

Briefing Notes in Economics

'Helping to de-mystify economics since 1992'

Indexed with the Journal of Economic Literature

Issue No. 79, December 2008/January 2009 <http://www.richmond.ac.uk/bne> ISSN 0968-7017

Government Size, Government Effectiveness, and National Savings Rates*

William DiPietro*

Department of Business Administration, Daemon College, Amherst, NY 14226, USA.

First version received on 23rd April 2005

Final version received on 21st January 2009

Instead of conducting a typical analysis that centres on age population variables within a life cycle model to empirically explain national savings rates across countries, this paper focuses on government. In particular, the paper uses cross country regression analysis to test the hypothesis that two government variables, government size and government effectiveness, affects national savings rates. The major finding is that, whether government variables are used alone or in combination with other variables to explain national savings rates, government variables matter with regard to national savings rates. If the results hold true, the major policy implication of the study is that national savings rates can be enhanced by improving government effectiveness or by reducing government size. **JEL Codes: E2, E6, O5.**

Saving is an essential element that needs to be taken into consideration in order to insure the solid economic functioning of a nation's economy.¹ National savings rates differ across countries. These variations in time preference choices across nations, these differences in national savings rates, are a primary source of differences in economic performance between countries. Conventional economic wisdom maintains that higher savings leads to greater capital formation which in turn leads to greater economic growth. Within this framework, under the assumption that growth is positively related to savings, identifying the determinants of savings rates is a highly relevant and worthwhile task. In a world in which a large segment of mankind is living on pitifully low levels of income per capita, anything that can be done to increase our knowledge of the growth process, and, with the acquired knowledge, to increase economic growth, is a laudable goal. The purpose of this paper is to focus on two prominent personality characteristics of government as potential savings rates determinants candidates. The two characteristics are government size and government effectiveness.

Currently, there is a lot of interest in national savings rates and its determinants. This is especially the case in the United

States. The intense U.S. concern in the area undoubtedly stems from the fact that, recently, the U.S. has been experiencing both high government debts and low levels of private savings. In addition, a large portion of the U.S. labour force, the baby boomers, is now headed toward retirement. Summers and Carroll in an article (Summers and Carroll 1987), "Why Is U.S. National Saving So Low?", profile the trends in the various components of U.S. national savings and offer some explanations for the poor U.S. savings performance.

The empirical work on cross country national savings rates is extensive. Most of the empirical work on saving rates is theoretically housed in a Modigliani style life cycle model. The fundamental notion of the model is that, in order to maintain the same level of consumption over a lifetime, people save during their working years and dissave during retirement. This leads to the common inverted V relationship between an individual's wealth and an individual's age. A typical specification in the empirical work using the life cycle framework is to express savings as a linear function of age structure variables along with GDP per capita, and growth in GDP per capita. Just one example among the multitude of such studies is Kokila's article (Kokila 1994). Kokila uses a life cycle model to estimate savings rates for a cross section of 129 countries. He finds that age structure variables, such as the percentage of the population 65 years and older, exerts a negative effect on national savings.

This paper tries an entirely different tactic from the life cycle approach in the cross country analysis of national savings rates. Instead of using life cycle variables as a basis, it starts with government variables as the foundational variables to explain savings rates across countries. Subsequently, it adds other variables, including age structure variables from the life cycle model. The underlying hope of the analysis is that by taking an alternative approach instead of following the well-established path, new perspectives and

¹ For a good review of the theoretical relationship between savings and economic growth see Cesaranto's article (Cesaranto 1999) in the *Cambridge Journal of Economics* entitled "Savings and Economic Growth in Neoclassical Theory (Critical Survey)".

insights will be garnished in understanding savings rates.

To accomplish this objective, the paper is divided into four sections. After a brief literature review, the first section discusses the two vital government variables and the theoretically expected relationship between each variable and national savings rates. The second section lays out the equation specification, discusses the variables to be used in the empirical work, and identifies the variable sources. The third section reports the results of cross country regressions of national savings rates on government size and effectiveness. Finally, the fourth section provides a brief conclusion.

I. The Effect of Government Size and Effectiveness on Savings Rates

The essence of the life cycle theory is that individual's savings and wealth accumulation vary in a patterned way over an individual's lifetime. The origins of the theory can be traced to a 1954 article by Brumberg and Modigliani (Brumberg and Modigliani 1954). The model's primary motive for savings is the maintenance of an individual's consumption during retirement. Assuming that an individual earns the same amount of money every year during his working years, that the interest rate is zero, that he wants to maintain an even rate of consumption over his lifetime, and that he knows with certainty when he is going to retire and when he is going to die, the basic life cycle theory predicts that an individual will save at a constant rate up to retirement, dissave at a constant rate thereafter, and end up penniless at death.

If one modifies the assumptions to allow for a positive interest rate then the model simply predicts an inverted U relationship between age and wealth instead of an inverted V (Ando and Modigliani 1963). Dropping the assumption of prior knowledge of the exact date of death, results in higher levels of saving after retirement and nonzero wealth at death (Menaham Yaari 1965). This occurs

because in an uncertain world individuals do not know whether or not they are going to live longer than they expect. Theoretically, the institution of social security is expected to lead to a reduction in private savings and wealth accumulation over an individual's lifetime (Martin Feldstein 1974).

Additional motives for savings besides retirement have also been considered. These include the bequest motive, the desire to leave money to children (Menchik and David 1983), and the precautionary motive, savings to insure against unexpected negative events such as unemployment or sickness.

The relationship between taxes and private savings is extensively reviewed in by Bernheim (Bernheim 1999).

Empirical studies have generally confirmed the typical inverted U shaped wealth-age profile anticipated by the life cycle theory. For instance, Peter Diamond and Jerry Hausman, using longitudinal data, find that individuals generally amass wealth until retirement and subsequently deplete it (Diamond and Hausman 1984).

One of the more pertinent articles with regard to the present study, and one likely to be sympathetic to the use of alternative eclectic approaches to the analysis of savings, is Sebastian Edwards article, "Why are Saving Rates so Different Across Countries?: An International Comparative Analysis" (Edwards 1995). Edwards maintains that it is appropriate to split the explanation of savings into an explanation of both private and public savings. He is dismayed at the almost complete lack of economic theory and empirical work regarding the determinants of government saving. He decries the almost singular emphasis on private saving in the economic literature, and the widespread disregard of government savings and government's role, especially given that in many instances government savings represents a substantial proportion of total country savings. In his concluding remarks, among other things, he

suggests that that government savings is sensitive to political stability, that public savings exerts a negative impact on private savings, that the level of development of financial markets matter for savings, that institutions need to be created to promote political stability, and that there is a real need to build an overall institutional environment that is favourable to saver confidence.

The life cycle approach targets age as the primary determinant of savings and subsequently adds additional variables from modifications and adjustments to the basic theory. In the main, the life cycle model attempts to explain household savings. The new approach taken here begins from the proposition that government is the major operating force in determining the total amount of savings in an economy. The approach focuses, not just on household savings, but on total national savings, at societal savings as a whole. It embraces the point of view that government savings is a major component of total savings in society and that government size, government effectiveness, and government policy have a profound effect, not only on government savings itself, but on household savings, and business savings as well.

The three components of national savings are government savings, private savings, and business savings. The government has a commanding institutional position in an economy, and, the bigger the size of a government, the greater is its influence and control. The government is in a unique situation in that it can decide both its own savings as well as influence the other two components of savings through policy as well as by persuasion. Given that thriftiness is a psychological disposition, the government can affect the habit of thrift by implementing changes in the cultural milieu, through modifications in the educational and socialization process, or by adaptations and adjustments in the institutional setting.

It is anticipated that there will be a negative relationship between government size and national savings rates. There are a number

of reasons for this. First, larger governments are more likely to run into finance limitations, but, never the less, they still have to be financed. If they are financed by debt, it can lead to higher expected future taxes or greater expected future inflation. Either of these expectations is detrimental to household savings rates as each favours present spending over future spending.

Second, it seems reasonable to assume that bigger governments are more profligate than smaller governments. That is to say, a realistic assumption is that the larger the size of a government, the more prone the government is to overspending. This means it is expected that larger governments are associated with smaller government savings per se and, all other things being equal, with smaller national savings. It must be pointed out, however, that even if we assume there is no association whatever between government size and government savings proper, the same negative relationship between government size and national savings, *ceteris paribus*, can be obtained by alternatively assuming that government is a dissaver while, on balance, the private sector is a saver. Under this scenario, any increase in the size of the government (reduction in the private sector), all other things being the same, leads to a reduction in national savings. Third, the size of the government (and the extent of government savings) is not independent of private savings. Quite the contrary, the size of the government is a major institutional feature of the economy, and is likely to have negative ramifications on private savings. Bigger government is more likely to provide services that could otherwise only be provided by the private sector through their own savings. If the government provides a nice social safety network with generous unemployment compensation and disability coverage, then there is reduced need for private precautionary savings. In the measure the government provides for old age, there is less incentive for private savings for retirement. To the degree the government provides for health care there is diminished

need for families to set money aside for potential sickness. And, if the government provides free education, then the need for families to save for their children's education diminishes. In general, to the extent that larger government is by nature a more paternalistic government, larger government is likely to lead to reductions in private savings. The more paternalistic the government, the less need there is for private savings.

There are, of course, a whole host of other potential negative consequences of the government size on the savings of the private sector. Larger government may reduce the overall competitiveness of an economic system leading to reductions in business saving. Financing government dissaving through borrowing has the potential to crowd out business investment thereby reducing the rate of return from business savings by driving up the cost of capital.

While government size is predicted to have a negative effect on national savings, the second government trait, government effectiveness, is expected to have a positive impact. The more effective the government, the less resources will be needed to provide any given level of government services. This places a smaller strain on national savings for any given level of government service. With greater government effectiveness, public investment is more likely to be undertaken more successfully, allocating and channelling government investment into its more productive uses. Better public infrastructure resulting from right government investment, can lower the cost of doing business in a country, thereby attracting greater private savings from higher rates of return. In addition, more effective government means that the institutional machinery that mobilizes savings, and that facilitates the transfer of savings into investment, is likely to exist and to function smoothly. Psychologically, citizens are more likely to respond to pleas by a government to increase saving and be more comfortable in undertaking savings in an economy in which they have greater

faith in the government. Lastly, effective government means that monetary policy is more likely to be conducted so that inflation is kept under control. Thus, the dampening effect of inflationary expectations on savings is more apt to be kept in check.

II. Equation Specification, Variables, and Variable Sources

The basic estimating equation used in the cross country regressions is as follows.

$$S = \beta_0 + \beta_1 G_1 + \beta_2 G_2 + \beta_3 X_3 + \varepsilon$$

Here, S is a measure of the national savings rate, G_1 , a government size variable, G_2 , a government effectiveness variable, and X_3 , is a vector of other potential relevant variables. The betas are the estimated coefficients and epsilon is the error term. The coefficient on the government size variable, β_1 , is expected to have a negative sign, while the coefficient on the government effectiveness variable, β_2 , is expected to have a positive sign.

In the cross country equations, national savings is calculated by taking the five year average of the percentage of net national savings to gross national income from 1996 through 2000. The data for net national savings and gross national income comes from the 2002 World Development Indicators CD-ROM of the World Bank (World Bank 2002).²

² The 2002 World Development Indicators on CD-ROM contain data, when available, on over five hundred variables for the years 1960 to

The percentage of government to GDP 2000 is used as a proxy for government size (G_1 in the specification). Again, the data source is the 2002 World Development Indicators CD-Rom of the World Bank.

The measure of government effectiveness employed in the empirical analysis (G_2 in the specification) is taken from Kaufmann, Kraay, and Mastruzzi (Kaufmann, Kraay, and Mastruzzi 2003). They construct a subjective index of government effectiveness (along with five other governance indicators) by considering a large number of variables measuring perceptions of governance from a wide variety of different data sources. The effectiveness index attempts to measure government effectiveness by looking at the inputs needed by the government to provide both good government services and good government policy. It is subjective (as opposed to objective) in the sense that it is based on perceptions of individuals with regard to the operation of the government. These perceptions are abstracted from such documents as expert polls and surveys of citizens. Some of the items considered in its construction are the ratings responses to such things as the credibility of the government in undertaking policies, the quality of government service, the quality of the government bureaucracy, and the quality of the government's civil service. The government effectiveness index ranges

from a low value of negative 2.5 to a high value of positive 2.5 with higher values of the index indicating greater government effectiveness.

Lastly, an economic structure variable, an economic openness variable, and two population structure variables are used (the X_3 variables in the specification). They are the percentage of manufacturing to GDP for the year 2000, the percentage of trade to GDP for 2000, the percentage of the population over age 65 to total population for 2000, and the ratio of dependents to the working-age population for 2000. The source of each of these variables is the World Bank 2002 World Development Indicators on CD-ROM.

The countries in the basic sample are well diversified both in terms of their level of economic development and with regard to their geographic location. There are a total of one hundred twenty-one countries for which data is simultaneously available for the measures of national savings, government size, and government effectiveness. Using the fivefold developmental classification scheme contained in the World Bank's 2002 CD-ROM, the countries breakdown into forty-one low income countries, thirty-five lower middle income countries, twenty-seven upper middle income countries, six high income OECD countries, and twelve high income non-OECD countries. In terms of location, there are seven countries in South Asia, twenty-six countries in Latin America & Caribbean, thirty countries in Sub-Saharan Africa, eleven counties in East Asia & Pacific, thirty six countries in Europe & Central Asia, eleven in the Middle East & North Africa, and zero countries in North America. Appendix A lists the countries in the primary sample falling within each developmental group, and appendix B sorts the countries by geographic location.

III. Cross Country Regressions of National Savings Rates on Government Size and Effectiveness and Other Variables

2000 for two hundred and seven countries. The CD-ROM is a product of the Data Development Group of the World Bank.

Table I shows the results of regressions of the national savings rate on government size, government effectiveness, and other variables. The first regression shows the savings rate on government size and government effectiveness in isolation, while subsequent equations add additional explanatory variables. In the equations, the savings rate is defined as the five year average of the percentage of net national savings to gross national income from 1996 through 2000. Net national savings, of course, equals gross national savings minus the value of consumption of fixed capital. All of the explanatory variables are for the year 2000 and all the regressions are estimated using ordinary least squares.

A quick overview of the layout of the table

is as follows. The first column lists the variable names for the independent variables. Each of the five subsequent columns contains a regression equation. The equations are numbered in the first row. The last two rows report the r-squared value (RSQ) and the number of countries (N) for each equation. The topmost number in a box in the main body of the table reports an estimated coefficient. The number underneath estimated coefficient in parenthesis is its individual t-statistic. A variable that is significant at the ten percent level of significance or better in an equation is given three asterisks, one that is significant at the five percent level or better is given two asterisks, and one that is significant at the one percent level or better is given one asterisk.

Table I: Regressions of the percentage of Net National Savings to Gross National Income on Government Size and Effectiveness

	(1)	(2)	(3)	(4)	(5)
C	15.354 (7.243) *	12.096 (5.153) *	7.915 (2.489) **	9.452 (2.985) *	21.930 (2.947) *
GOVSIZE	-.452 (-3.534) *	-.489 (-3.852) *	-.485 (-3.318) *	-.420 (-2.789) *	-.407 (-2.737) *
GOVEFFECT	4.275 (4.745) *	3.570 (3.919) *	4.083 (3.392) *	5.133 (4.135) *	4.795 (3.874) *
OPENNESS		.042 (2.858) *	.044 (2.443) **	.040 (2.143) **	.038 (2.072) **
MANGDP			.273 (2.365) **	.362 (2.949) *	.256 (1.907) ***
POPOLD				-.611 (-2.425) **	-.968 (-3.077) *
AGEDEP					-12.851 (-1.850) **
RSQ	.200	.250	.352	.406	.429
N	121	120	97	92	92

The first equation shows the effect of the two government variables, government size and government effectiveness, by themselves on national savings rates. Government size, GOVSIZE, is measured by the percentage of government spending to GDP, Government effectiveness, labelled GOVEFFECT in the table, comes from Kaufmann, Kraay, and Mastruzzi. Inspecting the equation reveals that both government size and government effectiveness are significant at the one percent level of significance or better. Government size has the expected negative effect on national savings and government effectiveness has the anticipated positive sign. On their own, the two government variables behave quite impressively. Jointly they account for twenty percent of the cross country variation in national savings rate in a sample of one hundred twenty one countries.

The second equation adds a measure of openness, OPENNESS, to the two

government variables of the first equation. The measure of openness employed is the typical or commonly employed measure of openness. It is simply the percentage of total trade (exports plus imports) to GDP. When the openness variable is added to the fundamental equation, both government variables remain significant at the one percent level of significance and retain their respective signs. Adding openness to the original equation adds five percent to the explained variation in national savings rates. Openness itself is significant at the one percent level of significance and has a positive sign. The positive sign on openness indicates that greater integration with the world economy tends to enhance a nation's national savings rate.

The third equation adds a structural variable to the analysis. In a cross section of countries, where one is dealing with countries differing widely in the level of development, it would be quite surprising if differences in economic structure were not

a force at work in explaining differences in national savings rates. Traditionally, economic development has been viewed as a structural transformation of the economy from an economy dominated by agriculture to an economy dominated by industry (and more recently to an economy dominated by professional services). In this light, the structural variable employed is the percentage of manufacturing to GDP (MANGDP). It is expected that percentage of manufacturing to GDP will have a positive effect on the national savings rate. This is because it is assumed that more developed countries tend to create and sustain the necessary institutions and become more adept at mobilizing and utilizing savings.

Looking at the third equation shows that the addition of the structural variable causes the r-squared value to jump from .25 to .35. The percentage of manufacturing to GDP is significant at the five percent level of significance and has the expected positive sign. With the addition of this variable, all the other variables are significant at the five percent level or better and retain their signs.

Finally, the last two equations, equations 4 and 5, sequentially add two commonly used population age structure variables from the life cycle model. They are the percentage of the work force over 65 (POPOLD) and the ratio of dependents to the working-age population (AGEDEP). Theoretically, both of these variables are expected to have negative effects on national savings rates within a traditional life cycle model.

Focusing on the last two equations reveals that, both POPOLD and AGEDEP are significant at the five percent level or better. Both have the theoretically predicted sign based on the life cycle model. With the addition of the population age structure variables, all of the other variables remain significant at the ten percent level of significance or better, and all of the other variables retain their signs.

In a typical employment of the traditional life cycle model, Modigliani and Cao use

the life cycle model to explain the high levels of savings recently observed in the Chinese economy (Modigliani and Cao 2004). They argue that, when used in combination with economic growth, a demographic factor in the form of a dependency variable is an important determinant of the recent upsurge in Chinese savings, and for China's relatively high level of savings compared to other countries.

The results of the present study tend to imply that the focus on demographic variables may only provide a partial and incomplete story with regard to national savings and its variation across nations. While demographic variables certainly matter, the size of the government and its effective operation are also relevant.

The importance of the government with regard to savings should not be surprising. The dominant role played by government in national affairs is bound to effect savings. The government creates the overall environment for savings and investment in a nation. If government is ineffective, if it fails to provide adequately for political and social stability, if it appears to be incompetent, if it exercises little fiscal discipline and its spending is out of control, if the government is large and corrupt, then public savings is almost certain to be negative, and the anticipated returns from private savings, and, consequently, the amount of private savings itself, is likely to be extremely low.

If, on the other hand, a nation's government is competent, if it is well managed and under control, then that nation's government's own house is apt to be well ordered, and it is more likely to provide conditions that reduce the perceived and the actual risks of private saving, and to inspire confidence in the private sector to save. Small and effective governments are more apt to provide healthily environments that provide the conditions for the thriving of national savings.

IV. Conclusion

The regression analysis indicates that both government effectiveness and government size are potential determinants of national savings rates. Whether the government variables are used alone, or are used in conjunction with other variables, the government variables are statistically important in the regression runs on national savings rates. This result holds true, with or without the inclusion of life cycle structural population variables. Consistently, greater government effectiveness is associated with higher national savings rates, and larger government size is associated with lower national savings rates.

What all this means is that, when considering the reasons for differences in national savings rates across countries, the properties of the government cannot be ignored

Even more importantly, when trying to find ways to enhance a nation's savings rate, government traits need to be taken into consideration. The results of the paper suggest that, for countries desiring to increase their national savings rate, policies aimed at increasing government effectiveness or policies designed to reduce government size are two potential effective strategies.

References

- Ando, Alpert and Franco Modigliani. 1963. "The Life Cycle Hypothesis of Saving: Aggregate Implications and Tests." *American Economic Review*, 53, pp. 55-84.
- Bernheim, Douglas B. 1999. "Taxation and Saving." National Bureau of Economic Research, Working Paper No. 7061.
- Cesaranto, Sergio. 1999. "Savings and Economic Growth in Neoclassical Theory." *Cambridge Journal of Economics*. 23:6, pp. 771-793.
- Diamond, Peter A. and Jerry A. Hausman. 1984. "Individual Retirement and Savings Behavior." *Journal of Public Economics*, 23, pp. 81-114.
- Edwards, Sebastian. 1995. "Why are Savings Rates so Different across Countries?: An International Comparative Analysis." National Bureau of Economic Research, Working Paper No. 5097.
- Feldstein, Martin S. 1974. "Social Security, Induced Retirement, and Aggregate Capital Accumulation." *Journal of Political Economy*, 82, pp. 905-926.
- Graham, John W. 1987. "International Differences in Saving Rates and the Life Cycle Hypothesis." *European Economic Review*, 31:8, pp. 1509-30.
- Ichiro, Otani and Delano Villanueva. 1989. "Major Determinants of Long-term Growth in LDCs." *Finance and Development*. 26:3, pp. 41-43.
- Kaufmann, Daniel, Aart Kraay, and Massimo Mastruzzi. 2003. "Governance Matters III: Governance Indicators for 1996-2002." Working Paper. The World Bank.
- Kokila, David. 1994. "Determinants of the Saving Rate: An International Comparison." *Contemporary Economic Policy*. 12:1, pp. 37-46.
- Menchik, Paul and Martin David. 1983. "Income Distribution, Lifetime Savings, and Bequests." *American Economic Review*, 73:4, pp. 672-690.
- Modigliani, Franco, and Richard Brumberg, "Utility Analysis and the Consumption Function: An Interpretation of Cross-Section Data," in K.K Kurihara, ed., *Post Keynesian Economics*, New Brunswick, NJ: Rutgers University Press, 1954.
- Modigliani, Franco and Shi Larry Cao. 2004. "The Chinese Saving Puzzle and the Life-Cycle Hypothesis." *Journal of Economic Literature*. 42:1, pp. 145-171.
- Nordhaus, William D. 1989. "What's Wrong with a Declining National Saving Rate?" *Challenge*. 32:4, pp. 22-26.
- Summers, Lawrence and Chris Carroll. 1987. "Why is U.S. National Saving So Low?" *Brookings Papers on Economic Activity*. 2, pp. 607-638.
- Wang, Yan. 1995. "Permanent Income and Wealth Accumulation: Across-Sectional Study of Chinese Urban and Rural Households." *Economic Development and Cultural Change*. 43:3, pp. 523-550.
- World Bank. 2002. *World Development Indicators 2002 on CD-ROM*.

Yaari, Menaham E. 1965. “Uncertain the Consumer.” *Review of Economic Lifetime, Life Insurance, and the Theory of Studies*, 32, pp.137-158.

Appendix A: Classification of Countries on the Basis of Level of Development

Low Income Countries	Lower Middle Income Countries	Upper Middle Income Countries	High Income OECD Countries	High Income Non-OECD Countries
Afghanistan	Albania	Argentina	Belgium	Hong Kong, China
Angola	Belarus	Bahrain	Finland	Israel
Armenia	Belize	Brazil	France	Kuwait
Azerbaijan	Bolivia	Chile	Germany	Malta
Bangladesh	Bulgaria	Costa Rica	Italy	Singapore
Benin	Cape Verde	Croatia	Luxembourg	Slovenia
Bhutan	China	Czech Republic	Norway	
Burkina Faso	Columbia	Dominica	Portugal	
Burundi	Dominican Republic	Estonia	Spain	
Cameroon	Ecuador	Gabon	Sweden	
Chad	Egypt, Arab Republic	Grenada	Switzerland	
Cote d’Ivoire	El Salvador	Hungary	United Kingdom	
Ethiopia	Fiji	Korea, Republic		
Gambia, The	Guatemala	Malaysia		
Georgia	Honduras	Mauritius		
Ghana	Iran, Islamic Republic	Mexico		
Guinea	Jamaica	Panama		
India	Jordan	Poland		
Indonesia	Kazakhstan	Saudi Arabia		
Kenya	Latvia	Seychelles		
Kyrgyz Republic	Lithuania	Slovak Republic		
Lesotho	Macedonia, FYR	South Africa		
Madagascar	Maldives	St. Kitts and Nevis		
Malawi	Morocco	St Lucia		
Mauritania	Paraguay	Turkey		
Moldova	Peru	Uruguay		
Mongolia	Philippines	Venezuela, RB		
Mozambique	Romania			
Nepal	Russian Federation			
Nicaragua	Sri Lanka			
Niger	St. Vincent and Grenadines			
Nigeria	Suriname			
Pakistan	Swaziland			

Rwanda	Thailand			
Senegal	Tunisia			
Tajikistan				
Tanzania				
Togo				
Uganda				
Uzbekistan				
Vietnam				
Yemen Rep.				
N = 41	N = 35	N = 27	N = 6	N = 12

Source: World Bank, World Development Indicators, 2002 CD-ROM

Appendix B: Classification of Countries on the Basis of Geographic Location

South Asia	Latin America & Caribbean	Sub-Saharan Africa	East Asia & Pacific	Europe & Central Asia	Middle East & North Africa	North America
Bangladesh	Argentina	Angola	China	Albania	Bahrain	
Bhutan	Belize	Benin	Fiji	Armenia	Egypt, Arab Rep.	
India	Bolivia	Burkina Faso	Hong Kong, China	Azerbaijan	Iran, Islamic Rep.	
Maldives	Brazil	Burundi	Indonesia	Belarus	Israel	
Nepal	Chile	Cameroon	Korea, Rep	Belgium	Jordan	
Pakistan	Colombia	Cape Verde	Malaysia	Bulgaria	Kuwait	
Sri Lanka	Costa Rica	Chad	Mongolia	Croatia	Malta	
	Dominica	Cote d'Ivoire	Philippines	Czech Republic	Morocco	
	Dominican Republic	Ethiopia	Singapore	Estonia	Saudi Arabia	
	Ecuador	Gabon	Solomon Island	Finland	Tunisia	
	El Salvador	Gambia, The	Thailand	France	Yemen Republic	
	Grenada	Ghana	Vietnam	Georgia		
	Guatemala	Kenya		Germany		
	Honduras	Lesotho		Hungary		
	Jamaica	Madagascar		Italy		
	Mexico	Malawi		Kazakhstan		
	Nicaragua	Mauritania		Kyrgyz Republic		
	Panama	Mauritius		Latvia		
	Paraguay	Mozambique		Lithuania		
	Peru	Niger		Luxembourg		
	St Kitts & Nevis	Nigeria		Macedonia, FYR		
	St. Lucia	Rwanda		Moldova		
	St. Vincent and the Grenadines	Senegal		Norway		
	Suriname	Seychelles		Poland		
	Uruguay	South Africa		Portugal		
	Venezuela	Swaziland		Romania		
		Tanzania		Russian Federation		
		Togo		Slovak Republic		
		Uganda		Slovenia		
				Spain		
				Sweden		
				Switzerland		
				Tajikistan		
				Turkey		
				United Kingdom		
				Uzbekistan		
N = 7	N = 26	N = 30	N = 11	N = 36	N = 11	N = 0

Source: World Bank, World Development Indicators, 2002 CD-ROM

***Dr. William R. DiPietro** is Professor of Economics in the Business Administration Department at Daemen College in Amherst, New York. His articles appear in professional journals around the world including, to mention a few, the *Asian Economic Review*, *Economia Internazionale*, *Kyklos*, *Review of International Economics and Business*, *Review of Applied Economics*, *Journal of Policy Modeling*, *Journal of Global Business Issues*, *International Journal of Social Economics*, and *Indian Economic Journal*.

* *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.*

The BNE is celebrating the electronic age by disbanding its print copy distribution list. This process began some time ago but is reaching its final stages now. All former print-copy readers are invited to join the electronic mailing alert service by contacting the editor at dabirp@richmond.ac.uk

ABOUT The Briefing Notes in Economics:

The current series of the **Briefing Notes in Economics** has been published regularly since November 1992. The series continues to publish quality peer-reviewed papers. As with recent issues, some of those that are forthcoming will include conference listings and other information for anyone with an interest in economics.

As always information on joining the mailing list, submitting a paper for publication consideration and much else besides, appears on the web-site. Should you need more information on any of the above matters please write to **Dr. Parviz Dabir-Alai**, Editor – Briefing Notes in Economics, Department

of Business & Economics, Richmond – The American International University in London, Queens Road, Richmond, Surrey TW10 6JP, UK. Fax: 44-20-8332 3050. Alternatively, please send your e-mail to him at: dabirp@richmond.ac.uk

Briefing Notes in Economics

*** Call for Papers ***

<http://www.richmond.ac.uk/bne/>

The BNE is always keen to hear from prospective authors willing to write a short, self-contained, and preferably applied, piece for publication as a future issue. The series prides itself on giving the well-motivated author a rapid decision on his submission. The **Briefing Notes in Economics** attracts high quality contributions from authors around the world. This widely circulated research bulletin assures its authors a broad-based and influential readership. The **Briefing Notes in Economics** is indexed with the *Journal of Economic Literature*.

For further information please visit the BNE website at the following address: <http://www.richmond.ac.uk/bne/>

Previous authors have included:

Mak Arvin (Trent), Mark Baimbridge (Bradford), Alexandre Barros (Oxford), Amitrajeet Batabyal (Utah), Michael Block (University of Arizona), William Boyes (Arizona State), Toni Cavoli (Queensland University of Technology), Frank Chaloupka (Illinois), Samuel Cameron (Bradford), E. Ray Canterbury (Florida), Roger Clarke (Cardiff), Jean Drèze (LSE, Delhi), James Gapinski (Florida), Mohammad S. Hasan (Sheffield Hallam), Andrew Henley (Swansea), Greg Hill (City

of Seattle), Prabhat Jha (World Bank), Geeta Gandhi Kingdon (Oxford), Arthur Leahy (IRS), Carmen Li (Essex), Robert Jones (Skidmore), Dhanayshar Mahabir (UWI), Mehmet Odekon (Skidmore), Ramkishan Rajan (George Mason), Stefania Scandizzo (Corporation Andina de Fomento), Hans Singer (Sussex), Simon Ville (Wollongong), Sabine Spangenberg (Richmond), Bob Wearing (Essex), Nobuyoshi Yamori (Nagoya) and many others.

The International Journal of Economics, Education and Development (TIJEED)

*** Call for Papers ***

The International Journal of Economics,

Education and Development (TIJEED) is a new peer-reviewed Journal for 2009.

The Journal publishes articles that promote advancement of economics education at all levels. The primary mission of the TIJEED is to serve as a medium for initiating, collaborating, analysing, synthesising and evaluating original and ground breaking contributions to the theory, practice and research in economics of education applicable to all levels.

For further information prospective authors are invited to contact Dr Ravinder Rena, Editor-in Chief, TIJEED, Head of Economics, Papua New Guinea University of Technology, Private Mail Bag, Morobe Province, PNG. Email: rrena@dbs.unitech.ac.pg