	0.005	-0.053*	0.017	0.493**	0.198
KHM	-0.009	0.02	-0.174	0.175	2.094*	0.044
KNA	.046*	.006	1.09*	.063	-.111**	.052
KOR	0.163*	0.002	-0.415*	0.041	7.654*	0.033
LAO	-0.023*	0.004	0.127*	0.03	2.914*	0.061

	Dependent variable: GDP per capita (international $, 2005 Constant Prices)_ lnGDPPCPenn					
ccode	**lnensexp**	**se**	**lniqi**	**se**	**lncger**	**se**
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
LBN	.184*	.007	-.088*	.029	1.79*	0.094
LBR	.297*	.092	.954*	.154	2.339*	0.719
LKA	0.179*	0.007	-0.497*	0.085	2.273*	0.141
LSO	-.022*	.006	-.256	.186	2.045*	.318
MAR	0.078*	0.024	0.031	0.094	0.506*	0.114
MDG	-0.018	0.012	0.134	0.115	0.113	0.4
MEX	0.148*	0.02	0.333*	0.007	1.038*	0.054
MLI	0.005	0.01	0.13*	0.019	0.419*	0.013
MNG	0.127*	0.027	-0.493*	0.062	1.354*	0.146
MOZ	0.035*	0.007	0.135*	0.05	1.266*	0.017
MUS	0.193*	0.016	1.251*	0.182	0.401*	0.141
MWI	0.115*	0.023	0.544	0.363	-0.276***	0.165
MYS	0.385*	0.014	-0.232*	0.054	3.467*	0.072
NAM	.144*	.001	-.310*	.026	2.019*	.032
NER	0.006	0.013	-0.207	0.195	0.252**	0.121
NIC	0.074*	0.021	-0.078	0.29	2.024*	0.273
NPL	0.004	0.004	0.007	0.081	1.407*	0.21
PAK	0.090*	0.021	0.002	0.027	0.603*	0.103
PAN	0.045*	0.008	0.597*	0.013	2.259*	0.036
PER	-0.027**	0.012	0.425*	0.036	0.077	0.063
PHL	-0.235*	0.018	-0.047*	0.016	1.014*	0.142
PRY	0.177*	0.003	1.103*	0.041	1.381*	0.047
RWA	0	0.016	0.344*	0.055	1.0*	0.376
SEN	0.054*	0.008	0.255*	0.041	0.241*	0.043
SLB	-.116*	.004	-.742*	.091	-.091	.117
SLV	0.034*	0.005	0.724*	0.06	1.401*	0.021
STP	.004	.005	.783*	.059	1.51*	.13
SUR	-0.092**	0.039	-0.005	0.061	3.571*	0.209
TCD	0.016**	0.008	-1.153*	0.403	1.105*	0.136
TGO	0.067*	0.006	0.622*	0.151	0.999*	0.477
TON	-.018*	.002	-.038	.038	1.659*	.246
TUN	0.140*	0.006	-0.061	0.055	4.660*	0.169
TUR	0.024**	0.012	0.175*	0.04	2.246*	0.093
TZA	0.043*	0.016	-0.433*	0.138	0.637*	0.054
UGA	0.112*	0.01	1.072*	0.2	2.168*	0.223
URY	0.008	0.013	0.716*	0.052	1.061*	0.017
VCT	.072*	.008	.052**	.027	3.629*	.073
VNM	0.127*	0.006	0.206*	0.068	7.664*	0.531
WSM	0.035*	0.005	0.396*	0.007	3.091*	0.152
ZAF	0.185*	0.008	-0.431*	0.011	-0.124*	0.151
ZMB	0.007	0.009	0.227*	0.081	1.462*	0.102
ZWE	.067***	.039	.223	.260	2.132	1.586

Notes: Standard errors are in parentheses.
Standard errors of nonparametric estimates are obtained from bootstrapping (seed 10101)
* significant at 1% level, ** significant at 5% level, *** significant at 10% level.

Table 3: Nonparametric Median Estimates by Year

Table 3.a: Low Skill- and Technology-Intensive Manufactures

	Dependent variable: GDP per capita (international $, 2005 Constant Prices)_ lnGDPPCPenn					
Year	**lncnsexp**	**Rank**	**lniqi**	**Rank**	**lncger**	**Rank**
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
1995	-0.006 (.006)	6	0.090** (.034)	11	0.731* (.161)	13
1996	-0.005 (.006)	7	0.089** (.037)	10	0.700* (.159)	12
1997	-0.005 (.006)	8	0.091** (.036)	13	0.670* (.159)	9
1998	-0.005 (.006)	9	0.091** (.035)	12	0.641* (.155)	7
1999	-0.005 (.006)	10	0.089* (.030)	9	0.614* (.152)	5
2000	-0.004 (.006)	11	0.083** (.035)	5	0.591* (.156)	2
2001	-0.004 (.005)	12	0.087** (.037)	7	0.580* (.160)	1
2002	-0.004 (.005)	13	0.084** (.040)	6	0.608* (.156)	4
2003	-0.006 (.007)	5	0.087** (.039)	8	0.600* (.153)	3
2004	-0.009 (.008)	1	0.083** (.035)	4	0.615* (.149)	6
2005	-0.008 (.009)	3	0.079** (.031)	1	0.649* (.155)	8
2006	-0.008 (.008)	4	0.082*- (.030)	2	0.683* (.158)	11
2007	-0.009 (.008)	2	0.082* (.028)	3	0.682* (.162)	10

Notes: Standard errors are in parentheses.
Standard errors of nonparametric estimates are obtained from bootstrapping (seed 10101)
* significant at 1% level, ** significant at 5% level, *** significant at 10% level.
Higher rank indicates higher absolute value of the estimates.

Table 3.b: Medium Skill- and Technology Intensive Manufactures

	Dependent variable: GDP per capita (international $, 2005 Constant Prices)_ lnGDPPCPenn					
Year	**lndnsexp**	**Rank**	**lniqi**	**Rank**	**lncger**	**Rank**
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
1995	0.014 (.009)	8	0.116* (.039)	6	0.809* (.154)	13
1996	0.012 (.009)	4	0.122* (.036)	8	0.808* (.157)	12
1997	0.015 (.01)	10	0.136* (.034)	12	0.798* (.156)	11
1998	0.014 (.010)	7	0.138* (.035)	13	0.795* (.156)	10
1999	0.013 (.011)	6	0.126* (.036)	10	0.789* (.154)	9
2000	0.011 (.01)	3	0.122* (.036)	9	0.733* (.135)	8
2001	0.017*** (.010)	13	0.117* (.036)	7	0.674* (.140)	4
2002	0.015 (.011)	11	0.126* (.043)	11	0.662* (.137)	2
2003	0.016** (.010)	12	0.115* (.044)	5	0.644* (.129)	1
2004	0.010 (.011)	2	0.114* (.037)	3	0.674* (.125)	3
2005	0.010 (.010)	1	0.089** (.041)	1	0.686* (.128)	5
2006	0.014*** (.008)	9	0.097** (.038)	2	0.702* (.126)	6
2007	0.013*** (.008)	5	0.114* (.041)	4	0.723* (.117)	7

Notes: Standard errors are in parentheses.
Standard errors of nonparametric estimates are obtained from bootstrapping (seed 10101)
* significant at 1% level, ** significant at 5% level, *** significant at 10% level.
Higher rank indicates higher absolute value of the estimates.

Table 3.c: High Skill- and Technology-Intensive Manufactures

	Dependent variable: GDP per capita (international $, 2005 Constant Prices)_ lnGDPPCPenn					
Year	**lnensexp**	**Rank**	**Lniqi**	**Rank**	**lncger**	**Rank**
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
1995	0.037* (.009)*	5	0.098 (.061)	1	1.429* (.228)*	10
1996	0.038* (.013)*	6	0.124*** (.076)	2	1.262* (.201)*	3
1997	0.04* (.010)	8	0.13** (.051)**	4	1.351* (.202)*	7
1998	0.039* (.009)*	7	0.130** (.063)**	5	1.305* (.154)*	4
1999	0.034* (.012)*	3	0.186* (.045)*	11	1.433* (.200)*	11
2000	0.035* (.010)*	4	0.138** (.060)**	7	1.251* (.222)*	2
2001	0.026* (.009)*	1	0.150** (.063)**	8	1.390* (.176)*	8
2002	0.031* (.01)*	2	0.137** (.060)**	6	1.244* (.190)*	1
2003	0.040* (.009)*	9	0.169*** (.073)**	10	1.345* (.190)*	6
2004	0.043* (.014)*	10	0.127* (.054)*	3	1.337* (.178)*	5
2005	0.047* (.013)*	11	0.15* (.053)*	9	1.404* (.141)*	9
2006	0.055* (.012)*	12	0.215* (.060)*	12	1.556* (.130)*	13
2007	0.063* (.015)*	13	0.321* (.065)*	13	1.545* (.169)*	12

Notes: Standard errors are in parentheses.
Standard errors of nonparametric estimates are obtained from bootstrapping (seed 10101)
* significant at 1% level, ** significant at 5% level, *** significant at 10% level.
Higher rank indicates higher absolute value of the estimates.

Table 4: Nonparametric Median Estimates by Region

Table 4.a: Low Skill- and Technology Intensive Manufactures

	Dependent variable: GDP per capita (international $, 2005 Constant Prices)_ lnGDPPCPenn		
	lncnsexp	**lniqi**	**lncger**
	(1)	**(2)**	**(3)**
Asia	-0.027** (.012)	-0.061* (.006)	0.964* (.062)
Americas	-0.010* (.002)	0.253* (.011)	1.009* (.105)
Africa	0.001 (.002)	0.080* (.008)	0.395* (.046)

Table 4.b: Medium Skill- and Technology-Intensive Manufactures

	Dependent variable: GDP per capita (international $, 2005 Constant Prices)_ lnGDPPCPenn		
	lndnsexp	**lniqi**	**Lncger**
	(1)	**(2)**	**(3)**
Asia	0.028* (.009)	-0.017 (.014)	1.211* (.109)
Americas	0.031* (.004)	0.246* (.01)	0.833* (.121)
Africa	0.007* (.002)	0.078* (.015)	0.471* (.035)

Table 4.c: High Skill- and Technology-Intensive Manufactures

	Dependent variable: GDP per capita (international $, 2005 Constant Prices)_ lnGDPPCPenn		
	lnensexp	**lniqi**	**lncger**
	(1)	**(2)**	**(3)**
Asia	0.061* (.008)*	-0.046* (.017)*	2.030* (.072)*
Americas	0.055* (.005)*	0.644* (.022)*	1.478* (.048)*
Africa	0.025* (.003)*	0.084* (.022)*	0.689* (.066)*

Notes: Standard errors are in parentheses.
Standard errors of nonparametric estimates are obtained from bootstrapping (seed 10101)
* significant at 1% level, ** significant at 5% level, *** significant at 10% level.

Table 5: Nonparametric Median Estimates by Emerging Country Group

Table 5.a: Low Skill- and Technology-Intensive Manufactures

	Dependent variable: GDP per capita (international $, 2005 Constant Prices)_ lnGDPPCPenn		
	lncnsexp	lniqi	lncger
	(1)	(2)	(3)
South	-0.006* (.002)	0.100* (.012)	0.535* (.035)
Emerging South	-0.007*** (.004)	0.023 (.030)	1.119* (.024)

Table 5.b: Medium Skill- and Technology Intensive Manufactures

	Dependent variable: GDP per capita (international $, 2005 Constant Prices)_ lnGDPPCPenn		
	lndnsexp	lniqi	lncger
	(1)	(2)	(3)
South	0.005* (.002)	0.133* (.014)	0.549* (.025)
Emerging South	0.090* (.012)	0.079* (.023)	1.156* (.068)

Table 5.c: High Skill- and Technology Intensive Manufactures

	Dependent variable: GDP per capita (international $, 2005 Constant Prices)_ lnGDPPCPenn		
	lnensexp	lniqi	lncger
	(1)	(2)	(3)
South	.031* (.003)	0.184* (.024)*	1.311* (.058)*
Emerging South	0.086* (.007)*	0.105* (.035)*	1.687* (.089)*

Notes: Standard errors are in parentheses.
Standard errors of nonparametric estimates are obtained from bootstrapping (seed 10101)
* significant at 1% level, ** significant at 5% level, *** significant at 10% level.

Table 6:Nonparametric Median Estimates by Income Group

Table 6.a: Low Skill- and Technology-Intensive Manufactures

	Dependent variable: GDP per capita (international $, 2005 Constant Prices)_ lnGDPPCPenn		
	lncnsexp	**lniqi**	**lncger**
	(1)	**(2)**	**(3)**
Non-ldcsids	-0.007* (.002)	0.080* (.011)	0.880* (.060)
Ldcsids	-0.004** (.002)	0.090* (.009)	0.565* (.045)

Table 6.b: Medium Skill- and Technology-Intensive Manufactures

	Dependent variable: GDP per capita (international $, 2005 Constant Prices)_ lnGDPPCPenn		
	lndnsexp	**lniqi**	**lncger**
	(1)	**(2)**	**(3)**
Non-ldcsids	0.043* (.007)	0.117* (.021)	0.899* (.103)
ldcsids	0.005* (.002)	0.121* (.017)	0.531* (.046)

Table 6.c: High Skill- and Technology-Intensive Manufactures

	Dependent variable: GDP per capita (international $, 2005 Constant Prices)_ lnGDPPCPenn		
	lnensexp	**lniqi**	**lncger**
	(1)	**(2)**	**(3)**
Non-ldcsids	0.067* (.007)	0.17* (.027)	1.558* (.070)
ldcsids	0.026* (.003)	0.152* (.025)	1.099* (.083)

Notes: Standard errors are in parentheses.
Standard errors of nonparametric estimates are obtained from bootstrapping (seed 10101)
* significant at 1% level, ** significant at 5% level, *** significant at 10% level.

Table 7: Extended Model: Nonparametric First, Second and Third Quartile Estimates

Table 7.a: Low Skill- and Technology-Intensive Manufactures

	Dependent variable: GDP per capita (international $, 2005 Constant Prices)_ lnGDPPCPenn				
	lncnsexp	**lniqi**	**lncger**	**lnpcrdbofgdp**	**lnwavg**
	(1)	**(2)**	**(3)**	**(4)**	**(5)**
1st quartile	-0.142* (.011)	-0.061* (.016)	-0.004 (.056)	0.008 (.007)	-0.106* (.005)
Median	-0.007 (.008)	0.190* (.018)	0.732* (.055)	0.160* (.016)	-0.036* (.003)
3rd quartile	0.120* (.014)	0.585* (.043)	1.528* (.068)	0.479* (.015)	0.021* (.003)
Parametric	0.03** (.015)	0.438* (.069)	1.032* (.071)	0.425* (.026)	-0.182* (.024)

Table 7.b: Medium Skill- and Technology-Intensive Manufactures

	Dependent variable: GDP per capita (international $, 2005 Constant Prices)_ lnGDPPCPenn				
	lndnsexp	**lniqi**	**lncger**	**lnpcrdbofgdp**	**lnwavg**
	(1)	**(2)**	**(3)**	**(4)**	**(5)**
1st quartile	-0.049** (.015)	-0.067* (.019)	0.097 (.211)	-0.066* (.025)	-0.055* (.015)
Median	0.004 (.006)	0.060*** (.034)	0.533* (.105)	0.063** (.032)	-0.015** (.007)
3rd quartile	0.044* (.016)	0.337* (.089)	0.979* (.178)	0.156* (.045)	0.016** (.007)
Parametric	0.173* (.016)	0.399* (.063)	0.943* (.067)	0.371* (.024)	-0.166* (.020)

Table 7.c: High Skill- and Technology-Intensive Manufactures

	Dependent variable: GDP per capita (international $, 2005 Constant Prices)_ lnGDPPCPenn				
	lnensexp	**lniqi**	**lncger**	**lnpcrdbofgdp**	**lnwavg**
	(1)	**(2)**	**(3)**	**(4)**	**(5)**
1st quartile	-0.012* (.001)	-0.069* (.004)	-0.040 (.091)	-0.045* (.003)	-0.060* (.003)
Median	0.006* (.001)	0.036* (.007)	0.453* (.038)	0.052* (.014)	-0.021* (.002)
3rd quartile	0.034* (.002)	0.278* (.041)	1.166* (.069)	0.221* (.012)	0.010* (.001)
Parametric	0.012* (.011)	0.421* (.065)	1.022* (.068)	0.361* (.026)	-0.152* (.021)

Notes: Standard errors are in parentheses.
Standard errors of nonparametric estimates are obtained from bootstrapping (seed 10101)
* significant at 1% level, ** significant at 5% level, *** significant at 10% level.

Table 8: Extended Model: Impact of Covariates on GDP Per Capita by Country

	Dependent variable: GDP per capita (international $, 2005 Constant Prices)_ lnGDPPCPenn									
ccode	**lnensexp***	**se**	**lniqi ****	**se**	**lncger *+**	**se**	**lnpcrdbofgdp +**	**se**	**lnwavg ++**	**se**
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
ARG	0.205	0.037	0.590	0.122	0.117	0.120	-0.163	0.007	-0.028	0.000
BEN	-0.017	0.001	-0.061	0.014	-0.450	0.006	0.934	0.007	-0.081	0.000
BFA	-0.003	0.003	-0.088	0.000	0.008	0.085	0.730	0.017	0.197	0.002
BGD	0.038	0.003	0.623	0.078	1.542	0.163	0.123	0.053	-0.004	0.007
BHS	0.076	0.000	-0.093	0.021	0.286	0.039	-0.030	0.007	0.007	0.008
BLZ	-0.025	0.002	0.014	0.090	2.521	0.275	0.051	0.017	0.007	0.009
BOL	-0.005	0.000	-0.034	0.011	0.665	0.021	0.145	0.013	-0.066	0.022
BRA	0.005	0.000	0.699	0.013	-0.280	0.008	0.019	0.001	-0.058	0.002
BTN	-0.007	0.015	0.057	0.011	0.241	0.034	0.222	0.015	0.012	0.004
CAF	0.013	0.000	0.459	0.010	0.686	0.086	0.459	0.023	0.026	0.025
CHL	0.051	0.000	-0.070	0.000	0.291	0.046	0.263	0.051	-0.050	0.002
CIV	-0.011	0.000	0.067	0.000	0.284	0.030	-0.061	0.008	0.027	0.000
CMR	-0.034	0.000	-0.471	0.047	0.813	0.066	-0.780	0.045	-0.029	0.014
COL	0.011	0.000	-0.051	0.005	2.029	0.022	0.270	0.005	-0.058	0.001
CRI	0.031	0.001	0.093	0.005	0.837	0.018	0.032	0.002	-0.023	0.001
DOM	0.019	0.015	0.968	0.092	0.974	0.042	0.029	0.002	-0.029	0.002
EGY	-0.061	0.003	0.405	0.013	-0.485	0.046	0.298	0.025	0.013	0.001
FJI	-0.001	0.000	0.705	0.134	0.185	0.430	0.202	0.189	0.017	0.035
GHA	0.000	0.008	0.140	0.003	-1.570	0.036	-0.041	0.007	-0.090	0.003
GMB	-0.011	0.000	0.072	0.007	0.311	0.007	0.142	0.002	-0.021	0.000
GTM	0.005	0.004	-0.136	0.013	1.113	0.072	-0.072	0.003	-0.064	0.000
GUY	-0.052	0.003	-0.010	0.002	0.981	0.024	-0.055	0.005	0.011	0.001
HND	0.007	0.000	0.056	0.019	0.677	0.123	0.125	0.043	0.048	0.004
IDN	0.018	0.010	0.082	0.003	0.379	0.011	0.068	0.014	-0.004	0.001
IND	0.036	0.054	0.320	0.009	-0.309	0.016	0.161	0.014	-0.091	0.001
JAM	0.030	0.000	0.325	0.005	1.481	0.043	-0.083	0.012	0.006	0.000
JOR	0.039	0.000	-0.166	0.026	0.491	0.060	0.443	0.041	-0.166	0.002
KEN	-0.003	0.004	-0.153	0.203	1.007	0.164	0.068	0.037	-0.242	0.181
KHM	0.058	0.007	0.602	0.008	1.006	0.024	-0.193	0.004	-0.013	0.001
KOR	0.103	0.003	-0.037	0.000	1.700	0.002	0.004	0.001	-0.089	0.000
LAO	0.006	0.001	0.013	0.021	0.076	0.040	0.093	0.020	-0.042	0.008
LKA	0.176	0.000	-0.398	0.002	3.401	0.001	-0.212	0.004	-0.038	0.000
MAR	-0.014	0.002	-0.058	0.016	1.085	0.024	-0.045	0.003	-0.117	0.000
MDG	-0.018	0.004	0.320	0.063	-0.243	0.004	-0.088	0.050	-0.004	0.015
MEX	0.386	0.004	0.446	0.033	-1.777	0.131	-0.111	0.014	0.006	0.003
MLI	0.001	0.005	0.063	0.007	1.044	0.029	0.079	0.000	-0.441	0.000
MNG	0.000	0.001	-0.014	0.044	0.220	0.025	0.218	0.052	0.003	0.005
MOZ	0.001	0.010	0.138	0.022	1.589	0.053	0.441	0.001	-0.003	0.003
MUS	-0.036	0.003	-0.197	0.008	1.350	0.011	0.010	0.013	0.008	0.001

	Dependent variable: GDP per capita (international $, 2005 Constant Prices)_ lnGDPPCPenn									
ccode	**lnensexp***	**se**	**lniqi ****	**se**	**lncger *+**	**se**	**lnpcrdbofgdp +**	**se**	**lnwavg ++**	**se**
MWI	0.018	0.000	-0.141	0.154	0.570	0.141	0.007	0.015	-0.034	0.034
MYS	0.230	0.005	0.335	0.009	0.304	0.040	0.184	0.023	-0.031	0.000
NER	-0.013	0.008	-0.026	0.038	1.246	0.020	-0.037	0.011	0.004	0.003
NIC	-0.002	0.001	-0.067	0.001	0.452	0.019	0.113	0.003	0.045	0.000
NPL	0.002	0.000	-0.139	0.023	0.556	0.002	0.088	0.011	-0.013	0.000
PAK	-0.025	0.001	-0.089	0.003	0.197	0.009	-0.101	0.012	-0.029	0.004
PAN	-0.222	0.002	0.001	0.012	0.941	0.007	0.324	0.005	0.060	0.000
PER	-0.003	0.001	1.719	0.022	2.376	0.012	-0.379	0.003	0.229	0.001
PHL	-0.123	0.002	0.291	0.010	-0.505	0.024	0.004	0.000	-0.029	0.000
PRY	0.026	0.002	0.171	0.006	-0.943	0.065	0.008	0.008	-0.175	0.004
RWA	0.017	0.006	0.010	0.003	-4.445	0.039	-0.047	0.001	-0.273	0.000
SEN	0.002	0.000	0.041	0.008	0.026	0.068	0.292	0.044	-0.036	0.011
SLV	-0.046	0.001	0.054	0.019	1.590	0.080	0.293	0.012	0.005	0.000
SUR	0.162	0.014	-0.076	0.007	0.422	0.004	-0.052	0.002	0.021	0.001
TCD	0.013	0.003	0.048	0.002	-3.895	0.005	0.137	0.000	-0.048	0.000
TGO	0.061	0.011	-0.544	0.001	-1.418	0.001	-0.042	0.003	-0.249	0.001
TUN	0.126	0.001	0.014	0.022	-1.186	0.340	0.085	0.008	-0.067	0.016
TUR	-0.020	0.000	-0.143	0.043	0.468	0.008	0.037	0.025	0.006	0.009
TZA	0.011	0.002	0.080	0.027	-0.782	0.094	0.226	0.002	-0.046	0.004
UGA	0.040	0.002	0.467	0.003	6.266	0.035	0.516	0.001	-0.031	0.000
URY	-0.335	0.014	-0.084	0.003	-0.238	0.035	0.281	0.001	-0.071	0.001
VNM	0.056	0.018	0.027	0.001	0.362	0.022	0.051	0.043	0.063	0.005
WSM	-0.007	0.000	-0.049	0.087	1.759	0.161	0.017	0.006	-0.010	0.009
ZAF	0.009	0.000	0.012	0.043	4.956	0.984	0.147	0.050	-0.010	0.006
ZMB	0.008	0.009	0.429	0.093	1.880	0.081	0.336	0.010	0.168	0.019

Notes: Standard errors are in parentheses.
Standard errors of nonparametric estimates are obtained from bootstrapping (seed 10101)
Lower rank indicates higher absolute value of the estimates
*All nonparametric median estimates are significant at the 95% level with the exception of BFA, BTN, DOM, GHA, GTM, IND, KEN, MLI, MNG, MOZ, NER, ZMB-
**All nonparametric median estimates are significant at the 95% level with the exception of BLZ, KEN, LAO, MNG, MWI, NER, PAN, TUN, WSM, ZAF-
*+ All nonparametric median estimates are significant at the 95% level with the exception of ARG, BFA, FJI, SEN.
+ All nonparametric median estimates are significant at the 95% level with the exception of FJI, MUS, MWI, PRY, TUR, VNM.
++ All nonparametric median estimates are significant at the 95% level with the exception of BGD, BHS, BLZ, CAF, FJI, KEN, MDG, MNG, MOZ, MWI, NER, TUR, WSM.

Table 9: Extended Model: Nonparametric Median Estimates by Year

Table 9.a: Low Skill- and Technology-Intensive Manufactures

	Dependent variable: GDP per capita (international $, 2005 Constant Prices)_ lnGDPPCPenn									
Year	**lncnsexp**	**Rank**	**lniqi**	**Rank**	**lncger**	**Rank**	**lnpcrd bofgdp**	**Rank**	**lnwavg**	**Rank**
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**	**(10)**
1995	0.002 (.023)	7	0.291* (.088)	13	0.922* (.166)	12	0.159* (.054)	8	-0.034*** (.018)	6
1996	0.024 (.029)	13	0.197* (.061)	7	0.889* (.174)	11	0.137* (.04)	2	-0.025 (.015)	12
1997	0.018 (.034)	12	0.145*** (.078)	2	0.816* (.200)	9	0.154* (.049)	6	-0.016 (.021)	13
1998	0.014 (.018)	11	0.203* (.073)	8	0.689* (.144)	7	0.147* (.04)	4	-0.029** (.012)	10
1999	0.011 (.026)	10	0.228* (.08)	11	0.636* (.159)	5	0.144* (.042)	3	-0.033* (.012)	8
2000	0.010 (.03)	9	0.175** (.079)	5	0.614* (.137)	4	0.149* (.043)	5	-0.036* (.010)	5
2001	-0.023 (.022)	4	0.174* (.041)	4	0.792* (.175)	8	0.116** (.055)	1	-0.033* (.010)	7
2002	0.008 (.026)	8	0.187* (.06)	6	0.572* (.149)	2	0.195* (.059)	9	-0.052* (.010)	1
2003	-0.024 (.028)	3	0.203* (.063)	9	0.573* (.185)	3	0.157* (.059)	7	-0.044* (.012)	2
2004	-0.035 (.035)	1	0.136*** (.072)	1	0.638* (.226)	6	0.251* (.05)	13	-0.04* (.013)	4
2005	-0.022 (.016)	5	0.165* (.06)	3	0.568* (.184)	1	0.205* (.049)	10	-0.027*** (.016)	11
2006	-0.031 (.030)	2	0.213* (.057)	10	0.889* (.13)	10	0.207* (.056)	11	-0.031** (.015)	9
2007	-0.020 (.034)	6	0.232* (.066)	12	0.941* (.135)	13	0.244* (.062)	12	-0.041* (.009)	3

Notes: Standard errors are in parentheses.
Standard errors of nonparametric estimates are obtained from bootstrapping (seed 10101)
* significant at 1% level, ** significant at 5% level, *** significant at 10% level.
Higher rank indicates higher absolute value of the estimates.

Table 9.b: Medium Skill- and Technology-Intensive Manufactures

	Dependent variable: GDP per capita (international $, 2005 Constant Prices)_ lnGDPPCPenn									
Year	**lndnsexp**	**Rank**	**lniqi**	**Rank**	**lncger**	**Rank**	**lnpcrd bofgdp**	**Rank**	**lnwavg**	**Rank**
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**	**(10)**
1995	0.003 (.008)	5	0.053** (.090)	11	0.549* (.090)	2	0.038 (.030)	12	-0.007 (.007)	3
1996	0.004 (.009)	8	0.048 (.036)	12	0.544* (.126)	3	0.040 (.03)	11	-0.004 (.008)	1
1997	0.003 (.007)	6	0.061 (.041)	8	0.580* (.104)	1	0.037 (.031)	13	-0.006 (.008)	2
1998	0.007 (.006)	13	0.061 (.048)	7	0.526* (.081)	6	0.048 (.029)	8	-0.013 (.009)	4
1999	0.006	10	0.062	6	0.540	4	0.046	10	-0.018	9
2000	.006 (.009)	11	.056 (.045)	9	.53* (.108)	5	.053** (.024)	7	-.018** (.008)	8
2001	.006 (.006)	12	.07** (.033)	4	.498* (.1)	7	.073* (.026)	4	-.020* (.008)	11
2002	.004 (.007)	7	.053* (.031)	10	.498* (.104)	8	.060 (.028)	6	-.02*** (.01)	13
2003	.005 (.006)	9	.077** (.03)	3	.399* (.095)	13	.046** (.031)	9	-.02** (.008)	12
2004	.001 (.008)	4	.07** (.032)	5	.417* (.113)	10	.067* (.030)	5	-.019** (.007)	10
2005	-.002 (.006)	2	.077* (.030)	2	.413* (.129)	12	.086** (.033)	2	-.015** (.007)	6
2006	-.001 (.007)	3	.092*** (.023)	1	.416* (.123)	11	.083* (.035)	3	-.015* (.005)	5
2007	-.003 (.007)	1	.044*** (.026)	13	.476* (.137)	9	.1* (.03)	1	-.016* (.004)	7

Notes: Standard errors are in parentheses.
Standard errors of nonparametric estimates are obtained from bootstrapping (seed 10101)
* significant at 1% level, ** significant at 5% level, *** significant at 10% level.
Higher rank indicates higher absolute value of the estimates.

Table 9.c: High Skill- and Technology-Intensive Manufactures

	Dependent variable: GDP per capita (international $, 2005 Constant Prices)_ lnGDPPCPenn									
Year	**lnensexp**	**Rank**	**Lniqi**	**Rank**	**lncger**	**Rank**	**lnpcrd bofgdp**	**Rank**	**lnwavg**	**Rank**
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**	**(10)**
1995	0.01*** (.006)	12	0.059*** (.03)	12	0.529* (.15)	13	0.037 (.03)	3	-0.020** (.009)	6
1996	0.011** (.005)	13	0.064** (.027)	13	0.495* (.148)	12	0.037 (.03)	2	-0.019** (.009)	10
1997	0.009** (.003)	11	0.04*** (.023)	8	0.48* (.132)	11	0.036 (.032)	1	-0.010 (.01)	13
1998	0.006*** (.003)	10	0.02 (.03)	1	0.455* (.116)	7	0.039 (.03)	4	-0.024* (.008)	3
1999	0.006* (.003)	8	0.020 (.025)	2	0.443* (.109)	5	0.069* (.027)	9	-0.024* (.008)	5
2000	0.003 (.003)	1	0.026 (.025)	4	0.456* (.151)	8	0.063** (.032)	8	-0.024* (.005)	4
2001	0.005 (.003)	6	0.026 (.017)	3	0.451* (.154)	6	0.059** (.031)	7	-0.027* (.007)	1
2002	0.004 (.004)	4	0.030 (.024)	5	0.459* (.147)	10	0.055** (.029)	6	-0.026* (.007)	2
2003	0.003 (.003)	2	0.050** (.025)	10	0.456* (.171)	9	0.079** (.032)	13	-0.020** (.007)	9
2004	0.004 (.004)	3	0.053** (.025)	11	0.422* (.148)	1	0.074** (.032)	12	-0.017** (.007)	12
2005	0.004 (.004)	5	0.042** (.018)	9	0.441* (.15)	4	0.072* (.028)	11	-0.020** (.009)	7
2006	0.006 (.003)	9	0.037** (.018)	6	0.423* (.151)	2	0.070** (.03)	10	-0.019** (.008)	11
2007	0.005 (.004)	7	0.038 (.026)	7	0.427* (.128)	3	0.051 (.032)	5	-0.020** (.008)	8

Notes: Standard errors are in parentheses.
Standard errors of nonparametric estimates are obtained from bootstrapping (seed 10101)
* significant at 1% level, ** significant at 5% level, *** significant at 10% level.
Higher rank indicates higher absolute value of the estimates.

Table 10: Extended Model: Nonparametric Median Estimates by Region

Table 10.a: Low Skill- and Technology-Intensive Manufactures

	Dependent variable: GDP per capita (international $, 2005 Constant Prices)_ lnGDPPCPenn				
	lncnsexp	**lniqi**	**lncger**	**lnpcrdbofgdp**	**lnwavg**
Asia	-0.031** (.014)	0.084* (.024)	0.987* (.061)	0.188* (.030)	-0.042* (.010)
Americas	-0.007 (.015)	0.537* (.067)	0.755* (.129)	0.074* (.014)	-0.067* (.006)
Africa	0.010* (.011)	0.101* (.024)	0.518* (.061)	0.275* (.038)	-0.007 (.005)

Table 10.b: Medium Skill- and Technology-Intensive Manufactures

	Dependent variable: GDP per capita (international $, 2005 Constant Prices)_ lnGDPPCPenn				
	lndnsexp	**lniqi**	**lncger**	**lnpcrdbofgdp**	**lnwavg**
Asia	-0.018*** (.01)	-0.044* (.011)	0.718* (.055)	0.142* (.013)	-0.055* (.004)
Americas	-0.001 (.003)	0.266* (.032)	0.647* (.05)	0.034* (.004)	-0.023* (.002)
Africa	0.010* (.001)	0.050* (.005)	0.291* (.05)	0.000 (.015)	0.005** (.002)

Table 10.c: High Skill- and Technology-Intensive Manufactures

	Dependent variable: GDP per capita (international $, 2005 Constant Prices)_ lnGDPPCPenn				
	lnensexp	**lniqi**	**lncger**	**lnpcrdbofgdp**	**lnwavg**
Asia	0.009 (.005)	-0.062* (.011)	0.971* (.054)	0.077* (.012)	-0.064* (.010)
Americas	0.007* (.002)	0.168* (.049)	0.561* (.078)	0.030* (.003)	-0.025* (.002)
Africa	0.002 (.001)	0.048* (.007)	0.291* (.017)	0.096* (.023)	-0.001 (.001)

Notes: Standard errors are in parentheses.
Standard errors of nonparametric estimates are obtained from bootstrapping (seed 10101)
* significant at 1% level, ** significant at 5% level, *** significant at 10% level.

Table 11: Extended Model: Nonparametric Median Estimates by Emerging Country Group

Table 11.a: Low Skill- and Technology-Intensive Manufactures

	Dependent variable: GDP per capita (international $, 2005 Constant Prices)_ lnGDPPCPenn				
	lncnsexp	**lniqi**	**lncger**	**lnpcrdbofgdp**	**lnwavg**
South	0.010 (.008)	0.173* (.028)	0.523* (.046)	0.217* (.019)	-0.031* (.004)
Emerging South	-0.055* (.017)	0.227* (.040)	1.260* (.069)	0.105* (.011)	-0.038* (.003)

Table 11.b: Medium Skill- and Technology-Intensive Manufactures

	Dependent variable: GDP per capita (international $, 2005 Constant Prices)_ lnGDPPCPenn				
	lndnsexp	**lniqi**	**lncger**	**lnpcrdbofgdp**	**lnwavg**
South	-0.003*** (.001)	0.068* (.01)	0.452* (.033)	0.069* (.014)	0.003 (.002)
Emerging South	0.033* (.009)	0.046* (.011)	0.686* (.087)	0.039* (.009)	-0.054* (.001)

Table 11.c: High Skill- and Technology-Intensive Manufactures

	Dependent variable: GDP per capita (international $, 2005 Constant Prices)_ lnGDPPCPenn				
	lnensexp	**lniqi**	**lncger**	**lnpcrdbofgdp**	**lnwavg**
South	0.003* (.000)	0.033* (.008)	0.424* (.024)	0.060* (.015)	-0.004*** (.002)
Emerging South	0.010* (.001)	0.042* (.014)	0.672* (.149)	0.038* (.018)	-0.047* (.004)

Notes: Standard errors are in parentheses.
Standard errors of nonparametric estimates are obtained from bootstrapping (seed 10101)
* significant at 1% level, ** significant at 5% level, *** significant at 10% level.

Table 12: Extended Model: Nonparametric Median Estimates by Income Group

Table 12.a: Low Skill- and Technology-Intensive Manufactures

	Dependent variable: GDP per capita (international $, 2005 Constant Prices)_ lnGDPPCPenn				
	lncnsexp	**lniqi**	**lncger**	**lnpcrdbofgdp**	**lnwavg**
Non-ldcsids	-0.031* (.010)	0.298* (.031)	0.856* (.074)	0.129* (.010)	-0.052* (.004)
ldcsids	0.024** (.010)	0.065* (.022)	0.560* (.07)	0.276* (.044)	-0.009 (.007)

Table 12.b: Medium Skill- and Technology-Intensive Manufactures

	Dependent variable: GDP per capita (international $, 2005 Constant Prices)_ lnGDPPCPenn				
	lndnsexp	**lniqi**	**lncger**	**lnpcrdbofgdp**	**lnwavg**
Non-ldcsids	0.004 (.003)	0.086* (.010)	0.414* (.044)	0.056* (.008)	-0.030* (.005)
ldcsids	0.002 (.002)	0.025** (.010)	0.510* (.045)	0.071** (.031)	0.007* (.001)

Table 12.c: High Skill- and Technology-Intensive Manufactures by ldcid

	Dependent variable: GDP per capita (international $, 2005 Constant Prices)_ lnGDPPCPenn				
	lnensexp	**lniqi**	**lncger**	**lnpcrdbofgdp**	**lnwavg**
Non-ldcsids	0.005* (.001)	0.064* (.009)	0.547* (.065)	0.066* (.014)	-0.034* (.003)
ldcsids	0.006* (.002)	0.004 (.011)	0.426* (.022)	0.038 (.026)	0.003** (.001)

Notes: Standard errors are in parentheses.
Standard errors of nonparametric estimates are obtained from bootstrapping (seed 10101)
* significant at 1% level, ** significant at 5% level, *** significant at 10% level.

Annex tables

***Table A1.* List of countries in sample**

CCode	Country	Region	Group	Income Group
AFG	Afghanistan*	Asia	South	ldcsids
ARG	Argentina	Americas	Emerging South	Non-ldcsids
BHS	Bahamas, The	Americas	South	ldcsids
BGD	Bangladesh	Asia	South	ldcsids
BLZ	Belize	Americas	South	Non-ldcsids
BEN	Benin	Africa	South	ldcsids
BTN	Bhutan	Asia	South	ldcsids
BOL	Bolivia, Plurinational State of	Americas	South	Non-ldcsids
BRA	Brazil	Americas	Emerging South	Non-ldcsids
BFA	Burkina Faso	Africa	South	ldcsids
BDI	Burundi*	Africa	South	ldcsids
KHM	Cambodia	Asia	South	ldcsids
CMR	Cameroon	Africa	South	Non-ldcsids
CPV	Cape Verde*	Africa	South	ldcsids
CAF	Central African Republic	Africa	South	ldcsids
TCD	Chad	Africa	South	ldcsids
CHL	Chile	Americas	Emerging South	Non-ldcsids
CHN	China*	Asia	Emerging South	Non-ldcsids
COL	Colombia	Americas	Emerging South	Non-ldcsids
COM	Comoros*	Africa	South	ldcsids
CRI	Costa Rica	Americas	South	Non-ldcsids
CIV	Côte d'Ivoire	Africa	South	Non-ldcsids
CUB	Cuba*	Americas	South	Non-ldcsids
DJI	Djibouti*	Africa	South	ldcsids
DMA	Dominica*	Americas	South	ldcsids
DOM	Dominican Republic	Americas	Emerging South	Non-ldcsids
EGY	Egypt	Africa	Emerging South	Non-ldcsids
SLV	El Salvador	Americas	South	Non-ldcsids
ERI	Eritrea*	Africa	South	ldcsids
ETH	Ethiopia*	Africa	South	ldcsids
FJI	Fiji	Asia	South	ldcsids
GMB	Gambia, The	Africa	South	ldcsids
GHA	Ghana	Africa	South	Non-ldcsids
GRD	Grenada*	Americas	South	ldcsids
GTM	Guatemala	Americas	South	Non-ldcsids
GIN	Guinea*	Africa	South	ldcsids
GNB	Guinea-Bissau*	Africa	South	ldcsids
GUY	Guyana	Americas	South	Non-ldcsids
HND	Honduras	Americas	South	Non-ldcsids
IND	India	Asia	Emerging South	Non-ldcsids
IDN	Indonesia	Asia	Emerging South	Non-ldcsids
JAM	Jamaica	Americas	South	ldcsids
JOR	Jordan	Asia	Emerging South	Non-ldcsids
KEN	Kenya	Africa	Emerging South	Non-ldcsids
KOR	Korea, Republic of	Asia	Emerging South	Non-ldcsids
LAO	Lao People's Dem. Rep.	Asia	South	ldcsids
LBN	Lebanon*	Asia	Emerging South	Non-ldcsids

CCode	Country	Region	Group	Income Group
LSO	Lesotho*	Africa	South	ldcsids
LBR	Liberia*	Africa	South	ldcsids
MDG	Madagascar	Africa	South	ldcsids
MWI	Malawi	Africa	South	ldcsids
MYS	Malaysia	Asia	Emerging South	Non-ldcsids
MLI	Mali	Africa	South	ldcsids
MUS	Mauritius	Africa	South	ldcsids
MEX	Mexico	Americas	Emerging South	Non-ldcsids
MNG	Mongolia	Asia	South	Non-ldcsids
MAR	Morocco	Africa	Emerging South	Non-ldcsids
MOZ	Mozambique	Africa	South	ldcsids
NAM	Namibia*	Africa	South	Non-ldcsids
NPL	Nepal	Asia	South	ldcsids
NIC	Nicaragua	Americas	South	Non-ldcsids
NER	Niger	Africa	South	ldcsids
PAK	Pakistan	Asia	Emerging South	Non-ldcsids
PAN	Panama	Americas	South	Non-ldcsids
PRY	Paraguay	Americas	South	Non-ldcsids
PER	Peru	Americas	Emerging South	Non-ldcsids
PHL	Philippines	Asia	Emerging South	Non-ldcsids
RWA	Rwanda	Africa	South	ldcsids
KNA	Saint Kitts and Nevis*	Americas	South	ldcsids
VCT	Saint Vincent and the Grenadines*	Americas	South	ldcsids
WSM	Samoa	Asia	South	ldcsids
STP	Sao Tome and Principe*	Africa	South	ldcsids
SEN	Senegal	Africa	South	ldcsids
SYC	Seychelles*	Africa	South	ldcsids
SLB	Solomon Islands*	Asia	South	ldcsids
ZAF	South Africa	Africa	Emerging South	Non-ldcsids
LKA	Sri Lanka	Asia	South	Non-ldcsids
SUR	Suriname	Americas	South	Non-ldcsids
TZA	Tanzania, United Republic of	Africa	South	ldcsids
TGO	Togo	Africa	South	ldcsids
TON	Tonga*	Asia	South	ldcsids
TUN	Tunisia	Africa	Emerging South	Non-ldcsids
TUR	Turkey	Asia	Emerging South	Non-ldcsids
UGA	Uganda	Africa	South	ldcsids
URY	Uruguay	Americas	Emerging South	Non-ldcsids
VNM	Viet Nam	Asia	Emerging South	Non-ldcsids
ZMB	Zambia	Africa	South	ldcsids
ZWE	Zimbabwe*	Africa	South	Non-ldcsids

Note: ldcsids: Least developed countries and small island developing States.
* not included in the extended model

Source: United Nations

Table A2. **Description and sources of variables**

Variable/code	Description	Source
GDPPCpenn	GDP per capita (international $, 2005 Constant Prices, Chain series)	PWT 6.3, Center for International Comparisons of Production, Income and Prices at the University of Pennsylvania
CNSEXP	Share of low skill- and technology-intensive manufactures as a percentage of total merchandise exports	UN COMTRADE HS 4-digit, processed by UNCTAD
DNSEXP	Share of medium skill- and technology-intensive manufactures as a percentage of total merchandise exports	UN COMTRADE HS 4-digit, processed by UNCTAD
ENSEXP	Share of high skill- and technology-intensive manufactures as a percentage of total merchandise exports	UN COMTRADE HS 4-digit, processed by UNCTAD
IQI	Institutional Quality Index	
i. Economic IQI	Legal and property rights	Economic Freedom Index dataset
	Law and order	PRS Group ICRG database
	Bureaucratic quality	PRS Group ICRG database
	Corruption	PRS Group ICRG database
	Democratic accountability	PRS Group ICRG database
	Government stability	PRS Group ICRG database
	Independent judiciary	POLCON Henisz Dataset
	Regulation	Economic Freedom Index dataset
ii. Social IQI	Press freedom	Economic Freedom Index dataset
	Civil liberties	Economic Freedom Index dataset
	Physical integrity index	CIRI Human Rights Data Project
	Empowerment rights index	CIRI Human Rights Data Project
	Freedom of association	CIRI Human Rights Data Project
	Women's political rights	CIRI Human Rights Data Project
	Women's economic rights	CIRI Human Rights Data Project
	Women's social rights	CIRI Human Rights Data Project
iii. Political IQI	Executive constraint	Polity IV Project
	Political rights	Economic Freedom Index dataset
	Index of democracy	PRIO Dataset
	Polity score	Polity IV Project
	Lower legislative	POLCON Henisz Dataset
	Upper legislative	POLCON Henisz Dataset
	Independent sub-federal units	POLCON Henisz Dataset
CGER	Combined gross enrolment ratio	UNESCO Education Database
PCRDBOFGDP	Private credit by deposit money banks and other financial institutions as a percent of GDP	World Bank Financial Structure Dataset, World Bank 2009
WAVG	Average of effectively applied rates by trading partners weighted by the total imports of trading partner countries	UNCTAD Trade Analysis and Information System (TRAINS) Database

Note: All variables are converted in logs, denoted by "ln" in the text, tables and figures.

UNCTAD Study Series on

POLICY ISSUES IN INTERNATIONAL TRADE AND COMMODITIES

No. 1 Erich Supper, **Is there effectively a level playing field for developing country exports?**, 2001, 138 p. Sales No. E.00.II.D.22.

No. 2 Arvind Panagariya, **E-commerce, WTO and developing countries**, 2000, 24 p. Sales No. E.00.II.D.23.

No. 3 Joseph Francois, **Assessing the results of general equilibrium studies of multilateral trade negotiations**, 2000, 26 p. Sales No. E.00.II.D.24.

No. 4 John Whalley, **What can the developing countries infer from the Uruguay Round models for future negotiations?**, 2000, 29 p. Sales No. E.00.II.D.25.

No. 5 Susan Teltscher, **Tariffs, taxes and electronic commerce: Revenue implications for developing countries**, 2000, 57 p. Sales No. E.00.II.D.36.

No. 6 Bijit Bora, Peter J. Lloyd, Mari Pangestu, **Industrial policy and the WTO**, 2000, 47 p. Sales No. E.00.II.D.26.

No. 7 Emilio J. Medina-Smith, **Is the export-led growth hypothesis valid for developing countries? A case study of Costa Rica**, 2001, 49 p. Sales No. E.01.II.D.8.

No. 8 Christopher Findlay, **Service sector reform and development strategies: Issues and research priorities**, 2001, 24 p. Sales No. E.01.II.D.7.

No. 9 Inge Nora Neufeld, **Anti-dumping and countervailing procedures – Use or abuse? Implications for developing countries**, 2001, 33 p. Sales No. E.01.II.D.6.

No. 10 Robert Scollay, **Regional trade agreements and developing countries: The case of the Pacific Islands' proposed free trade agreement**, 2001, 45 p. Sales No. E.01.II.D.16.

No. 11 Robert Scollay and John Gilbert, **An integrated approach to agricultural trade and development issues: Exploring the welfare and distribution issues**, 2001, 43 p. Sales No. E.01.II.D.15.

No. 12 Marc Bacchetta and Bijit Bora, **Post-Uruguay round market access barriers for industrial products**, 2001, 50 p. Sales No. E.01.II.D.23.

No. 13 Bijit Bora and Inge Nora Neufeld, **Tariffs and the East Asian financial crisis**, 2001, 30 p. Sales No. E.01.II.D.27.

No. 14 Bijit Bora, Lucian Cernat, Alessandro Turrini, **Duty and quota-free access for LDCs: Further evidence from CGE modelling**, 2002, 130 p. Sales No. E.01.II.D.22.

No. 15 Bijit Bora, John Gilbert, Robert Scollay, **Assessing regional trading arrangements in the Asia-Pacific**, 2001, 29 p. Sales No. E.01.II.D.21.

No. 16 Lucian Cernat, **Assessing regional trade arrangements: Are South-South RTAs more trade diverting?**, 2001, 24 p. Sales No. E.01.II.D.32.

No. 17 Bijit Bora, **Trade related investment measures and the WTO: 1995-2001**, 2002.

No. 18 Bijit Bora, Aki Kuwahara, Sam Laird, **Quantification of non-tariff measures**, 2002, 42 p. Sales No. E.02.II.D.8.

No. 19 Greg McGuire, **Trade in services – Market access opportunities and the benefits of liberalization for developing economies**, 2002, 45 p. Sales No. E.02.II.D.9.

No. 20 Alessandro Turrini, **International trade and labour market performance: Major findings and open questions**, 2002, 30 p. Sales No. E.02.II.D.10.

No. 21 Lucian Cernat, **Assessing south-south regional integration: Same issues, many metrics**, 2003, 32 p. Sales No. E.02.II.D.11.

No. 22 Kym Anderson, **Agriculture, trade reform and poverty reduction: Implications for Sub-Saharan Africa**, 2004, 30 p. Sales No. E.04.II.D.5.

No. 23 Ralf Peters and David Vanzetti, **Shifting sands: Searching for a compromise in the WTO negotiations on agriculture**, 2004, 46 p. Sales No. E.04.II.D.4.

No. 24 Ralf Peters and David Vanzetti, **User manual and handbook on Agricultural Trade Policy Simulation Model (ATPSM)**, 2004, 45 p. Sales No. E.04.II.D.3.

No. 25 Khalil Rahman, **Crawling out of snake pit: Special and differential treatment and post-Cancun imperatives**, 2004.

No. 26 Marco Fugazza, **Export performance and its determinants: Supply and demand constraints**, 2004, 57 p. Sales No. E.04.II.D.20.

No. 27 Luis Abugattas, **Swimming in the spaghetti bowl: Challenges for developing countries under the "New Regionalism"**, 2004, 30 p. Sales No. E.04.II.D.38.

No. 28 David Vanzetti, Greg McGuire and Prabowo, **Trade policy at the crossroads – The Indonesian story**, 2005, 40 p. Sales No. E.04.II.D.40.

No. 29 Simonetta Zarrilli, **International trade in GMOs and GM products: National and multilateral legal frameworks**, 2005, 57 p. Sales No. E.04.II.D.41.

No. 30 Sam Laird, David Vanzetti and Santiago Fernández de Córdoba, **Smoke and mirrors: Making sense of the WTO industrial tariff negotiations**, 2006, Sales No. E.05.II.D.16.

No. 31 David Vanzetti, Santiago Fernandez de Córdoba and Veronica Chau, **Banana split: How EU policies divide global producers**, 2005, 27 p. Sales No. E.05.II.D.17.

No. 32 Ralf Peters, **Roadblock to reform: The persistence of agricultural export subsidies**, 2006, 43 p. Sales No. E.05.II.D.18.

No. 33 Marco Fugazza and David Vanzetti, **A South-South survival strategy: The potential for trade among developing countries**, 2006, 25 p.

No. 34 Andrew Cornford, **The global implementation of Basel II: Prospects and outstanding problems**, 2006, 30 p.

No. 35 Lakshmi Puri, IBSA: **An emerging trinity in the new geography of international trade**, 2007, 50 p.

No. 36 Craig VanGrasstek, **The challenges of trade policymaking: Analysis, communication and representation**, 2008, 45 p.

No. 37 Sudip Ranjan Basu, **A new way to link development to institutions, policies and geography**, 2008, 50 p.

No. 38 Marco Fugazza and Jean-Christophe Maur, **Non-tariff barriers in computable general equilibrium modelling**, 2008, 25 p.

No. 39 Alberto Portugal-Perez, **The costs of rules of origin in apparel: African preferential exports to the United States and the European Union**, 2008, 35 p.

No. 40 Bailey Klinger, **Is South-South trade a testing ground for structural transformation?**, 2009, 30 p.

No. 41 Sudip Ranjan Basu, Victor Ognivtsev and Miho Shirotori, **Building trade-relating institutions and WTO accession**, 2009, 50 p.

No. 42 Sudip Ranjan Basu and Monica Das, **Institution and development revisited: A nonparametric approach**, 2010, 26 p.

No. 43 Marco Fugazza and Norbert Fiess, **Trade liberalization and informality: New stylized facts**, 2010, 45 p.

No. 44 Miho Shirotori, Bolormaa Tumurchudur and Olivier Cadot, **Revealed factor intensity indices at the product level,** 2010, 55 p.

No. 45 Marco Fugazza and Patrick Conway, **The impact of removal of ATC Quotas on international trade in textiles and apparel,** 2010, 50 p.

No. 46 Marco Fugazza and Ana Cristina Molina, **On the determinants of exports survival,** 2011, 40 p.

No. 47 Alessandro Nicita, **Measuring the relative strength of preferential market access,** 2011, 30 p.

No. 48 Sudip Ranjan Basu and Monica Das, **Export structure and economic performance in developing countries: Evidence from nonparametric methodology,** 2011, 60 p.

Copies of UNCTAD Study series on *Policy Issues in International Trade and Commodities* may be obtained from the Publications Assistant, Trade Analysis Branch (TAB), Division on International Trade in Goods and Services and Commodities (DITC), United Nations Conference on Trade and Development, Palais des Nations, CH-1211 Geneva 10, Switzerland (Tel: +41 22 917 4644). These studies are accessible on the website at http://www.unctad.org/tab.

QUESTIONNAIRE

UNCTAD Study series on

POLICY ISSUES IN INTERNATIONAL TRADE AND COMMODITIES

(Study series no. 48: Export structure and economic performance in developing countries: Evidence from nonparametric methodology)

Readership Survey

Since 1999, the Trade Analysis Branch of the Division on International Trade in Goods and Services, and Commodities of UNCTAD has been carrying out policy-oriented analytical work aimed at improving the understanding of current and emerging issues in international trade and development. In order to improve the quality of the work of the Branch, it would be useful to receive the views of readers on this and other similar publications. It would therefore be greatly appreciated if you could complete the following questionnaire and return to:

Trade Analysis Branch, DITC
Rm. E-8065
United Nations Conference on Trade and Development
Palais des Nations, CH-1211 Geneva 10, Switzerland
(Fax: +41 22 917 0044; E-mail: tab@unctad.org)

1. Name and address of respondent (optional):

____

____

____

____

2. Which of the following describes your area of work?

Government	☐	Public enterprise	☐
Private enterprise institution	☐	Academic or research	☐
International organization	☐	Media	☐
Not-for-profit organization	☐	Other (specify)	________________

3. In which country do you work? ____

4. Did you find this publication to your work? ☐ Very useful ☐ Of some use ☐ Little use

5. What is your assessment of the contents of this publication?
☐ Excellent ☐ Good ☐ Adequate ☐ Poor

6. Other comments:

____

____

____

____