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Income Convergence Trends in Regional Agreements [♣,♣♣]

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This study examines the extent of income convergence trends in regional agreements all over the world. Traditional economic theory holds that poor countries, with low ratios of capital to labor, have high marginal products of capital and thereby tend to grow at high rates. However, this paper focuses on another aspect: regional agreements. Income convergence is related with this regional agreement, especially in the case of South-South countries. Trade liberalization may have an impact on incomes to the extent of bringing the sort of convergence. **JEL F43; F55.**

1. Introduction

World trade has increased greatly since the world worlds. The GATT, WTO, and IMF have contributed to this trend. Tariffs, import quotas, and export subsidies have been reduced or abolished. On the other hand, a new trend toward regionalization has appeared. The regionalism movement of the 1980s spurred interest in the economic effects of regionalization.

This study examines the extent of income convergence in regional agreements. Much research has been presented regarding this issue; however, little study has been assessed whether or not regional integration stimulates the convergence of income across its countries. In the EU, convergence of income has been occurring; however, Carmignani (1996), Karras (1997) and Venables (2003) showed a substantial lack of convergence in other areas. They found that changes in disparity of income are not related to a simple trend. In neoclassical growth models, the growth rate of per capita income tends to be inversely related to its starting level. Poor countries, with low ratios of capital per capita to labor, have high marginal products of capital and thereby tend to grow at high rates. The tendency for low income countries to grow at high rates is reinforced in extensions of this neoclassical model that account for international mobility of capital and technology. If countries are similar with respect to structural parameters for preferences and technology, poor countries tend to grow faster than rich countries. Thus, there is a force that promotes convergence in levels of per capita income among countries. There have been several attempts at promoting free trade on a regional basis. There may be relationship between this movement and income convergence (Ben, 1993, 1996). The purpose of this short paper is to examine regional income convergence all over the world.

2. Empirical Method

Let y_i and $y_{average}$ indicate the log of real per capita income in country i and the average log of real per capita income in the area. t presents a generic time.

First, it is necessary to check a time-series unit root in the process (y_{it} - $y_{averaget}$). However, time-series unit root tests have been criticized for limited power and poor size properties (Haldrup and Jansson, 2006). A panel analysis to unit root test provides another suitable method. In this paper, the cross-sectional and time-series information are combined, thus inducing a significant improvement in the empirical analysis (following Im et al., 2003).

The time-varying difference (y_i - $y_{average}$) is assumed to be generated by an AR (1) process.

$$(y_{it} - y_{averaget}) = \varphi_i(y_{it-1} - y_{averaget-1}) + X_{it}\delta_i + \varepsilon_{it} \quad (1)$$

Using the notation $Y_t \equiv (y_{it} - y_{averaget})$,

$$\Delta Y_{it} = -\alpha_i Y_{it-1} + X_{it}\delta_i + \varepsilon_{it} \quad (2)$$

Where $\alpha_i = (1 - \varphi_i)$ and $\Delta Y_{it} = Y_{it} - Y_{it-1}$, X are exogenous regressors that consist of a constant and a linear trend, and δ_i and α_i are parameters to be estimated, and ε_{it} is assumed to be white noise. The model can be extended to allow for lagged effects of the dependent variable ΔY_i:

$$\Delta Y_{it} = -\alpha_i Y_{it-1} + \sum_{j=1}^{J} \Delta\, Yit - j + X_{it}\delta_i + \varepsilon_{it} \qquad (3)$$

Given AR model (3), the null hypothesis of unit roots becomes:

$\alpha_i = 0$ or,

$\alpha_i > 0$, i= 1, 2, …..N (4)

N is the number of countries. Rejection of the null means that the stochastic process Y_i converges for all i, indicating that per capita incomes across countries tend to converge.

One important problem remains in performing the convergence test, which is the decision of how many lags of ΔY_i should be added to (3) and what variables the set of regressors should be included in X. The lag structure is chosen to minimize the Schwartz Information Criterion. It is defined as -2(l/T) + klog(T)/T (l: the value of the log of the likelihood function using the k estimated parameters; k: the number of parameters; T: observations). To estimate the equation, the countries of each group are pooled together.

The GDP data for the test are in constant prices and adjusted for PPP. The sample period is basically divided into two: after the regional agreement and before. The data are from International Financial Statistics (IMF). Rejection of the null can be interpreted as evidence that income per capita converges across countries in a regional integration agreement as mentioned before.

3. Results of empirical study

The results are shown in the table below:

Table. *Regional Integration Agreement*

Regional Integration Agreement	Sample Period	t value	Standard error of deviation
ASEAN (Indonesia, Malaysia, Philippines, Singapore, Thailand)	1967-2005	1.805	3.726
CACM (El Salvador, Guatemala, Honduras, Nicaragua (1991~), Costa Rica)	1967-2005	-1.528***	4.550

CARICOM (Antigua and Barbuda, Bahama, Barbados, Belize, Dominica (1974~), Grenada, Guyana, Haiti, Jamaica, St. Kitts and Nevis, St. Lucia, St. Vincent Suriname, Montserrat (1977~), Trinidad and Tobago)	1973-2005	-1.880***	3.686
CIS (Armenia (1994~), Azerbaijan (1996~), Belarus, Georgia, Kyrgyz Republic, Kazakhstan, Moldova, Russia, Turkmenistan, Ukraine)	1993-2005	-0.663	2.199
ECOWAS (Benin, Burkina Faso, Cape Verde, Cote d'Ivoire, Gambia, Ghana, Guinea-Bissau (1987~), Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone, Togo)	1975-2005	-2.505***	4.392
SADC (Angola, Botswana, Congo, Lesotho, Malawi, Mauritius, Mozambique, Namibia (1986~), Seychelles, South Africa, Swaziland, Tanzania, Zambia, Zimbabwe)	1992-2005	-0.640*	2.034
APEC (Australia, Brunei, Canada, Chile, China, Hong Kong, Indonesia, Japan, Korea, Malaysia, Mexico, New Zealand, Papua New Guinea, Peru, Philippines, Russia, Singapore, Taiwan, Thailand, US, Vietnam)	1989-2005	-0.225	1.936
EU 15 (Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxemburg, Netherlands, Portugal, Spain, Sweden, UK)	1995-2005	1.982	8.927
NAFTA (Canada, Mexico, US)	1994-2005	-1.634**	3.293

Note. ***, **, and * denote rejection of the null hypothesis at 1%, 5%, and 10% respectively. Ten countries joined in the EU; however, because little sample data were available, the former EU was employed.

The results are interesting. Convergence of per capita income is not necessarily a characteristic of North-North integration. The null hypothesis is rejected for some developing countries. These developing or emerging economies can be characterized as cases of South-South integration. The convergence may be related to the formation of the regional integration agreement, especially with regard to trade liberalization.

On the other hand, ASEAN and CIS, for example, do not converge to the regional mean. In these countries, average income is catching up those in industrial economies. The North-North integration (e.g., EU) does not appear to generate convergence.

4. Conclusion

This paper examined the hypotheses that regional agreement may contribute to income convergence. Income differentials fall when countries begin to remove trade barriers among themselves. One of the important conclusions is that South-South integration does not necessarily imply widening intraregional disparities. The main element behind this convergence is diminishing returns to reproducible capital. Poor countries, with low ratios of capital to labor, have high marginal products of capital and thereby tend to grow at high rates. On the other hand, ASEAN and CIS, for example, fail to converge. This finding may reflect the fact that their incomes are catching up to those of other industrialized countries. Developed countries also do not exhibit convergence. However, these agreements might lead to a form of convergence to the bottom.

This study brings to light some possibilities for further research. For example, a country should consider which countries should be selected for their economic growth. Choosing an appropriate country or countries with which to engage in regional agreements is important for their economic growth. It would be of interesting future research.

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♣♣ The views expressed here are personal to the authors and do not necessarily reflect those of the other staff, faculty or students of this or any other institution.

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Book Review:

Simon Feeny and Matthew Clarke. *The Millennium Development Goals and Beyond: International Assistance to the Asia-Pacific.* Published by Palgrave Macmillan. London. PP 240. 9-78023-022-443-8

Global development has never taken such precedence since the emergence of the Millennium Development Goals in the year 2000. Since then nations have been striving to attain basic minimum levels of sustenance and well-being in order to meet the goals as outlined in the objectives. *Millennium Development Goals and Beyond: International Assistance to the Asia-Pacific* provides readers with a concise review of the status of the MDGs in the Asia-Pacific region, while identifying many of the issues and highlighting some of the solutions surrounding the progression of basic development. Professors Feeny and Clarke commence and conclude with a bold proclamation, stating that the aims of the United Nations will in fact fall short of its intended targets within Asia-Pacific. The sad reality of poor growth and development are sighted clearly as outcomes of poor governance, inefficient and ineffective aid delivery, lack of proper NGO involvement, and lastly ownership of the Development Goals by national governments. The book is effectively organized into three parts; the first outlining an overview of the MDGs in the Asia-Pacific region, while providing a general account for the roles of foreign aid and non-governmental organizations in achieving the MDGs; the second component details four case studies of pacific Asian nations on tracking their progression to realizing the UN goals; and lastly a conclusion offering fundamental solutions for combating the issues involved in effective development (or lack thereof) within south-east Asia.

The first part of the text presents a series of claims explaining the inconsistencies of development within south-east Asia, and how foreign aid and non-governmental organizations can assist in strengthening the development process. One of the key concerns Feeny and Clarke discuss is the lack of effective governance within nations to combat corruption, improve governance, and undertake vital policy reforms in ensuring that international aid is properly allocated for any growth to take place. Though the focus of the book lies with how foreign aid and NGOs can assist with the completion of the targets, the text argues that even though the achievement of the objectives are impossible for many nations, they can be accomplished by tailoring the stated aims to realistic yet ambitious goals. The authors emphasize the need for governments to provide an environment where private sector can take the lead with social sector delivery and infrastructure, in order to push for effective growth within dire economies. Furthering this statement, the book firmly epitomizes the requirement for recipient government ownership and commitment to development, which is key in determining the impact of foreign aid within developing systems.

In looking at the role of foreign aid in achieving the MDGs, the evident consensus remains that aid is most effective in combination with good macroeconomic policies. An interesting revelation established by Feeny and Clarke, is when donor driven policy reform takes place aid tends to be ineffective, thereby emphasizing the need for recipient government ownership of assistance and development. In addition, the authors set up a valid argument in their support for multilateral aid in conjunction with Program Based Approaches (PBAs) and Sector Wide Approaches (SWAps), which enables limitations in risk and greater efficiency in the delivery of foreign aid to enforce effective development. However both professors highlight the need for caution when dealing with multilateral aid, as with more donors operating within a country, additional time is spent in meeting the requirements and agendas for each donor, exacerbating the issue of inefficiency and increased transaction costs; thus there needs to be a medium in determining the number of donors channeling funds into a nation to remain effective. Throughout the book, Feeny and Clarke accentuate the invaluable strategy of utilizing aid via PBAs and SWAps, which provides aid in the form of projectsincreasing the quality of aid.

In observing the role of non-governmental organizations in realizing the MDGs, the book sheds light into the immense disparity existing between the development of rural and urban areas within Asia-Pacific. The main actor in solving this concern is argued to be NGOs, which inherently strengthen civil society, democracy and governance. For development to occur Feeny asserts that intervention must occur at the grass-roots level, where NGOs can address state and market failures through their interaction and connection with local communities. Since they provide services at lower costs, such organizations are therefore more effective in implementing programme involvement at both the micro and meso levels. Based on this assertion, the professors firmly claim that NGOs can positively impact the achievement of the MDGs by targeting interventions explicitly to achieve various aims, working at the micro level focusing on community development.

The second component of the book is genuinely the strongest, as the case studies illustrate the reality of Feeny and Clarke's claims. Charted with statistical analysis, the authors address specific issues surrounding the goal's achievement within the nations of Papua New Guinea, Cambodia, The Solomon Islands, and Thailand. The four case studies each exemplify specific traits that inhibit the realization of the MDGs within Asia-Pacific. Papua New Guinea highlights the importance of governance to the achievement of the UN objectives, while Cambodia emphasizes the importance of improving aid efficiency. In the case of the Solomon Islands, Feeny and Clarke provide an effective approach in development when dealing with a post-conflict environment, while in the context of Thailand the authors offer strategies to aid a well performing middle-income country that is in the midst of surpassing the targets set out by the MDGs. Throughout the case studies, the economists articulately link the importance of NGO involvement and foreign aid, as sighted in the previous section, and intertwine their strategies put forth to aid the four nations, providing a building block to all countries within the region facing similar issues. In coordination with the Paris Declaration of 2005, the professors highlight the importance of ownership, alignment of development assistance and development policies, harmonization, management of aid, and mutual accountability to accomplishing the UN goals. With the combination of the Paris Declaration and the strategies sighted by Feeny and Clarke, the impact of aid from donors and social services provided by NGOs can be truly immense.

The final section provides readers with a solid conclusion of Feeny and Clarke's claims but is honestly the weakest component of the text. As various conclusions and recommendations are set out by both Feeny and Clarke, there is a lack of depth in detailing any alternative approaches to combating some of the issues faced by developing nations as sighted within the text. Other than that, the book does allow readers to broaden their perspective in regards to the effectiveness of aid and NGO involvement within weak economies as tools to overcome poverty and lack of basic development. Feeny and Clarke undoubtedly provide a solid text detailing the true impact of international assistance and NGO intervention in realizing the Millennium Development Goals, while enabling readers and academics alike to expand upon the ideas developed, and further the developmental process to fulfilling the UN objectives globally.

Sanjay Ignatius Raja

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