Do Small States Require Special Attention or Trade Openness Pays-off

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Abstract

In this paper, we argue that small states require special treatment because trade openness has only temporary effects on small states’ outputs. Further, the lack of productive capacity and efficiency has significant implications on their export competitiveness. Therefore, we suggest that developed countries and donor agencies may have to re-consider special and differential treatment within the WTO and establish a sustainable provision for small economies in the form of adjustment and adaptation funds to develop institutions, infrastructure and competitive exports.

¹ We thank Professor B.B Rao for useful comments and suggestions.
1.0 Introduction

Small states (defined as those below a population of 1 million people) have special problems and therefore require differential treatment because these problems put immense pressure on their trade competitiveness and growth. However, support for special treatment of small states has been mixed. While some, for example, Davenport (2003), Grynberg (1999, 2000 and 2007) and Winters and Martin (2004) are sympathetic, Boris and Hughes (1982), Milner and Westaway (1993) and Easterly and Kraay (2001) are amongst others who have criticized special considerations for small states. Nonetheless, international negotiations such as the Doha Declaration (Article 35) has agreed to create a work program for trade issues affecting small economies and the July 2004 General Council of WTO has agreed to address the concerns of the small economies, including food security, rural development, livelihood and preference erosion. The recent research on small and vulnerable economies adds to the debate on small states arguing for preferential treatment of small states.

However, the empirical findings of Easterly and Kraay (2001) (E&K, for short) have led to serious re-considerations for growth policies affecting small states. In short, their main conclusion is that although small states are more vulnerable to term of trade shocks, their trade openness pays off in growth, i.e the positive effects of trade openness more than offset the negative effects of terms of trade shocks. E&K have raised an important issue about small states and their problems in the view of trade liberalisation since the Uruguay round of trade negotiations. It is well known that the preferential trade concessions are being brought to an end as part of the World Trade Organisation (WTO) rulings. This has caused serious concerns

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3 See for example Ismail (2006, 2005) for a discussion on the Doha Development Agenda where he argues for Special and Differential Treatment (SDT) provision for small and vulnerable economies.
amongst the small economies regarding their economic potential. E&K therefore have provided a timely justification for those developed countries pushing for unfettered trade liberalization. However, E&K do agree that small states are not entirely free from economic problems but fall short of providing a complete analysis and explanation of the growth problems in small economies. Contrary to E&K’s claims, their own analysis show that although small states’ overall performance is comparable to that of the larger states, the dynamics behind their performance are very different.

There are many pressing problems in small states which do not allow them to grow at rates comparable to the larger economies. Some for example, are being landlocked, remote from major markets, population and geographical size etc. The effects of such factors are also debatable. In a recent comprehensive study of 140 countries, Ram and Prasad (2007) found that remoteness is not growth disadvantage for developing economies. This is in contrast to a cross section study of small states by Sampson (2003) who argue that being small and remote from major markets have negative effects on growth rates. However, we are of the view that regardless the effects, such factors are highly exogenous and therefore have little scope for policy. It is also possible that there are others that might affect growth rates. It is hard to draw an exhaustive list of these factors as Hoover and Parez (2004) note that there are more than 80 such factors which has been identified with various cross section studies.

Therefore, in this paper, we intent to explore if various measures of trade openness might have affected small states’ output over the 1975 to 2004 period. Trade liberalization and global integration are generally expected to be beneficial. However, liberalization also implies erosion of trade preferences that eventuated after the conclusions of the Uruguay Round. The current trade negotiations of the WTO have provided further impetus for erosion of trade preferences. Export prices of agricultural and primary commodities have also been declining making small states vulnerable to terms of trade shocks. The declining terms of trade for primary
producers (majority of the small states are in this category) have not been helpful. In addition, many of the small economies in African, Caribbean and Pacific (ACP) region have heavily relied on preferential trading arrangements for their single commodities. For example, the sugar growing ACP economies have depended on the European Union (EU) for above the world market price for sugar. In many of these countries, the concerns regarding the collapse of their sugar industries following of removal of preferential sugar prices has warranted interventions by the EU in the form of adaptation funds.

To test the effects of trade openness on small states, we apply time series methods. However, of UN’s list of small states, only the following 23 countries have consistent time series data on the basic variables that we require. These are: Antigua and Barbuda, the Bahamas, Bahrain, Barbados, Belize, Cape Verde, Comoros, Cyprus, Fiji Islands, Grenada, Guyana, Iceland, Luxemburg, St. Kitts and Nevis, St. Vincent & Grenadines, St. Lucia, Samoa, Seychelles, Solomon Islands, Surinam, Swaziland, Trinidad and Tobago and Vanuatu. Table-1 in the Appendix shows that from 1975-2004, the growth rate of per worker outputs in these economies averaged around 1.1% and this is not different from our computed growth rate of factor productivity of 1.0%. We have used simple growth accounting framework with a profit share of 30%. A correlation between the two for these countries over the review period gives 0.81. Therefore, a reasonable explanation for low growth in outputs in these countries can be attributed to low productivity.\(^4\) However, the so called factor productivity accounts for many unknown determinants of growth in addition to it being a measure of our ignorance. For this reason, we shall estimate the output equations using the production functions approach with the two conditioning variables, labour and capital together with trade

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\(^4\) Table 1 shows that most of our sample states have low levels of productivity excluding Bahrain and Trinidad and Tobago.
related variables\textsuperscript{5}. However, before we detail the results of the empirical estimation, a few econometric issues should be considered.

First, one must select a sound empirical approach because there are limitations in all. For example, recently there seems to be reservations regarding the conclusions drawn from cross-section studies partly because the assumption that the sample countries have similar structures is not well founded. In addition, many cross section and time series works alike, suffer from serious mis-specification problems in that their ad-hoc specifications involve running regressions between the growth rates of output with growth rates of some other growth enhancing variables without sound theoretical justifications; see Rao (2007) and Easterly et. al (2003) for a discussion. The penal regressions also suffer from similar limitations.

In our chosen time series method, we have made two pragmatic compromises. First, we assume that the potential growth enhancing variables are linked to trade openness, which is merely to test this conjuncture. Second, instead of running scores of country specific ad-hoc regressions with different ranges of annual data, we estimate augmented production functions based on the sample average values of the aforesaid countries within the cointegration framework. However, due care has been taken to minimize the effects of missing observations on the underlying trends in variables. The IMF-IFS and UN-WDI and the UN’s databases are used and details of data and variables are in Appendix-A. The paper is organized as follows. Section 2 details the specification and cointegration issues\textsuperscript{6} and the empirical

\textsuperscript{5} We argue that there should be a clear distinction between the conditioning and other the potential growth enhancing variables. It is hard to imagine an output equation without these two conditioning variables and often ad-hoc specifications give implausible results which are of little use for policy. In this respect, Bosworth and Collins (2003) have drawn the distinction between a set of conditioning variables and other potential factors in analyzing growth rates. They argue that these key conditioning variables need to be retained in the regressions to analyze the significance of the hypothesized variables.

\textsuperscript{6} Testing for unit roots with a sample of around 30 observations may not be optimal. However, since we are using the cointegration framework, even if there are unit roots, the classical properties of the estimators
results and discussions are in Sections 3. The conclusions and limitations are stated in Section 4.

2.0 Specification and Empirical Results

We have adopted the Rao and Takuria’s (2006) methodology who estimated the effects of foreign aid and remittances in Kiribati\(^7\). This is also an extension of the Mankiew, Romer and Weil’s (1992) extension to the Solow model augmented with human capital but with time series methods. Although it is desirable to use a few alternative methods of estimating cointegrating equations, only the general to specific approach of LSE-Hendry (GETS) is used because systems based methods like Johansen Maximum Likelihood (JML) is computationally demanding and may not yield satisfactory results in small samples. Further, it is not possible to assume constant returns with JML or even with the simpler ones like Phillips-Hansen’s method. However, this is possible with GETS. We also use the recently developed residual based tests of Ericsson and MacKinnon (2002) to test for cointegration in our finite sample. Our basic specification is:

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\(^7\) The basic assumptions of the model are given in Rao and Takuria (2006). Briefly stated, although the dependent variable is the rate of growth of output, the estimated equation is not the steady state growth equation. This transformation is necessary in order to use time series methods to overcome unit root problems. Further, it is hard to estimate the steady state regressions with small data samples. Second, the constant returns to scale are maintained (we do not intent to apply endogenous models) and the technology is assumed to be Hicks neutral. Third, additional variables, such as the export ratio etc., are introduced as shift variables. We are of the view that this is adequate for our purposes even though they can be introduced differently.
\[ Y_t = A_0 e^{gt} K_t^\alpha L_t^{1-\alpha} \quad (1) \]

where \( A_0 \) is the initial stock of knowledge, \( t \) is time, \( K \) and \( L \) are the stocks of capital and \( L \), respectively. Capital stock is estimated with the perpetual method with 4% rate of depreciation and the initial level of \( K \) is assumed to be 1.5 times the real output (\( Y \)) of 1974. Equation (1) implies that stock of knowledge not only changes with time but also depends on the shift variables (\( Z \)) which may have permanent level effect or temporary growth effect on output. Rao and Takuria explain the procedure (briefly stated below) to distinguish between the temporary and permanent effects. The specification in (1), except for the intercept and trend which are ignored for convenience based on GETS where long and short run effects of \( Z \) can be captured and tested is as follows:

\[
\Delta \ln Y = -\lambda (\ln Y_{t-1} - (\beta_1 \ln K_{t-1} + \beta_2 \ln L_{t-1} + \beta_3 \ln Z_{t-1})) + \sum \gamma_n \Delta \ln K_{t-n} + \sum \gamma_j \Delta \ln L_{t-j} + \sum \gamma_m \Delta \ln Z_{t-m} + \sum \gamma_j \Delta \ln Y_{t-1-j} \quad (2)
\]

If \( Z \) has both permanent and temporary effects on \( Y \), then \( \beta_3 \) and some of \( \gamma_m \) would be significant. If \( Z \) has only level effects only \( \beta_3 \) would be significant. If it has only short run effects then \( \beta_1 \) would be insignificant while some \( \gamma_m \) would be significant. The value of \( \lambda \) measures the speed of adjustment and its t-ratio can be used to test for cointegration using the Ericsson and MacKinnon (2002) tests.

3.0 Empirical Results

Equation (2) is estimated in per capita terms with annual average data from 1975-2004 with 2 lag of each variables included in the dynamics. The parsimonious equations are reported in Table-2 below. The results imply that out of the various
trade variables tested, only exports ratio (ratio of exports on their own GDP) and export price (major agricultural or primary commodity price) seem to have level effects, although not statistically significant at 5%. However, these effects are negative. This can be because in small countries, the ability to produce competitive exports and create effective backward and forward linkages is limited. Further, while data may show raising export volumes, output may remain stagnant or even decline (which seems to be the case here) because in many cases, they lack capacity to benefit from openness.

<table>
<thead>
<tr>
<th>Table-2 Effects of Trade Related Variables on Outputs of Small States</th>
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<tbody>
<tr>
<td><strong>Equation</strong></td>
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<tr>
<td>----------------</td>
</tr>
<tr>
<td>Constant</td>
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<tr>
<td>Trend</td>
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<tr>
<td>lambda</td>
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<tr>
<td>lnk(-1)</td>
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<td>lnZ(-1)</td>
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<tr>
<td>Δlnk</td>
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<td>Δlnk(-1)</td>
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<tr>
<td>Δlnk(-2)</td>
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<tr>
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<td>R-Bar</td>
</tr>
<tr>
<td>SEE</td>
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<tr>
<td>$\chi^2_{sc}$</td>
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<td>$\chi^2_{ff}$</td>
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<td>$\chi^2_{n}$</td>
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<tr>
<td>$\chi^2_{hr}$</td>
</tr>
</tbody>
</table>
Notes:

The p-values are reported below the coefficients and those significant at 5% and 10% level are indicated with * and ** respectively. In our preliminary estimates, the share of profits was low at around 20% and insignificant at conventional levels except in (A). Thus all subsequent regressions were constrained with a 30% profit share. The constrained estimates for (A) were not much different from what is given in Table-2. (c) indicates constraint estimates and the chi-squares tests are for, serial correlation, functional form, normality and heteroscedasticity, respectively as given in the table. The p-values are given below the summary statistics. The Ericson-MacKinnon (2002) test accepts cointegration for all equations at 5% level.

This is merely the effects of value addition if small states can do effectively. This is in contrast to the conclusions of E&K that states the openness benefits small states. The reduction in import duty does not give noticeable level effects on small states outputs. This may be due to the inability of small economies to sustain their export growth after progressively liberalizing their tariff regimes. This is also the period when many of small states adopted the IMF and World Bank supported structural adjustment policies under which they had serious effects on output because of the reduction in public expenditure. However, the exports ratio, import duty, export and EU sugar prices seem to have significant but temporary growth effects. This point to the conclusion that openness without the necessary infrastructure and capacity does not guarantee permanent effects on small states outputs and in this context, openness is harmful for small states.

In light of these results, we are of the view that faced with their usual structural problems, liberalisation has opened doors for intense competition in small states and these economies have failed to respond competitively due to high operation costs. These costs are related to transportation, utility and wage costs, the costs arising from weak institutions including rent seeking, bribery and corruption and the costs incurred in securing and maintaining adequate property rights, amongst others, which lead to high cost of doing business in small states.

Winters and Martin (2004) provide an excellent analysis of cost of doing business in small economies. They tag this to high transportation and utility costs faced by the manufacturing sector in these economies. They argue that if wage costs are priced zero, the total manufacturing costs would still be higher than the world prices, yielding negative rate of returns. Winters and Martin point out that what is
needed is “small solutions” such as development funds and migration of skilled workers from small economies to developed countries.

We argue that small economies need a sustainable flow of adaptation/adjustment funds for a long time and this could be 10-20 years if they are to develop the institutional and infrastructural capacity to reap the full potential of free trade as espoused within the provisions of the WTO. The pledge by industrial and developed countries that an amount of 0.7 percent of their incomes should be the target for aid to developing countries on an annual basis should be considered seriously as none of them has actually reached this target. If we exclude the large developing economies then 0.7 percent of GDP in aid target to small economies would be a huge amount for adjustment. For developed economies, meeting this target and other forms of support would be a “small solution” to the seemingly “big problem” for small economies. We argue that in the absence such assistance, it is reasonable to assume that faced with high operation costs, major investment enterprises in export oriented industries from these states will wind-up operations to places where their investment fetches better returns, such as in Asian economies. For this reason, employment, output and growth rates in small states will keep declining tremendously.

Further, many of the small economies are also concerned that the reciprocal nature of the regional trade agreements are not likely to ensure that small economies will benefit from the bigger countries. In addition, there is acceptance that FTAs between large economies and small economies are not easily sustainable and could often lead to a trade deficit for the smaller ones. This is because the initial conditions after trade liberalisation in small economies lack the basic infrastructure and competitive edge to engage in reciprocal trade which would benefit them in the short to medium term. In the long-term some of these economies may be able to adapt and adjust their capacity to enhance their export opportunities. Thus in light of these observations, it is hard to argue that trade openness will more than offset the negative effects of other growth deterents because it seems that openness only
has temporary growth effects, unless adequate domestic capacity is built to realize the long term benefits of trade. Therefore, higher trade volumes may not yield the much expected growth effects that are anticipated in small states.

4.0 Conclusions and Policy Implications

In this paper, we have tested the implications of a few trade related variables on small states outputs. Our results based on time series approach with data from 1975-2004 for 23 small states indicates that different trade related variables seem have temporary growth effects in small states. Therefore, small states must develop their competitive growth sector(s) through improving institutions, infrastructure and productivity. Further, we argue that the developed countries and donor agencies should re-consider the special and differential treatment provisions within the WTO and institute a sustainable adjustment and adaptation funds on a sustained basis as small economies have little potential for the development of manufacturing sector to a level which generates sustainable export growth. The insistence of complete reciprocity in the current EPAs based on the provision of the WTO seems unrealistic for many small economies at least for the time being and during the period of their capacity building. For small economies, the erosion of preferences and developing their own export capacity present major challenges which they cannot face effectively without the support of the developed economies and international donors. Small economies have special characteristics which affect their growth path in a different way than that experienced initially by bigger and now developed economies. They therefore require special attention for progress.
References


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Appendix –A: Data and Sources

**Output** represents the average output of the 23 small states as listed in Table-1 in Appendix. Data obtained from the WDI-2003/2005 in constant 2000 US dollars.

**Capital stock** data is estimated using the perpetual method with 4% rate of depreciation. The initial capital stock is assumed to be 1.5 times the 1974 GDP of each country. The capital figures used are sample average values in constant 2000 US dollars. Data obtained from the IFS 2002 and WDI-2003/2005.

**Labour force** data is obtained from the WDI-2003/2005. In cases where observations were missing, estimations based on the labour force to population and employment to labour force ratios were used to interpolate the labour force data. Data obtained from the WDI-2003/2005.

**Trade Ratio** is the sample average ratio of exports plus imports on respective countries GDP. Data obtained from the UN website, IFS 2002 and WDI-2003/2005. Similarly **exports ratio** is computed but as a ratio of small states average GDP.

World non-fuel **commodity prices** and EU **sugar prices** are obtained form the IFS 2002. The sugar prices only include the counties who produce and export sugar.

**Import duty** is the average ratio of import duty to total imports. Data are obtained from UN website, IFS 2002 and WDI-2003/2005.
## Table-1

### Appendix-B: Average Growth Rate of Output, Capital and Productivity (%)

<table>
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<tr>
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<tbody>
<tr>
<td></td>
<td>Δy</td>
<td>Δk</td>
<td>ΔA</td>
</tr>
<tr>
<td>1 Antigua &amp; Barbuda</td>
<td>4.17</td>
<td>2.06</td>
<td>2.11</td>
</tr>
<tr>
<td>2 Bahamas</td>
<td>0.99</td>
<td>0.31</td>
<td>0.69</td>
</tr>
<tr>
<td>3 Bharain</td>
<td>-0.65</td>
<td>-0.11</td>
<td>-0.54</td>
</tr>
<tr>
<td>4 Barbados</td>
<td>0.07</td>
<td>0.33</td>
<td>-0.26</td>
</tr>
<tr>
<td>5 Belize</td>
<td>2.35</td>
<td>0.55</td>
<td>1.80</td>
</tr>
<tr>
<td>6 Cape Verde</td>
<td>1.86</td>
<td>0.46</td>
<td>1.40</td>
</tr>
<tr>
<td>7 Comoros</td>
<td>-0.60</td>
<td>-0.50</td>
<td>-0.10</td>
</tr>
<tr>
<td>8 Cyprus</td>
<td>3.60</td>
<td>1.10</td>
<td>2.50</td>
</tr>
<tr>
<td>9 Fiji</td>
<td>-0.50</td>
<td>-0.68</td>
<td>0.18</td>
</tr>
<tr>
<td>10 Grenada</td>
<td>3.13</td>
<td>1.24</td>
<td>1.89</td>
</tr>
<tr>
<td>11 Guyana</td>
<td>-1.13</td>
<td>-0.34</td>
<td>-0.79</td>
</tr>
<tr>
<td>12 Iceland</td>
<td>1.41</td>
<td>-0.92</td>
<td>2.32</td>
</tr>
<tr>
<td>13 Luxemburg</td>
<td>3.60</td>
<td>1.61</td>
<td>1.98</td>
</tr>
<tr>
<td>14 St. Kitts and Nevis</td>
<td>3.81</td>
<td>1.39</td>
<td>2.42</td>
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<td>3.24</td>
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<td>1.32</td>
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<td>16 St. Lucia</td>
<td>2.71</td>
<td>0.38</td>
<td>2.33</td>
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<tr>
<td>17 Samoa</td>
<td>-2.16</td>
<td>-0.71</td>
<td>-1.45</td>
</tr>
<tr>
<td>18 Seychelles</td>
<td>1.44</td>
<td>0.71</td>
<td>0.73</td>
</tr>
<tr>
<td>19 Solomon</td>
<td>-0.28</td>
<td>-1.68</td>
<td>1.40</td>
</tr>
<tr>
<td>20 Surinam</td>
<td>-1.09</td>
<td>-0.92</td>
<td>-0.17</td>
</tr>
<tr>
<td>21 Swaziland</td>
<td>1.31</td>
<td>-2.37</td>
<td>3.68</td>
</tr>
<tr>
<td>22 Trinidad &amp; Tobago</td>
<td>0.14</td>
<td>-0.15</td>
<td>0.29</td>
</tr>
<tr>
<td>23 Vanuatu</td>
<td>-1.11</td>
<td>-0.75</td>
<td>-0.36</td>
</tr>
<tr>
<td>Sample Average</td>
<td>1.14</td>
<td>0.13</td>
<td>1.02</td>
</tr>
</tbody>
</table>

A represents total factor productivity (TPF). Δ is the percentage change in the variables.
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