

Small States, Big Problems, Small Solutions from Big Countries

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Abstract

Several studies suggest that growth constraints in small states are not different from others and therefore they do not require special attention. In this paper, we argue that this may not be so and therefore, the developed countries and donor agencies may have to reconsider special and differential treatments within the provisions of the WTO and establish a sustainable provision for small economies. Our analysis show that although trade liberalization provides positive stimulus for growth, small states endure high cost of doing business which have escalated following the withdrawal of differential treatments and this has had implications on small states performances. Further, these economies have been facing negative trade effects especially in the post 1995 period. Therefore, we suggest that small states have a strong case to argue for continued support in the form of adjustment and adaptation funds in order to develop institutions, infrastructure, capacity and competitive domestic exports.

1.0 Introduction

Studies have shown that small states (defined as those with populations of less than one million) have special problems and therefore require special attention from donors and large economies. While some, for example, Davenport (2003), Grynberg (1999, 2000 and 2007) and Winters and Martin (2004) are the recent proponents of this idea¹, an equally convincing number of studies argue that these problems are not specific to small states and therefore they should not receive preferential treatment - a notion that seems to be guiding some of the developments in the WTO's treatment of small states. Some influential studies along this view are Hughes (1982), Milner and Westaway (1993) and Easterly and Kraay (2000) who have criticized special considerations for small states. However, there is now a growing body of literature on small and vulnerable economies which seeks to skew the balance in favor of small states, see for example the recent series of UNU-WIDER research papers which is specifically based on these economies.

In this paper, we argue that developed countries and donor agencies may have to reconsider special and differential provisions within the WTO on sustainable basis because these economies have little potential for development of manufacturing and export sectors to a level which can sustain global competition. In the absence of scale effects, these problems are amplified putting immense pressure on their productivity and growth rates. Winters and Martin (2004) argued that high cost of doing business lower competitiveness in small states. We now have some empirical evidence that indicate that supports this view. We find that escalating cost of doing business and negative trade effects seem to have contributed to the tremendous decline in small state performances in the post 1995 period limiting their ability to enjoy the full benefits of trade liberalization. Nonetheless, much of the expected benefits from openness and trade seem only to be temporary and not totally growth enhancing for these economies. These issues have forced international negotiations such as the Doha Declaration (Article 35) to create a

¹ Others include Demas (1965), Carl (1983), Kaminarides et.al (1989), Briguglio (1995 and 1998), McKee and Tisdell (1990) and Streeton (1993).

work program for trade issues affecting small economies and the July 2004 General Council of WTO to address the concerns of small economies, including food security, rural development, livelihood and preference erosion². These developments indicate that small states deserve some special attention. Therefore, we suggest that small states must develop their competitive growth sector(s) through improving institutions, infrastructure and capacity which is only possible with the support of large economies and donor agencies.

The paper is organized as follows: The next section briefly discusses the background studies and section 3 highlights the econometric issues that need to be considered before we proceed to empirical testing in sections 4. Section 5 concludes with implications for policy. It also lists the limitations of this study.

2.0 Background Studies

It is not necessary to list and summaries the main finding of the numerous studies available in the literature on small states because the perceptions on small states are so obvious. However, in general, it can be said that support for small states is mixed, amongst which the empirical findings of Easterly and Kraay (2000) (E&K, for short) have had serious implications for growth policies affecting small states. In summary, E&K suggest that small states should receive the same policy advice as large states do even though they may be more vulnerable to terms of trade shocks because they argue that openness of small states pays off in growth. Accordingly, E&K seem to indicate that small states do not suffer from special disadvantages when compared to larger economies and they attribute this to a number of offsetting advantages in small states. Based on their results obtained with cross-section data on 33 small states for the period 1960-1995, they argue that these economies have significantly higher per capita incomes, on average, than others. Controlling for factors like (i) location and (ii) if they are oil producers or

² 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.

members of the OECD, they find that their incomes are 40% higher than the large economies. Further, they show that initial income has significant negative effects on the average per capita growth rates of small states in the review period. This implies that these economies will experience declining rates of growth rates than average due to conditional convergence.

E&K observe that the small states having higher incomes is a growth disadvantage. They argue that while there is significant growth volatility in their outputs, the positive effects of trade openness and higher secondary enrollment are twice as large as the negative effects of terms of trade shocks. Therefore, they are of the view that any source of growth volatility that is not associated with openness must be detrimental for small states. They also point out that small states need to diversify their risks by opening up their capital markets so that they can reap the benefits from international capital movement.

Easterly and Kraay have raised an important issue about small economies and their problems in the view of the global trade liberalization since the Uruguay round of trade negotiations. The preferential trade concessions are now being brought to an end as part of the World Trade Organization's (WTO) agenda and this has caused concerns amongst small economies about their future economic potential. E&K therefore, have provided a timely justification for developed countries pushing for unfettered trade liberalization. However, E&K do agree that small states are not entirely free from economic problems but they fall short of providing a complete analysis and explanation of the growth problems and trends in small economies. Further, contrary to their claim that small states should receive the same policy advice as large states do, their own analysis show that although small states overall performance is comparable to that of larger states, the dynamics behind their performance are very different, which in itself suggests that they require different approach to growth constraints.

Some of the E&K's conclusions have not been taken well by many including the Pacific Islands Forum Secretariat - the trade and policy advisory body of the Pacific Islands -

who are of the view that there are many structural problems in small states that does not allow them to grow at rates near to those of the larger economies.

Studies by Sampson (2005) and Winters and Martin (2004) add to the discussion on the problems of small economies. Sampson in particular, refutes the findings of E&K and argues that some of their results are not robust to re-estimation of their regressions using 1995-2003 data. Sampson's regressions show that small states grow at significantly slower rates than the larger economies in this period. He agrees that small states have higher incomes than others. After controlling for region, oil exports, OECD membership and sample selection bias, Sampson finds that income disparity is large. However, contrary to E&K's findings that the effects of size is irrelevant, Sampson finds that although being small is growth enhancing in the 1980-1994 period, its effects are significantly negative in the 1995-2004 period. He argues that being a small state reduces average growth rate by around 0.87 percentage points. Further, Sampson tested if the decline in growth rates in the 1995-2003 was due to growth convergence in small states and finds that controlling for regional and OECD membership, initial income remains insignificant in the growth regression of small states in this period, see Appendix C for details of Sampson's results. Thus, he argues that accepting the convergence hypothesis is doubtful for small states for this period. This is contrary to E&K's conclusions on growth convergence.

However, it is important to realize that growth rates may not actually slow down due to this reason alone.³ Nonetheless, it is not necessary to test for convergence because growth rates are randomly distributed across countries. Moreover, those economies with lower growth rates in the past are likely to have lower rates of growth in the future and vice versa, unless drastic structural adjustment and/or factor accumulation take place⁴. Further, in testing convergence by simply separating the peaks from the troughs would probably be seen as interfering with the regression results which may only pick up short-term

³ Nonetheless, the idea of growth convergence has weakened in light of the lack of empirical support elsewhere. Evidence of large developing countries such as China, India and others achieving high growth rates in the recent periods suggest convergence towards the initial growth rates of now developed countries.

effects rather than long run convergence. Even if convergence is accepted, there are many other variables which may explain the growth performances of small economies. These could be political, institutional, trade related and/or structural, to name a few. Nonetheless, as Durlauf et. al (2004) have pointed out, the number of such potential factors is not exhaustive. Hoover and Parez (2004) noted from the existing cross section studies that there are more than 80 such growth enhancing factors which might be important. However, Greiner and Simmler (2004) state that different factors are important at different stages of development, with institutions in all but factor accumulation is important in the early stages of development. Nonetheless, there are no clear cut answers to the decade old question of the sources of growth in general.

In this respect, identifying the factors responsible for the tremendous decline in small growth rates in the post 1995 period is not an easy task. Some well-known growth constraints in small states are, for example, being small and remote from major markets or land-locked, extreme climatic conditions, political immaturity and many more, but many of these are time invariant and therefore cannot obviously be responsible for such a state of affairs in small states in the post 1995 period. This does not imply that they are not important, but in our view, are highly exogenous and therefore have little scope for policy⁵. Therefore, we explore other possible factors which might have had effects on small states since 1995. In this sense, ours is a lead-on work from Sampson (2005) who fell short of explaining the possible deterrents of growth in small states, except that he tested the effects of being small countries and remoteness from major markets.

⁴ An economy recovering from recession is likely to grow faster than another which may be about to enter into recession due to some fiscal or structural stimulus provided in the recessionary period.

⁵ In a recent comprehensive study of 140 countries, Ram and Prasad (2007) found that remoteness is not growth disadvantage to many developing countries.

3.0 Some Econometric Issues

Before we resort to empirical estimation, a few econometric issues need to be considered because just as the growth literature is unsettled, the econometrics of growth is also not straightforward and is debatable. First, one needs to select whether a time series or cross section approach is to be taken. There are limitations in both. For example, in a multi-country time series study, enormous regressions need to be estimated notwithstanding the constraints that might have to be imposed due to the lack of consistent time series data on all variables for all countries over a reasonable time frame. However, the advantage of such an approach is that it allows formulating country specific policy responses to growth issues. Further, recently there seems to be some reservations on conclusions drawn from cross section studies, see Jones (1995), Greiner et. al (2003) and Parente (2001). This is partly because in these studies, the assumption that all the sample countries have similar structures is not well founded. Therefore, it is not pragmatic to identify and prescribe country specific growth policies for all the sample countries - a reason why IMF and World Bank policies are criticized.

In addition, many cross section and time series works alike suffer from serious misspecification problems which involve regressing the growth rate of output with that of (supposedly) other growth enhancing variable(s) without any sound theoretical justification. Some researchers have also applied cointegration techniques within this framework. This is inadequate to capture the entrenched dynamics of growth, let alone its econometric justifications and use for policy. Easterly et. al (2003) observe that "... this literature has the unusual limitation of choosing a specification without clear guidance from theory, which often means that there are more plausible specifications than there are data points in the sample..." Further, ad-hoc specifications often give implausible and unreliable results which are of little use for policy. In an influential paper, Jayaraman and Choong (2006) whose work suffer from this problems suggests that a 1% raise in foreign aid will increase Fiji's growth rate by 131%, a conclusion which is not only absurd but unimaginable. Penal regressions also do not escape these issues and specification

problems. However, if specified properly, it is unlikely that different statistical methods will give conflicting summaries of observed facts, see Smith (2006) and Rao (2006) for a discussion. Nonetheless, these ad-hoc specifications are not consistent with the production theory because it is also hard to imagine an output equation without the two conditioning variables, capital and labour which if omitted could lead to serious misspecification errors. Bosworth and Collins (2003) suggest that these conditioning variables need to be retained in the regressions in order to analyze the significance of the hypothesized variables. This is also consistent line with Caselli's (2005) *chipping away* strategy.

Since our aim is to identify and test the possible factors affecting small states especially after 1995, we apply the time series approach. However, we have made some pragmatic compromises. First, 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 23 small states from 1980-2004 and in its sub-samples, 1980-1994 and 1995-2004, within a cointegration framework. However, due care has been taken that the missing observations do not disturb the underlying trends in variables. Second, our choice of the time series approach adequately serves our objective which is to investigate the growth factors in the two time intervals and not to prescribe country specific growth policies. Given the task at hand and the issues involved, it is hard to test which factors are prevalent in the two sub-samples with certainty. For this reason, our result must be interpreted with some degree of caution. We have ignored cross-section and penal approaches because not only they suffer from mis-specification problems, their estimates should be based on steady state values of variables and assuming that economies reach steady states within such short periods is not appropriate. The IMF-IFS and UN-WDI sources are used for data. Details of data, list of countries and variables are in the Appendices.

4.0 Empirical Results

4.1 Methodology and Specification

Our methodology is similar to Mankiew, Romer and Weil (1992) (MRW hereafter) which is an extension to the Solow model augmented with human capital estimated with the cross section data. Our attempt in this paper with time series approach modifies the MRW's extension and is adopted from Rao and Takuria (2006) who estimate the effects of foreign aid and remittances in Kiribati. Our basic specification is as follows:

$$Y_t = A_0 e^{zt} K_t^\alpha L_t^{1-\alpha} \quad (1)$$

where A_0 represents the initial stock of knowledge, t is time, K is capital and L is labour. Capital stock is estimated with the perpetual method with 4% rate of depreciation. The initial stock of capital is assumed to be 1.5 times the initial GDP. Equation (1) implies that the stock of knowledge not only changes with time but also depends on the shift variable (Z) which may have a permanent and/or a temporary effect on output. The specification in (1), except for the intercept and trend which are ignored for convenience, based on General to Specific Approach (GETS) where the long and/or short run effects of Z on Y can be captured and tested in a single step is as follows⁶:

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

⁶ Although it is desirable to apply a few alternative methods of estimating cointegrating equations only the GETS of LSE-Hendry is used. This is because, systems based method 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 Phillips- Hansen's methods. Ours is a pragmatically simpler approach and is an enhancement over Sampson and E&K's OLS procedure which has now come under serious criticisms in light of the unit root literature.

To distinguish between the temporary and permanent effects, the following procedure is used. First we include the hypothesized variable (Z) in the cointegrating equation with capital and labour. If there is no cointegrating equation between Y , L , K and Z but there is a cointegrating equation with only Y , K and L , then Z has no level effects on Y . In order to test if Z has only a temporary growth effect, its rate of change and their lags may be included into the short run dynamics based on the error correction mechanism adjustment process. If Z has no temporary effects, then changes in Z and its lagged values will have insignificant coefficients. If Z has both permanent and short run effects then β_3 and some γ_m would be significant. If Z has only level effects only β_3 would be significant and if it has only short run effects then β_3 would be insignificant while some γ_m would be significant. The value of λ measures the speed of adjustment and its significant indicates cointegration. We have used the Ericsson and MacKinnon (2002) test for cointegration for GETS estimated with small samples.

Some of the basic assumptions of our model should be noted. First, although the dependent variable is the rate of growth of output, it does not mean that the estimated equation is the steady state growth equation. This transformation is necessary to overcome unit root problems in variables. Consequently, unit root does not cause too much problems in GETS since its is estimated with a cointegration procedure. Second, we assume that there are constant returns to scale, as in the Solow model. We have not estimated an endogenous model because it is not only debatable but has also come under serious criticisms in the recent years; see for example, Jones (1995), Greiner et. al (2003) and Parente (2001). Further, justifications for increasing returns are only made when the factors being tested are expected to create externalities, in which case elaborate models of Greiner et. al (2003) needs to be estimated. We cannot argue that any of the variables being tested in our case do induce substantial external effects on small states. Third, additional variables, such as the export ratio etc., are introduced into the model as shift

variables. We feel that this is adequate for our purposes even though they can be introduced differently⁷.

The widely applied Augmented Dickey Fuller (ADF) is used for testing unit roots in the logs of the variables viz., output per worker (ln y), capital per worker (ln k), ratio of small states export on world exports (ln X), ratio of small states exports and imports on their GDP (ln TR), non-oil commodity price index (ln CP), EU sugar price (ln SP), import duty (ln duty), relative business risks (ln R), relative wage cost (ln W) and the cost of doing business in small states (ln CB). Only where ADF did not give any conclusive results, we applied the more powerful, Elliot-Rothenberg-Stock test (ERS) as a secondary measure and these lead us to conclude that all variables are unit root in levels and stationary in their first difference.⁸

⁷ For example, the cost of doing business might affect output via investment and consequently capital accumulation. This implies that capital should be endogenous to business costs, alluding to the ideas of endogenous models. However, this makes marginal difference to our estimates. Consider our specification in (2) which implies in the steady state, lnY is:

$$\ln Y = \alpha K + (1 - \alpha) \ln(AL) + \lambda \ln Z$$

If business costs are likely to work via capital, K can be expressed as $K = K_0^\alpha K^{\lambda Z}$ where K_0 is original stock of capital and Z is the cost of doing business, α and λ are the parameters being estimated. The output in steady state will be:

$$Y = K^{\alpha + \lambda Z} AL^\beta$$

$$\ln Y = \alpha \ln K + \lambda (\ln K \ln Z) + \beta \ln AL$$

Note the latter is a variant of ours which includes the interaction between the business costs and stock of capital (lnKlnZ) term. This and its lags when tested were not significant and thus were deleted from our estimates. However, note not all variables being tested directly affect output via capital. Thus it is reasonable to say that they affect productivity and one may estimate (2).

⁸ The test results are not reported here to conserve space, but are available from the authors upon request.

4.2 Empirical Results

In order to identify the underlying factors responsible for the turnaround in small states fortunes, we first analyze the growth rates of per worker incomes, capital and factor productivity using a simple growth accounting exercise followed by growth regressions. However, of this list of countries used by E&K, not all have consistent time series data on the basic variables required for growth accounting/regressions. Further there are some countries which were classified as small states by E&K but now have populations above a million. Therefore, these are excluded together with those who do not have consistent data on the basic variables. This gives the 23 small states as listed in Table-1, see Appendix B⁹.

Briefly, Table-1 (in Appendix) shows the computed growth rates of output, capital and productivity (in per worker terms) from 1980-2004 and in the two sub-samples, 1980-1994 and 1995-2004. It can be said that the growth rate of output per worker in small states which averaged around 1.1% from 1980-2004 has shown some remarkable trends in the two sub-periods. While the average growth of per capita output was around 1.60% during 1980-1994, it declined to a low of 0.50% in 1995-2004, a decline of 0.90 percentage points, similar to what was noted by Sampson (2005). This is a serious state of affairs for small states which deserves some attention.

However, one must note that the average growth of factor productivity (ΔA) declined from as high as 1.6% in 1980-1994 to around 0.2% in 1995-2004 period and reasonable explanation for the declining trend in growth rates can be attributed to the declining productivity.¹⁰ However, the so called factor productivity accounts for many unknown

⁹ Interested readers may consult E & K's papers for the list of small states studied.

¹⁰ Table 1 shows that most of our sample states have experienced significant declines in productivity over time. There are only a few (Bahrain, Barbados, Fiji, Guyana and Trinidad and Tobago) who have escaped this ordeal. However, except for Bahrain and Trinidad and Tobago, the growth of TPF for others in this list is still below 1% mark.

determinants of growth in addition to it being a measure of our ignorance. For this reason, we shall again turn to re-estimating econometric equations using the production functions approach with the two conditioning variables, labour and capital and other potential determinants (shift variables), which we postulate to be trade related, although there can be others, that might affect the growth of output in these countries. Our interest in trade stems from E&K's conclusions about trade openness and small states. Some important aspects of trade such as trade liberalization (in terms of trade restrictions, trade prices including preference price and trade shares) are considered in this paper. Further our analysis stretches to identify some possible reasons for the turnaround in the fortunes of small states.

We now detail the regression results obtained on output per worker of small states. Equation (2) is estimated with data from 1980-2004 (and the sub-samples) initially with 2 lag of each included variable in the dynamics. These full-sample results are not reported here, firstly to conserve space and secondly because our main objective is to evaluate the developments in the two sub-samples. In our sub-samples, only the first order lags and the significant second order lags from the full sample are retained. Following the variable deletion tests, the parsimonious equations obtained are reported below.

We first evaluated the effects of trade liberalization policies. Following the debt crises of the late 1970s and early 1980s many developing and small economies adopted liberalized trade policies which included the deregulation of product and factor markets, privatization of state owned enterprises and the adoption of export-oriented export policies with systematic removals of barriers to trade such as tariffs on imports. Due to data limitation, only the effects of changes in import duty (measured as a ratio of total imports) on small states output is reported in Table-3 below. Our results indicate that during the 1980-1994 period, the effects of import duty was insignificant and see (A1) and (A2)¹¹. This may be

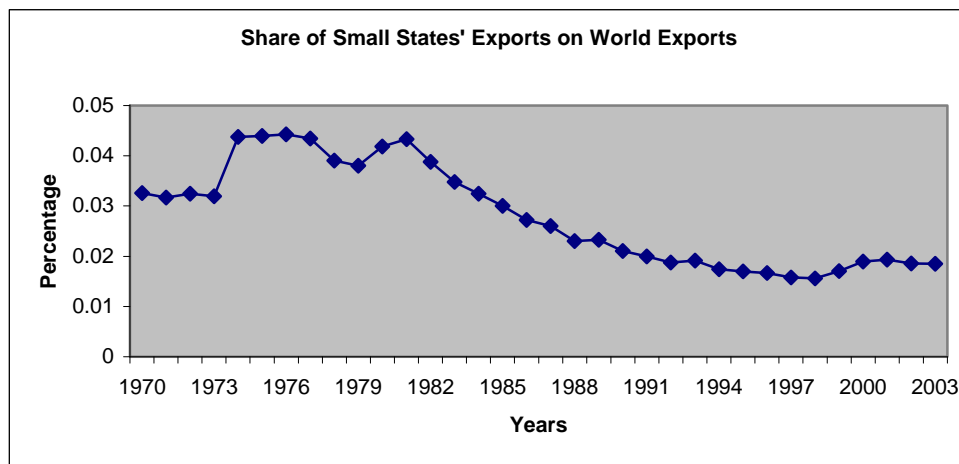
¹¹ In the following tables, the estimated share of profits (β_0) was somewhat low ranging from 0.18-0.35. Thus we constrained β_0 to 0.30, similar to the value normally used in growth accounting exercises for developing countries. The p-values are reported below the coefficients. The constraint parameters are indicated by (c). The chi-squares tests are for, serial correlation, functional form, normality in residuals and heteroscedasticity, respectively in the order as given in the table. The p-values are given beside the chi-square summary statistics. In all our estimations, none are significant at 5% except in (V) where heteroscedasticity is significant at 5% but

due to the inability of small economies to sustain their export growth after progressively liberalizing their tariff regimes. This is also a period when many of them had adopted the IMF and World Bank supported structural adjustment policies. Under these adjustment programs many of them had serious effects on their outputs because of the reduction in public expenditure which was high under their previously adopted Keynesian demand management policies. Not surprisingly, the effects of liberalization policies, like import duty seems to have become significant determinants of output in small states in the post 1995 period. The results are in (A3) and (A4). These indicate that there were both positive temporary growth and long run level effects on their incomes.

Tables-3 Effects of Trade Liberalization				
Sample	1980-2004		1995-2004	
Equation	A1	A2	A3	A4
Constant	5.113 (0.00)*	5.184 (0.00)*	11.286 (0.01)*	11.422 (0.00)*
Trend	0.012 (0.00)*	0.011 (0.00)*	0.036 (0.01)*	0.036 (0.01)*
lambda	-0.827 (0.00)*	-0.838 (0.00)*	-1.941 (0.01)*	-1.965 (0.00)*
β_0	0.30 (c)	0.30 (c)	0.300 (c)	0.300 (c)
duty	0.001 (0.86)		0.015 (0.07)**	0.015 (0.04)*
$\Delta \ln k$	0.421 (0.02)*	0.412 (0.00)*	0.631 (0.08)**	0.629 (0.05)*
$\Delta \ln y(-1)$	0.421 (c)	0.412 (c)	0.631 (c)	0.629 (c)
Δduty	-0.006 (0.19)	-0.006 (0.12)	0.014 (0.20)	0.015 (0.05)*
R-Bar	0.390	0.419	0.696	0.754
SEE	0.027	0.026	0.019	0.017
χ^2_{sc}	2.51(0.11)	1.95(0.16)	3.77(0.05)	2.98(0.10)
χ^2_{ff}	1.77(0.18)	1.97(0.16)	5.06(0.03)*	4.80(0.03)
χ^2_n	1.29(0.53)	1.24(0.54)	0.94(0.63)	1.00(0.61)
χ^2_{hs}	1.00(0.32)	0.76(0.38)	3.29(0.07)	3.46(0.63)

not at 2.5%. Nonetheless, for (V), the Whites adjusted standard errors are given. The Ericson-MacKinnon (2002) test accepts cointegration for all equations at conventional level, except for (B2 C4 and D3) where it is marginally accepted.

However, as noted above, outputs of small states together with their growth rates declined sharply in 1995-2004 period. The obvious question is why? We first analyze the behavior of small states' exports in the two sub-samples because liberalization policies are supposed to increase export performance which is expected to have the standard Keynesian effects on output. Shown in Figure-1 below is the (average) growth rate of exports (measured as a share of world exports) from small states.



It is worth noting that the average exports share which was as high as around 4.5% in the mid-to-late 1970, show a declining trend since 1980. While it was still higher in 1980, it declined to around 1% since 1990. Therefore one wonders what trade liberalization really has in store for small states. We are of the view that faced with their usual structural problems, liberalisation has opened doors for intense competition in small states and without doubt, these economies have failed to respond competitively.

Winters and Martin agree with E&K that small economies could create similar comparative advantages for themselves like the large economies from openness of trade but they also contend that institutional issues will add to costs disadvantages which will have to be mitigated by assistance from large and industrial economies. Without doubt in

absence of such assistance, these costs/risks have escalated overtime. In what follows, we test the effects of cost of doing business on small states outputs.

First, we test effects of business risks. We proxy business risks by the average market lending rate. What is important is to evaluate the effect of excess risks in small states relative to the larger developed economies. This is computed by taking the difference between the average market lending rates in small states relative to those in the major developed economies¹². Data shows that over the 1980-2004 sample, the excess risk in small states averaged 3.56 percentage points (pp). However, it more than doubled from 2.07pp in the 1980-1994 to 5.78pp in the 1995-2005 period. We then tested the effects of excess risks on small states output in the two sub-samples. The results are given in columns (B1 and B2), see Table-4 below where the risk factor is denoted as "factor" (because we have also tested the other costs variables and reported in the same table). The results indicate that in the 1980-1994 period, the effect of excessive business risks were not highly significant but in the 1995-2004 period, it has become a significant factor affecting outputs in small states.

The second cost factor that we have considered is the excessive labour costs in small states relative to the aforesaid developed countries including India. We could not obtain data on China. The excessive costs are computed as the difference between the ratio of wages and salaries of all industries on respective GDPs. Data shows that this variable averaged around 26.26pp in the full sample. However, it was 23.37pp in the 1980-1994 but escalated to 30.61pp in the 1995-2004 period. The effects of excessive labour costs are very similar to the risk factor and are given in columns (B3 and B4) of Table-4 below.

¹² These include, the USA, the UK, Canada, Australia, New Zealand, Switzerland, The Netherlands, Japan, Italy, Germany and France.

Table-4: Effects of Business Costs in Small States on Their Output						
	Excessive Business Risks		Excessive Wage Costs		Cost of Doing Business	
Sample	1980-1994 (B1)	1995-2004 (B2)	1980-1994 (B3)	1995-2004 (B4)	1980-1994 (B5)	1995-2004 (B6)
Constant	4.389 (0.00)*	1.645 (0.09)**	4.371 (0.02)*	7.374 (0.00)	3.174 (0.02)*	6.536 (0.02)*
Trend	0.012 (0.01)*		0.015 (0.03)*	0.015 (0.00)*	0.008 (0.03)*	0.015 (0.02)*
lambda	-0.709 (0.00)*	-0.265 (0.08)**	-0.660 (0.01)*	1.256 (0.00)*	-0.529 (0.02)*	1.149 (0.01)*
β_0	0.30 (c)	0.30 (c)	0.30 (c)	0.30 (c)	0.30 (c)	0.30 (c)
Factor	-0.01 (0.18)	-0.059 (0.02)*	-0.180 (0.18)	-0.102 (0.00)*	-0.065 (0.16)	-0.161 (0.04)*
$\Delta \ln k$	0.651 (0.00)*	0.764 (5.58)*	0.649 (0.00)*	0.528 (0.00)*	0.797 (0.00)*	0.479 (0.02)*
$\Delta \ln k(-1)$			-0.407 (0.07)**	-0.500 (0.00)*	-0.298 (0.15)	-0.615 (0.05)*
ΔFactor	-0.012 (0.03)*					
$\Delta \text{Factor}(-1)$	-0.012 (0.03)*					
R-Bar	0.728	0.873	0.616	0.984	0.661	0.952
SEE	0.018	0.012	0.023	0.004	0.021	0.007
χ^2_{sc}	0.471 (0.49)	0.314 (0.58)	4.628 (0.03)	2.406 (0.12)	3.973 (0.05)	0.689 (0.41)
χ^2_{ff}	2.358 (0.13)	1.966 (0.16)	0.497 (0.48)	1.211 (0.27)	3.919 (0.05)	0.448 (0.50)
χ^2_n	0.38 (0.83)	0.672 (0.72)	2.113 (0.35)	0.574 (0.75)	2.089 (0.35)	0.725 (0.70)
χ^2_{hs}	0.891 (0.35)	3.141 (0.08)	0.051 (0.82)	0.052 (0.82)	3.012 (0.08)	0.010 (0.75)

We also tested the interaction of market risks and labour costs. This variable is denoted as the cost of doing business (cob) in small states and is a (equally) weighted average of the two aforesaid variables¹³. Our computations show that the average increase in cob in the 1995-2004 relative to 1980-1994 period has been around 30%. This remarkable increase has had negative effects on small states output, see Tabel-4, (B5 and B6) which justifies these observations.

In a nutshell, we can say that the misfortunes of small states are related to raising business costs/risks (relative to the larger developed states) that have affected their outputs, possibly through their effects on business investments. Note following the 1990s, together with liberalization, preferential treatments were being removed. Developing economies, including the small states were mandated to remove investment subsidy and protection of domestic industries by the large economies and WTO, as such the viability of inevitable funds were in question. In fact trade preferences began to erode after the conclusion of the Uruguay Round and the current trade negotiation under the WTO has provided further impetus for the erosion of trade preferences. We argue that in the absence of these assistance, it is reasonable that faced with high operation costs, major investment enterprises in export oriented industries from these states would wind-up operations to places where their investment fetches better returns. As Winters and Martin argue that if wage costs are priced zero, the total manufacturing costs would still be higher than the world prices, leading to negative rate of returns. Against this background, aggressive profits seekers have no choice but to shift production to cheap cost economies such as Indian and China. For these reasons, employment, output and growth rates may have all declined tremendously.

¹³ Other potential variables that could be included in this index are tax costs, utility costs and office rental costs etc. However, we could not obtain consistence data for all these variables for our sample. Thus our measure of cob is restrictive. Nonetheless, labour costs covers over 50% of all business costs. In each of these regressions, the interactions and their lags as explained in footnote (7) were insignificant.

Further, we find that small states have been very vulnerable to movements in export prices of agricultural and primary products. The declining terms of trade for primary producers (majority of the small economies are in this category) have not helped many of the small economies. In addition, many of the small economies in African, Caribbean and Pacific region have relied on preferential trading arrangements for their mainly single commodity exports. For example, sugar growing small economies in these regions have relied on the European Union for above the world market price for sugar. In many of these countries the concern about the collapse of the sugar industry after the declining sugar export prices has called for action by the EU. One such action being considered within the framework of the Economic Partnership Agreements is substantial adaptation development fund for re-adjustment.

We go further and question whether the one off adjustment fund will bring about fundamental changes to the structure of the economy which will be sufficient for small economies to reap the benefits of openness of trade under the WTO. In our view small economies would 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.

These adaptation and adjustment funds would be small amounts from the developed countries to these small economies. The pledge by industrial and developed countries that an amount of 0.7 percent of their GDPs should be the target for aid to developing countries on an annual basis should be considered seriously as none of them has reached that target yet. 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 a seemingly “big problem” for small economies. However, these funds need adequate monitoring and accountability. In most cases they should be used to build capacity and not used by governments in financing re-current spending. The literature on effects of aid

generally suggests that aid has failed. The least that could be done is techniques of learning by doing and competitiveness be enhanced in small states. This will buy them the necessary time that they require to be competitive in the world economy.

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 states. This is because the initial conditions after trade liberalization 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.

The current assumptions that openness will facilitate growth and alluding to E&K's idea that trade enhancing variables must create a net positive effect on small states, we now test a few other trade related variables and their effects on small states outputs. Two measures of trade shares are tested. First, small states' ratio of exports and imports to GDP and second their exports as a ratio of their GDP. These variables measure the small states' ability to produce exportables creating effective backward and forward linkages in their economies. Data shows that trade ratio declined by 0.42% annually (on average) from 1980-2004. However, it slowed to 0.21% in the 1995-2204, a decline on 10 percentage points from 1980-1994 period. Similar observations are made for exports share which declined by an average annual rate of 10%, but this declined slowed down to 2% in the post 1995 period. It was however higher at around 7% in the 1980-1994 period. The regression results of the effects of these two variables are in Tables-5. The trade ratio (TR) – the share of exports and imports on GDP in the two sub-samples – is evaluated in equations (C1) to (C4). In both the sub-samples, the results indicate that trade ratio has a temporary growth enhancing effect, but only temporary. Similarly, we evaluated the share of exports on the small states' own GDP (XR). In the sub-samples of 1980-1994 in

(C5) and (C6) the results indicate that it also has temporary growth effects. In the 1995-2004 period, see (C7), the growth effects of export share are similar.

Table-5 Effects of Trade and Exports Ratio in Small States Output							
Equation	1980-1994		1995-2004		1980-1994		1995-2004
	C1	C2	C3	C4	C5	C6	C7
Constant	3.383 (0.00)*	3.977 (0.01)*	4.798 (0.00)*	2.895 (0.12)	3.548 (0.03)*	5.119 (0.00)*	4.079 (0.06)**
Trend	0.007 (0.00)*	0.008 (0.15)	0.012 (0.00)*	0.012 (0.04)*	0.002 (0.98)	0.014 (0.00)*	0.008 (0.13)
lambda	-0.547 (0.00)*	-0.629 (0.01)*	-0.778 (0.00)*	-0.514 (0.10)**	-0.554 (0.04)*	-0.829 (0.00)*	-0.678 (0.06)**
β_0	0.317 (0.00)*	0.300 (c)	0.300 (c)	0.300 (c)	0.300 (c)	0.300 (c)	0.300 (c)
$\Delta \ln k$	0.629 (0.00)*	0.542 (0.01)*	0.435 (0.01)*	0.691 (0.00)*	0.710 (0.00)*	0.647 (0.00)*	0.644 (0.01)*
$\Delta \ln XR(-1)$					0.162 (0.00)*	0.158 (0.00)*	0.124 (0.08)**
$\Delta \ln TR$	0.207 (0.09)**	0.315 (0.12)	0.455 (0.01)*	0.604 (0.04)*			
$\Delta \ln TR(-1)$	0.407 (0.00)*	0.554 (0.01)*	0.533 (0.01)*				
R-Bar	0.808	0.782	0.776	0.944	0.818	0.795	0.782
SEE	0.016	0.017	0.017	0.008	0.016	0.016	0.017
χ^2_{sc}	0.24(0.62)	0.71(0.40)	0.01(0.93)	0.77(0.38)	0.66(0.42)	0.01(0.99)	0.71(0.40)
χ^2_{ff}	0.45(0.50)	0.02(0.88)	0.85(0.36)	---	2.9(0.09)	0.57 (0.50)	0.02(0.88)
χ^2_n	0.83(0.66)	0.79(0.67)	0.71(0.70)	---	0.58(0.75)	0.50(0.78)	0.79(0.67)
χ^2_{hs}	0.32(0.07)	2.79(0.95)	2.34(0.13)	0.58(0.44)	0.82(0.28)	0.02(0.90)	2.79(0.95)

Thus in light of these observations, it is hard to argue that trade openness will more than offset the negative effects of other growth deterrents because it seems that openness only has temporary growth effects, unless adequate domestic capacity is built (in small states) to realize the long term benefits of trade. Therefore, higher trade volumes may not yield the much expected/needed growth effects in small states that lack capacity.

We realize that most of the small states are producers of one or two major primary products like sugar, textiles and/or bananas. Therefore, it is worth investigating the effects of trade prices on their outputs. In this section, we analyze the effects of EU preferential sugar price which most of the sample countries receive. Consistent data on other prices are not available for all states.

Table-6 below shows the behavior of small states' outputs when we introduce EU sugar prices. For the first sub-sample, the results show that there are both positive growth and level effects of sugar prices on small state's outputs, see column (D1). However, in the sub-sample of 1995-2004, there are indications that the level effects are insignificant and negative, see columns (D2). In (D3), there are weak indications of negative short-term growth effects following 1995. This could be of some concerns. Note that the average annual growth rate in EU sugar price in the 1980-1994 period is close to 3% but it is around 1% in the 1995-2004 period. A close examination in this period indicates that sugar prices have actually declined from 1996 to 2001 by an average of 4.3% per annum. For those who rely heavily of such preferences the consequences are imaginable. However, when we included a dummy for non-sugar producing countries, the cointegration results were not robust for the 1995-2004 period.¹⁴ Thus, the sugar results should be interpreted with some degree of caution.

¹⁴ These are Bahrain, the Bahamas, Antigua and Barbuda, Cyprus, St. Lucia Samoa, Solomons and Vanuatu.

Table-6 Effects of EU Sugar and Non-Fuel Commodity Prices on Small States Output							
	1980-1994 D1	1995-2004 D2 D3		1980-1994 D4 D5		1995-2004 D6 D7	
Constant	7.171 (0.02)*	4.795 (0.16)	3.087 (0.17)	3.557 (0.04)*	3.328 (0.04)*	6.876 (0.00)*	6.711 (0.00)*
Trend	0.012 (0.00)*	0.010 (0.13)	0.009 (0.13)	0.010 (0.00)*	0.009 (0.04)*	0.010 (0.04)*	0.010 (0.01)*
lambda	-1.250 (0.02)*	-0.731 (0.15)	-0.505 (0.17)*	-0.640 (0.04)*	-0.541 (0.04)*	-0.977 (0.00)*	-0.950 (0.00)*
β_0	0.300 (c)	0.300 (c)	0.300 (c)	0.300 (c)	0.300 (c)	0.300 (c)	0.300 (c)
ln CP(- 1)				-0.127 (0.36)		-0.163 (0.03)*	-0.168 (0.00)*
lnSP(-1)	0.164 (0.01)*	-0.112 (0.34)					
Δ lnk	0.636 (0.03)*	0.642 (0.02)*	0.697 (0.00)*	0.714 (0.00)*	0.718 (0.00)*	0.811 (0.00)*	0.801 (0.00)*
Δ lnk(-1)				0.371 (0.15)	0.355 (0.16)		
Δ lny(-1)	0.524 (0.02)*			0.371 (0.15)	0.399 (0.16)	0.195 (0.20)	0.168 (c)
Δ lnSP	0.263 (0.00)*	-0.096 (0.21)	-0.097 (0.08)				
R-Bar	0.795	0.854	0.862	0.539	0.550	0.944	0.955
SEE	0.016	0.013	0.013	0.025	0.024	0.008	0.007
χ^2_{sc}	0.04(0.85)	1.12(0.26)	0.40(0.53)	5.28(0.02)*	4.73(0.03)*	0.06(0.81)	0.11(0.75)
χ^2_{ff}	2.45(0.12)	2.21(0.14)	0.45(0.50)	1.62(0.20)	1.56(0.21)	3.17(0.08)	3.12(0.08)
χ^2_n	0.48(0.79)	0.02(0.99)	0.58(0.45)	0.01(0.95)	0.21(0.90)	0.71(0.70)	0.84(0.66)
χ^2_{hs}	1.13(0.29)	2.28(0.13)	0.76(0.38)	0.25(0.26)	1.51(0.22)	4.22(0.04)*	2.29(0.07)

While the effect of EU sugar prices may be restrictive, it is also worth investigating the effects of commodity price (CP) (excluding oil) on small states output. The results are in Table-6 also. In the 1980-1994 period, there seems to be some insignificant level effects,

see (D4), but in (D5) it is clear that there are no such notable effects. Interestingly, in the 1995-2004 period, the negative level effects seems to be highly significant, see column (D6). This estimate is further improved adopting a useful constraint on $\ln CP(-1)$ and $\Delta \ln y(-1)$. The results are given in (D7) indicating a strong negative level effect of commodity prices on output in the 1995-2004 period. Thus we may say that the developments in commodity prices faced by the small states seem to have had negative effects on their outputs in this period. Other trade related variables such as export prices and export shares were tested. The results indicated only temporary effects. However they are avoided here to conserve space, but are available from the authors upon request. Nonetheless, the indications are that trade only gives temporary growth effects and at times are harmful for small states particularly when they lack capacity.

5.0 Conclusions and Policy Implications

In this paper, we used average observations of 23 small states from 1980-2004 with time series data for the two sub-samples (1890-1994 and 1995-2004) and showed that while liberalization policies has had positive implications on small states output, significant cost of doing business do not allow competitiveness in exports and productivity gains. These costs are due to lack of capacity, infrastructure and quality institutions which has implication for investment. Further, while trade openness provides only temporary growth effects, developments in trade prices seem to induce negative growth and level effects in the post 1995 period. This leads us to conclude that excessive cost of doing business in small states and negative trade effects seem to have contributed to the sad state of affairs in small states in the post 1995 period following the withdrawals of investments support funds due to trade liberalization.

In view of these above findings, we argue that small developing economies have a strong case for support from the developed countries and donor agencies for adjustment and adaptation funds on a sustained basis for a long term and this could be between 10-20 years as small economies have little potential for the development of manufacturing

sector to a level which will allow them sustainable export growth. Majority of them would rely on the development of the services sector and in particular tourism for their growth. However, the full potential of the services sector will also depend on their ability to develop institutions, infrastructure and domestic tourism products which are competitive. Therefore, developed countries will have to consider seriously the Special and Differential Treatment (SDT) provisions within the WTO and put in place a sustainable provision for small economies. The insistence of complete reciprocity in the current Economic Partnership Agreements (EPAs) based on the provision within 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 aid and loans organizations. 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 their prosperity.

Some caveats in our analysis should also be noted. First, the answer to what “happened after 1995” yields a sample frame which is very small and therefore the ensuing results should be interpreted as indicative rather than as definitive. Nonetheless, even if more data points were available, the general observations will not be far from what we have obtained. Further, there can be other potential variables that are at play in this period. However, it is clear that trade related and competitiveness variables are quite important as the estimated equations augmented with them seem to produce good fit of data.

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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 from the IFS 2002. The sugar prices only include the countries 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.

Relative **business risk** is proxied by the average market lending rate. This is computed by taking the difference between the average market lending rates in small states relative to those in the major developed economies. Similarly, relative **wage cost** is the excessive labor costs in small states relative to the developed countries, including India. The **cost of doing business** is an average of the business risks and wage costs as defined above. For the list of countries used for comparisons, see the footnote 10 in the text.

Appendix –B: Basic Growth Accounting Results

Table 1: Average Growth Rate of Output, Capital and Productivity (%)										
		1980-2004			1980-1994			1995-2004		
	Country	Δy	Δk	ΔA	Δy	Δk	ΔA	Δy	Δk	ΔA
1	Antigua& Barbuda	4.17	2.06	2.11	5.25	2.26	3.00	2.55	1.77	0.78
2	Bahamas, The	0.99	0.31	0.69	0.99	0.31	0.68	1.00	0.30	0.70
3	Bharain	-0.65	-0.11	-0.54	-1.37	0.46	-1.82	0.42	-0.97	1.39
4	Barbados	0.07	0.33	-0.26	-0.52	0.39	-0.91	0.96	0.24	0.73
5	Belize	2.35	0.55	1.80	2.94	0.37	2.57	1.47	0.82	0.65
6	Cape Verde	1.86	0.46	1.40	1.89	0.41	1.48	1.82	0.55	1.28
7	Comoros	-0.60	-0.50	-0.10	-0.46	0.16	-0.62	-0.82	-1.49	0.67
8	Cyprus	3.60	1.10	2.50	4.28	1.12	3.16	2.59	1.07	1.52
9	Fiji	-0.50	-0.68	0.18	-0.87	-0.65	-0.22	0.06	-0.72	0.77
10	Grenada	3.13	1.24	1.89	3.60	0.82	2.78	2.42	1.86	0.56
11	Guyana	-1.13	-0.34	-0.79	-2.19	-0.66	-1.53	0.45	0.14	0.32
12	Iceland	1.41	-0.92	2.32	0.58	-1.81	2.40	2.64	0.42	2.22
13	Luxemburg	3.60	1.61	1.98	3.61	1.60	2.01	3.58	1.63	1.94
14	St. Kitts and Nevis	3.81	1.39	2.42	5.73	1.41	4.32	0.94	1.37	-0.43
15	St. Vincent & Grenadines	3.24	1.93	1.32	3.63	1.97	1.66	2.67	1.87	0.79
16	St. Lucia	2.71	0.38	2.33	4.62	0.40	4.22	-0.16	0.35	-0.51
17	Samoa	-2.16	-0.71	-1.45	-0.38	0.09	-0.47	-4.83	-1.93	-2.90
18	Seychelles	1.44	0.71	0.73	2.38	-0.03	2.41	0.03	1.81	-1.78
19	Solomon	-0.28	-1.68	1.40	1.90	-1.58	3.48	-3.54	-1.82	-1.72
20	Surinam	-1.09	-0.92	-0.17	-2.75	-4.73	1.98	1.39	4.79	-3.41
21	Swaziland	1.31	-2.37	3.68	2.76	-2.16	4.92	-0.87	-2.69	1.81
22	Trinidad& Tobago	0.14	-0.15	0.29	-2.08	0.12	-2.19	3.45	-0.56	4.01
23	Vanuatu	-1.11	-0.75	-0.36	2.73	0.02	2.70	-6.87	-1.92	-4.95
	Sample Average	1.14	0.13	1.02	1.58	0.01	1.56	0.49	0.30	0.19

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

APPENDICES - C Results Quoted from Sampson (2003)

Table 2': Re-estimating E&K's income and growth regressions (UN dataset).

Variable	(a)	(b)
Dependent variable	Log of average GDP per capita 1995-2003	Average growth in GDP per capita 1995-2003
Small state	1.09*** (0.181)	-0.807** (0.394)
Sub-Saharan Africa	6.14*** (0.143)	1.29*** (0.340)
Asia	6.89*** (0.224)	2.00*** (0.427)
Europe and Central Asia	7.72*** (0.216)	3.48*** (0.347)
Middle East and North Africa	7.62*** (0.239)	1.48*** (0.522)
Western Hemisphere	7.52*** (0.143)	1.64*** (0.339)
OECD	2.40*** (0.204)	-0.669* (0.399)
Oil	0.828*** (0.256)	-0.548 (0.828)
R ²	0.59	0.16
N	194	194

Robust standard errors in parentheses. '*' indicates significance at the 10% level, '**' indicates significance at the 5% level and '***' indicates significance at the 1% level.

Table 4': Income and growth regressions excluding small states not covered by E&K (UN dataset).

Variable	(a)	(b)
Dependent variable	Log of average GDP per capita 1995-2003	Average growth in GDP per capita 1995-2003
Small state	0.824*** (0.203)	-0.0940 (0.487)
R ²	0.59	0.16
N	173	173

Robust standard errors in parentheses. '*' indicates significance at the 10% level, '**' indicates significance at the 5% level and '***' indicates significance at the 1% level. Oil exporter, OECD member and region dummies included in all regressions.

Table 6': Initial Income, Islands and Growth (World Bank dataset)

Variable	(a)	(b)	(c)	(d)	(e)
Dependent variable	Average growth in GDP per capita 1995-2003			Log of average GDP per capita 1995-2003	Average growth in GDP per capita 1995-2003
Small state	-0.689* (0.387)	-0.911** (0.398)	-0.897* (0.461)	0.157 (0.271)	-0.277 (0.347)
Log of GDP per capita 1995	-0.123 (0.133)	0.0659 (0.102)	-	-	-
Island	-	-	0.0377 (0.434)	0.804*** (0.282)	-
Regional/OECD included	Yes	No	Yes	Yes	Yes
Pacific dummy	No	No	No	No	Yes
R ²	0.22	0.03	0.21	0.42	0.27
N	176	176	178	176	178

Robust standard errors in parentheses. '*' indicates significance at the 10% level, '**' indicates significance at the 5% level and '***' indicates significance at the 1% level. Oil exporter dummy included in all regressions.

Table 7': Remoteness, income and growth (World Bank dataset)

Variable	(a)	(b)	(c)	(d)	(e)	(f)
Dependent variable	Average growth in GDP per capita 1980-94		Average growth in GDP per capita 1995-2003		Log of average GDP per capita 1980-94	Log of average GDP per capita 1995-2003
Small state	1.86*** (0.453)	1.87*** (0.469)	-0.693* (0.419)	-0.592 (0.403)	0.675*** (0.211)	0.917*** (0.201)
Remoteness	- 6.69x10 ⁹ ** (3.37x10 ⁹)	1.13x10 ⁹ (1.70x10 ⁹)	-3.71x10 ⁹ (2.56x10 ⁹)	- 6.68x10 ⁹ *** (1.67x10 ⁹)	-2.26x10 ⁹ *** (8.33x10 ⁸)	-3.19x10 ⁹ *** (8.57x10 ⁸)
Regional	Yes	No	Yes	No	No	No

dummies included						
R ²	0.34	0.16	0.21	0.11	0.54	0.53
N	142	142	170	170	141	168

Robust standard errors in parentheses. ‘*’ indicates significance at the 10% level, ‘**’ indicates significance at the 5% level and ‘***’ indicates significance at the 1% level. Oil exporter and OECD member dummies are included in all regressions.