GLOBALIZATION AND GOVERNMENT SIZE: ADOPTING THE MEAN GROUP ESTIMATOR MODEL

BY

Oscar Caster Katumba

THESIS

Submitted to
KDI School of Public Policy and Management,
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ABSTRACT

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Conventional pooled estimators such as fixed and random effects models posit parameter homogeneity across countries, but this study employed the Mean Group Estimator Model (Pesaran and Smith 1995), which considers parameter heterogeneity to analyze the average effect of globalization, including the impact of its primary constituents such as trade liberalization and financial openness, on the size of government in a sample of 25 countries between the period 1973 and 2005. While overall globalization`s average effect was insignificant, it assumed strong negative and positive significance at country level.

Conversely, both trade openness and international capital flows were negatively and significantly related to government size, rendering credence to the *efficiency hypothesis* (Liberati 2007), albeit related positive and significant country coefficients also existed. By and large, the study shows that different levels of openness, coupled with different political, economic, and social structures across countries, all serve to uniquely determine the size of government. The latter disparity in openness and structures, may also plausibly explain how governments may act to maximize globalization`s benefits, and also ward off its negative effects. Precisely, this study affirms the import of country heterogeneity, in understanding globalization`s effect on government size, akin to an 8-country study done by Islam (2004).

요약

글로벌와와 정부 규모: 평균 추정 모델 이용

저자: 오스카 캐스터 카툼바

본 연구는 고정 및 무작위 영향 모델과 같은 변수 동질성을 가정한 통합 추정 모델과 달리 평균 추정 모델을 Mean Group Estimator Model (Pesaran and Smith 1995) 사용한다. 여기서 평균 추정 모델은 국가들의 변수 비동질성를 고려하여 글로벌 영향을 분석하며, 무역 자유화, 금융 개방 등을 고려하여 1973 년부터 2005 년까지 25 개국의 정부 규모에 대해 분석하였다. 전체 글로벌화의 평균 영향은 미미한 것으로 나타났으나 본 연구는 국가 레벨에서 높은 중요도를 가정하였다.

무역개방도와 국제 자본 유입은 국가 규모와 부의 관계를 보였으며, 몇몇 정의 관계를 보이는 국가 계수에도 불구하고 효율성 가설과 (Liberati 2007) 같은 맥락의 내용을 보여주었다. 본 연구는 크게 국가들의 정치, 경제, 사회 구조와 연계된 개방도가 정부 규모에 영향을 미친다는 것을 보여준다. 개방도와 구조의 차이는 어떻게 정부가 글로벌화의 혜택을 극대화하고 손실을 피하는지를 설명해줄 수 있다. 본 연구는 세부적으로 이전 Islam (2004)의 8 개국을 대상으로 실시된 국가별 비동질성을 활용한 정부 규모에 대한 글로벌화 영향을 확인해준다.

Dedicated to God Almighty, my benefactor-the South Korean Government, Uganda`s National Water & Sewerage Corporation, my dearest Mother-Ms. Ruth Nakayiwa Male, Dad-Mr. Vincent Ssebugenyi, Ms. Flaviah Adong, Prof. Shu Chin-Lin, Prof. Lee Young-Ki, Uncle Leonard Bufumbo, Uncle Fred Wantaate Ssetuba Male, Patrick Mutumba, Aunty Dorothy Male, Br. Lee Jongtae, Br. Surender Sajwan, Br. Eugene Kim, Br. Hahm Taesik, Ms. Song Sang Myeong, Mrs. Theresa Hong, Mr. Jonathan Park, Mr. Kevin Hong, Mr. Kum Changsup, Pr. Jason Choi Eun Ho, Aruna Ranaweera, Khalil Shad, Bhakta Prasad Gaire, and Ms. Lee Yeongju

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ACRONYMS AND ABBREVIATIONS

EITC: Earned Income Tax Credit

GDP: Gross Domestic Product

IMF: International Monetary Fund

KOF: Swiss Federal Institute of Technology Zurich (ETH)

MGE: Mean Group Estimator

OECD: Organization for Economic Co-operation and Development

OLS: Ordinary Least Squares

WDI: World Development Indicator

WTO: World Trade Organization

LDCs: Least Developed Countries

INTRODUCTION

The main purpose for this study is to assess globalization`s impact on the size of government. Globalization`s overarching features include trade, labor mobility, capital movement, and knowledge dissemination. The latter aspects facilitate funding source diversification, technology transfer, plus product diversity, which conduce to the creation of myriad benefits such as consumer price reduction, more efficiency, and bigger export markets for domestic manufacturers. Nonetheless, the latter advantages may render economies susceptible to supply shortages, output disruptions, income volatility, and currency fluctuations, which can culminate into intractable financial and economic crises.

Consequently, this study underscores specific domestic policy implications, germane to mitigating globalization-induced risks, and maximizing its salutary benefits. Proxying globalization as trade openness in their seminal papers, both Cameron (1978) and Rodrik (1998) showed that over the years government spending[1] and the associated tax revenue had grown bigger, as a form of social insurance against the external risks to which small open economies were exposed. The latter alleviatory government response was christened the *compensation hypothesis* (Bretschger and Hettich 2002; Ram 2009).

Antithetical to the *compensation hypothesis* is the *efficiency theory*, which postulates that capital mobility precludes high government taxation and spending, hence implying a negative correlation between globalization and government size (Garett and Mitchell 2001). Also, pervading the existing literature is the use of fixed effects estimators, which assume parameter homogeneity. However countries` social, economic, and political structures are disparate, bespeaking uniquely different responses to globalization. Islam (2004) showed that trade volatility`s impact on government size is "idiosyncratic, and that country

[1]Government spending may comprise expenditures related to, among other things, unemployment insurance, welfare benefits, social protection, and subsidies to companies to train and retain workers.

specific heterogeneity may determine the nature of the relationship between government size, openness, and volatility." Hence, to consider parameter heterogeneity, the Mean Group Estimator proposed by Pesaran and Smith (1995) is invoked, to retrace the effect of international trade, plus financial openness on government size. It is plausible that a reactive response to address globalization`s negative effects, and a pro-active strategy to maximize its benefits may both increase government spending, while a global credit crunch or uncertainty-induced capital flight may both attenuate it.

(A) STUDY MOTIVATION

Government spending forms an integral part of aggregate demand, which also determines economic growth. So to exert a beneficial effect on economic growth, government spending may be invoked. Furthermore, risk diversification and trade liberalization are among the plausible channels, through which globalization may be a boon to the economy. Now, ways abound in which government spending may be occasioned or influenced by globalization. For example, a reactive response to address globalization`s negative effects, and a pro-active strategy designed to maximize its benefits, may increase government spending. On the other hand, a global credit crunch, or uncertainty-induced capital flight, may attenuate government spending. Therefore, the academic and practical import of the latter scenarios, coupled with their empirical allure constitute this study`s primary motivation.

(B) STUDY HYPOTHESIS

As globalization increases, the size of government also increases, to neutralize the negative effects induced by globalization, and thus a positive correlation is expected between the two variables (Rodrik 1998 and Cameron 1978).

(C) PROBLEM STATEMENT

Globalization is touted for its myriad benefits, but also blame is imputed to it for the financial and economic crises it may engender and exacerbate (Hagelüken 2011). Social obligation and political pressure impel governments, to preserve and improve the competitiveness of domestic workers and infant-industries, but such interventions import financial commitments, which can either be a bane or a boon to the economy. For instance, government spending on health, infrastructure, and education can have a salutary effect on the economy, while funds expended on social programs can create a perverse dependence on the state, liquidating the incentive of welfare beneficiaries to start their own businesses or job-hunt. Worth noting, is that the mitigatory responses by government really beg the question, whether such interventions would be sustainable, and at what cost to the tax-payer.

(D) THE STRUCTURE OF THE PAPER

In chapter 2 the extant literature is reviewed, chapter 3 expatiates on econometric issues, the methodology adopted, and the data used. In chapter 4 the results are presented and main findings discussed, while Chapter 5 comprises the study`s pertinent policy implications, recommendations for further research, and conclusive remarks.

LITERATURE REVIEW

The extant literature includes globalization-triggered government spending; capital mobility preventing high taxation and government spending; and the no-correlation between globalization and government size views. Preceding the discussion on globalization and government size, is how both work to affect economic growth.

(A) GOVERNMENT SIZE AND ECONOMIC GROWTH

Invoking different proxies for government size and economic growth, studies on the relationship between the two latter variables show opposing correlations (Bergh and Henrekson 2011). For instance, by using either OECD member states or a heterogeneous mixture of both developed and developing countries, government size is shown to exert a negative effect on economic growth (Cameron 1982; Landau 1983; Marlow 1986; Agell *et al*. 1997; Fölster and Henrekson 2001; Dar and AmirKhalkhali 2002; Romero-Avila and Strauch 2008; Afonso and Furceri 2010; Bergh and Karlsson 2010). Basically, in an environment bereft of adequate financial and real resources, the negative impact is possible due to the *crowding-out effect,* where governments given to profligate spending borrow when taxes hardly suffice, potentially distorting resource allocation, and scanting the available capital for private investment, for they ultimately engender high interest rates (Bacon and Eltis 1976).

On the other hand, while employing unique methodologies and different sample periods, either a positive correlation between government size and economic growth was ascertained, or the negative correlation between the two variables was found to be tenuous (Ram 1986; [2]Lindert 2004; Agell *et al*. 2006; [3]Madrik 2009; Colombier 2009). Besides supplementing an ineffective monetary policy, especially when interest rates are already low,

[2]Lindert, Peter. H. *Growing Public*: *Social Spending and Economic Growth Since The Eighteenth Century*, Cambridge, England: Cambridge University Press, 2004.
[3] Madrik, Jeff. *The case for big government*, Princeton, NJ: Princeton University Press, 2009.

akin to the scenario in most advanced countries during the 2008 global financial crisis, public expenditure can stimulate the macro-economy during low, negative growth periods, by increasing the aggregate demand level to make up for the reductions in other constituents of aggregate demand, such as decreased household spending on consumer goods, and reduced firms` spending on capital goods.

(B) GLOBALIZATION AND ECONOMIC GROWTH

Studies using different proxies of globalization, while employing different econometric methods also yield dissimilar results. For example, some studies show a positive correlation between globalization and economic growth (Borensztein et al. 1998; Greenaway et al. 1999; Dollar and Kraay2001; Dreher 2006). Others while proxying globalization as capital account openness, hardly found any effect of it on economic growth (Rodrik 1998; Alesina et al 1994). Carkovic and Levine (2002) used foreign direct investment to represent globalization, but scarcely affirmed its robust influence on growth.

Most importantly, Garita (2009) indicates that albeit "higher levels of FDI in-flows stimulate GDP per worker growth, they crowd-in domestic investment for developing and emerging markets." More so, Popov (2011) shows that output growth and growth variability are joint outcomes of financial liberalization, and that strong institutions enhance the growth benefits of financial liberalization, and mitigate its concomitant costs. Basically, an increase in export performance would expand demand, and mitigate the risks synonymous with relying on the local market, hence creating an increase in efficiency and productivity, plus boosting employment in labor-intensive sectors.

(C) GLOBALIZATION AND GOVERNMENT SIZE

Cameron (1978) ascertained a positive association between trade openness and government size; then Rodrik (1998) plausibly explained that the positive correlation resulted

from greater exposure to international trade-induced external risks, which impel governments to invoke their debt or tax-financed spending abilities to ease the volatilities in domestic income and consumption. Alesina and Wacziarg (1998) also explain the latter association, by empirically showing an inverse relationship between country size and government size. However, scholars on the topic of globalization and government size, are basically distinguishable according to their espousal and empirical affirmation of either the [4]*compensation hypothesis* (Cameron 1978; Ruggie 1982; Rodrik 1998; [5]Bretschger and Hettich 2002; Paolo and Gancia 2008; Carmignani and Colombo 2008; Ram 2009) or the *efficiency theory* ([6]Garett and Mitchell 2001; Islam 2004; Molana et al. 2004; Liberati 2007; Benarroch and Pandey 2007; Kimakova 2009).[7]

The *compensation hypothesis* postulates that government spending increases to mitigate the external risks engendered by international trade; while the *efficiency hypothesis* posits that government spending would decrease, as globalization-induced capital mobility increases. "The basic tenet of the *efficiency hypothesis* is that governments may collect less tax revenue, and can hardly run budget deficits in response to increased capital openness, because mobile capital may easily disapprove of unpalatable tax policies, or lax budget policies by moving abroad, ultimately leading to a tighter expenditure policy" (Liberati 2007).

Practically, *compensation* can prevail against *efficiency* in policy choice, hence creating a positive globalization-spending relationship. Also, efficiency considerations may prevail over the incentives for compensation, causing a negative association between globalization and government spending. Alternatively, *compensation* and *efficiency* can offset each other, such that the empirical results would show no significant association between

[4] Initially proposed by Dani Rodrik (1998), and traceable back to David Cameron (1978).

[5] provide evidence that both capital openness and trade openness may positively affect the level of social welfare expenditures

[6] Use data from 18 OECD countries over the 1961-1993 period and find that trade openness negatively influences government spending, but not government consumption and social security transfers.

[7] "A prominent variant of the compensation hypothesis rests on the premise that increased trade exposure heightens domestic economic volatility, prompting demands for compensation via generous systems of transfers and services; hence it predicts a positive correlation between trade openness and government spending, with the direction of causality running from the former to the latter" (Rodrik 1998, p2).

globalization and government size (Garett 2000). Lending credence to the latter view, Kittel and Winner (2005) re-estimated the Garrett and Mitchell (2001) model, by employing more refined empirical techniques, but found no evidence supporting either the *efficiency theory* or the *compensation hypothesis*. Rather they submitted that public expenditures are mainly a function of "domestic economic and demographic variables, such as unemployment and the dependency ratio" (Meinhard and Potrafke 2012).

More statistical evidence suggests that "globalization poses less employment, wage, and growth risk in OECD countries, and that any correlation between openness and welfare, whether positive or negative, may be spurious" (Iversen and Cusack 2000). It suffices to note that "the net effect of the opposite forces of the *compensation hypothesis,* and of the *efficiency theory* is rather uncertain from a theoretical point of view, and it is basically a matter for empirical investigation" (Liberati 2007).

Unlike earlier studies, which assumed country homogeneity in their fixed and random effects panel regressions, coupled with using pooled OLS models, this paper invokes a model that considers country-specific characteristics in data analysis, to plausibly broaden the understanding of how globalization`s integral aspects, which are loaded with economic, social, and political significance, affect the size of government.

MODEL AND ECONOMETRIC SPECIFICATION

(A) ECONOMETRIC ISSUES: ADOPTING THE MEAN GROUP ESTIMATOR (MGE)

"It is now quite common to have panels in which both N (the number of groups) and T (the number of time periods) are quite large" (Pesaran and Smith 1995). Large enough, this study uses 25 countries, selected on the basis of data availability, for a period spanning 32 years (1973-2005). The latter panels, are distinguished from the small T panels in micro-econometrics, and conveniently referred to as "data fields" (Quah 1990). So when T is sufficiently big, by employing the MGE it makes sense to run individual regressions for each group, and then compute the parameter of interest`s average effect on the dependent variable.

However, the MGE ignores the possibility that "certain parameters may be the same across groups" (Pesaran 1998). Nonetheless, there are cogent reasons to expect unique disparity in parameters across groups. For instance, the integration of countries into the world trading system is at different stages, economic development in countries is not the same, the disinclination to relinquish national autonomy, in submission to global rules prevails, plus the revered cultural differences in countries, which may compromise the amenability to cultural homogenization[8], all imply that the different forms of economic, political, and social openness across countries, will affect their government sizes differently.

Now, "common in the existing literature are traditional pooled estimators, such as the fixed and random effects models, where the intercepts are allowed to differ across groups, while all other coefficients and error-variances are constrained to be the same" (Pesaran et al 1998). The latter coefficient homogeneity assumption, despite its wide adoption seems implausible (Mairesse and Griliches 1990). In addition, "the group mean estimator, obtained by averaging the coefficients for each group, is consistent for large N and T**,** and thus

[8] This means a reduction in cultural diversity.

provides a standard of comparison. Conversely, the pooled and aggregate estimators are not consistent in dynamic models, even for large N and T**,** and the biases can be very substantial. The problem arises because when the regressor are serially correlated, incorrectly ignoring coefficient heterogeneity induces serial correlation in the disturbance, which generates inconsistent estimates in models with lagged dependent variables, even as T→∞" (Pesaran and Smith 1995).

Against this background, to test the hypothesis that globalization exerts a positive impact on government size, parsimonious heterogeneous static models are considered below, in which the controlled parameters are the averages of specific group coefficients:

$Y_{it}= \beta_i x_{it}+ \lambda_i \omega_{it}+ \varepsilon_{it,}$ i= 1, 2…Nt = 1, 2… T, (1)

$Y_{it}= \beta_i \psi_{it}+ \lambda_i \omega_{it}+ \varepsilon_{it,}$ i= 1, 2…Nt = 1, 2… T, (2)

Where the coefficients λ_i and β_i are varying across the groups:

x_{it} = Indicators of globalization, including logarithms of Trade Openness, Financial Openness, Mean Tariff Rate, International Capital Flows, Political Globalization, and Social Globalization.

ψ_{it} = Logarithm of the 2010 KOF Overall Globalization Index, consisting of Economic, Political, and Social Globalization.

ω_{it} = Control variables comprising logarithms of Population Size and Real Income Per Capita.

i = Country Index, and

t = Time Index

ε = Error Term

The "average' long-run effect of **X** on **Y**, is then defined in terms of the "average" of the short-run coefficient, $\overline{\beta} / (1- \overline{\lambda})$, where

$$\overline{\beta} = N^{-1} \sum_{i=1}^{N} \beta_i \quad \text{and} \quad \overline{\lambda} = N^{-1} \sum_{i=1}^{N} \lambda_i$$

In both the base-line model (equation 1), and in equation (2), "logarithms of the dependent and explanatory variables are used, to better account for the outliers, smooth the distributions of the variables, and also to interpret the coefficients of the explanatory variables as elasticities" (Meinhard and Potrafke, 2011). "Furthermore, the log transformations effectively deal with the heteroscedasticity problems that would otherwise plague the analysis, given the long right hand tails in many of the variables" (Garrett 2001).

(B) DATA

Expense (% of GDP) is this paper`s main dependent variable and proxy for government size. According to the World Bank, it basically constitutes "cash payments for operating activities of the government in providing goods and services, including compensation of employees (such as wages and salaries), interest and subsidies, grants, social benefits, and other expenses such as rent and dividends." Another used dependent variable is the General Government Final Consumption Expenditure (% of GDP). As per the World Bank, although it incorporates "all government current expenditures for purchases of goods and services, including compensation of employees, and most of the expenditures on national defense and security, it excludes government military expenditures that are part of government capital formation."

Affirming robustness, the other predicted variable is the Tax Revenue (% of GDP). The World Bank explains that "tax revenue refers to compulsory transfers to the central government for public purposes. Certain compulsory transfers such as fines, penalties, and most social security contributions are excluded." Nevertheless, even though the *compensation hypothesis* suggests that citizens would demand for more expenditures and not taxes per se, but because [9]total government spending is highly correlated with taxes, even if Rodrik (1998)

[9] See Table 2 Panel B and C.

specifically implied redistributive expenses, still automatic stabilizers would act via the ability of taxes and transfers to stabilize disposable income, and thus when referencing the stabilization role of fiscal policy, the revenue to GDP ratio comes across as an appropriate metric to measure government size (Cottarelli and Fedelino 2010).

Besides, the impact economic integration exerts on tax revenues, manifests the *efficiency hypothesis*, for tax competition may serve to deter governments from increasing the tax burden on mobile tax bases (Gordon 1986; Bucovetsky and Wilson 1991; Razin and Sadka 1991; Tanzi 1995). By exerting a subversive influence on autonomous fiscal policies, in consequence capital openness literally creates mobile tax bases, which afford markets the option of "transcending politics," while effectively discouraging inefficient taxation, because more favorable and efficient tax systems would be preferred and sought out (Lee and McKenzie 1989; Kurzer 1993; Steinmo 1994; Tanzi 1995). Therefore, besides governments` shares of consumption and expenses in GDP, tax revenues are also included in this analysis, to strike a fair balance between the *compensation hypothesis* and the *efficiency theory*.

Now, globalization`s effect on government size is analyzed, by including other control variables, so as to avoid the impression that the attained result is an artifact, created by the omission of variables. The share of export and import to GDP is this study`s main predictor, because international trade is inherently observed as the first stage of globalization. Governments, due to international trade are goaded into giving subsidies to domestic producers, to help them compete against low-cost foreign imports, and to gain export markets. In addition, an increase in imports not only engenders dependence on goods from abroad, and thus exposing the country to consumption volatilities, but it may also be linked to an increase in domestic income per capita, which coupled with an increase in exports may be an extractive opportunity for government.

Financial Openness is also controlled and reckoned as Total Assets plus Total Liabilities to GDP, with its basic constituents obtained from the External Wealth of Nations Mark II database (Lane and Milesi-Ferretti 2007). Financial integration offers a broader gamut of portfolios, which facilitates higher productivity, allowing an open economy to diversify some of the country-specific risk, and thus exposing it to less volatility. "In line with the conventional wisdom that capital mobility may undermine the ability of governments to tax and to spend, financial openness may negatively affect government size" (Liberati 2007).

Also among the explanatory variables is the Customs and Other Import Duties (% of tax revenue). Besides its revenue function to governments, a reduction in mean tariff rates would present a veritable platform, upon which globalization may increase to affect government size and economic growth. International Capital Flows Index (Abiad et al 2008) is controlled too. A relaxation of capital flow regulations would increase globalization, affect government size, and also economic growth.

Population Size is another controlled predictor. Proxying country size, a reduction in population size suggests an increased integration into the world economy, and thus greater government size (Alesina and Wacziarg 1998**).** Controlled along with population size, is Real Income Per Capita. An increase in the latter not only means a broader tax base to governments, but citizens may also increasingly demand quality social goods and services from governments, triggering off an expansion of the public economy (Wagner 1883). Then again, Wildavsky (1974) counter-argues that "the degree of expansion in the scope of the public economy varies inversely, rather than directly with economic growth."

Finally, to capture all the significant dimensions of globalization, the 2010 KOF Overall Globalization Index is employed, while controlling for Population Size and Real GDP Per Capita. The Globalization Index comprises the social, economic, and political

aspects of globalization. Also reported are the regression results for the period between 1985 and 2005, since the usage of the term globalization in the mid 1980s, is presumed to have began (IMF 2000). **Table 1** displays a summary of all the employed study data, including their abbreviations and sources.

TABLE 1: DATA AND THEIR RELATED SOURCES

VARIABLE	ABBREVIATION	DESCRIPTION	SOURCE
Government Expense (% of GDP)	EXP	Main Dependent Variable	NYU Development Research Institute (Global Development Network Growth Database), WDI, and OECD
General government final consumption expenditure (% of GDP)	CON	Dependent Variable.	WDI
Tax revenue (% of GDP)	TAX	Dependent Variable	OECD, WDI
Globalization Index	GLO	Control Variable. 2010 KOF overall globalization index	Dreher, Axel; Noel Gaston and Pim Martens, 2008, *Measuring Globalization - Gauging its Consequence*, New York: Springer.
Political Globalization	PGLO	Control Variable	KOF INDEX
Social Globalization	SGLO	Control Variable	KOF INDEX
Population Size	POP	Control Variable	WDI
GDP Per Capita (Constant 2000 US$)	RYC	Control Variable	WDI
International Capital Flows	INCAP	Control Variable	Abiad, Abdul, Enrica Detragiache, and Thierry Tressel, "A New Database of Financial Reforms," IMF Working Paper WP/08/266, December 2008 (http://www.imf.org/external/pubs/cat/longres.cfm).
Trade (% of GDP)	TRA	Control Variable.	WDI
Financial Openness (%)	FOP	Control Variable	Lane & Milesi-Ferretti, "The External Wealth of Nations Mark II" , Journal of International Economics 73, 223-250, November 2007

EMPIRICAL RESULTS

Summary statistics for all the variables are given in **Table 2** below, which also includes the correlation matrix.

TABLE 2: DESCRIPTIVE STATISTICS

PANEL A: SUMMARY STATISTICS

	CON	TAX	EXP	GLO	PGLO	SGLO	TRA	FOP	TAR	POP	RYC	INCAP
OBS	825	825	825	825	825	825	825	825	825	825	825	825
MEAN	17.96	31.55	36.80	67.68	80.90	62.97	61.93	166.75	8.81	5.05	16683.17	2.23
STD	4.68	10.20	12.85	15.95	16.69	19.51	29.60	201.04	11.16	25.10	9585.08	0.98
MEDIAN	18.24	31.75	35.72	70.76	88.12	66.32	57.89	106.87	8.15	0.01	16817.60	3.00
MINI	7.52	8.53	10.38	22.67	7.98	20.32	9.10	7.52	-0.12	0.00	362.58	0.00
MAX	29.59	52.26	67.87	93.81	98.78	95.01	182.88	1985.12	143.70	170.00	40584.24	3.00

PANEL B: CORRELATION MATRIX

	CON	TAX	EXP	GLO	PGLO	SGLO	TRA	FOP	TAR	POP	RYC	INCAP
CONS	1.00											
TAX	0.82	1.00										
EXP	0.75	0.80	1.00									
GLO	0.54	0.74	0.58	1.00								
PGLO	0.47	0.69	0.49	0.79	1.00							
SGLO	0.53	0.70	0.51	0.95	0.66	1.00						
TRA	0.32	0.36	0.40	0.47	0.16	0.36	1.00					
FOP	0.10	0.23	0.23	0.54	0.26	0.49	0.64	1.00				
TAR	-0.31	-0.41	-0.38	-0.46	-0.35	-0.44	-0.16	-0.19	1.00			
POP	0.33	0.29	0.24	0.15	0.14	0.15	0.08	0.03	0.00	1.00		
RYC	0.32	0.56	0.36	0.67	0.59	0.71	0.08	0.40	-0.33	0.17	1.00	
INCAP	0.15	0.29	0.22	0.55	0.32	0.57	0.13	0.35	-0.34	-0.01	0.47	1.00

PANEL C: CORRELATION MATRIX WITH LOGARITHMIC VARIABLES

	CON	TAX	EXP	GLO	PGLO	SGLO	TRA	FOP	TAR	POP	RYC	INCAP
CONS	1.00											
TAX	0.79	1.00										
EXP	0.73	0.75	1.00									
GLO	0.51	0.74	0.55	1.00								
PGLO	0.36	0.62	0.38	0.79	1.00							
SGLO	0.54	0.74	0.52	0.95	0.63	1.00						
TRA	0.33	0.34	0.39	0.41	0.10	0.36	1.00					
FOP	0.30	0.45	0.45	0.74	0.43	0.69	0.63	1.00				
TAR	-0.18	-0.26	-0.26	-0.35	-0.23	-0.31	-0.13	-0.34	1.00			
POP	0.11	0.13	-0.01	0.03	0.18	0.03	-0.30	-0.12	0.12	1.00		
RYC	0.31	0.60	0.37	0.70	0.62	0.69	0.06	0.45	-0.16	0.14	1.00	
INCAP	0.16	0.32	0.16	0.54	0.35	0.56	0.05	0.50	-0.24	0.04	0.42	1.00

Panel C of Table 2 shows that reductions in tariff rates increase all the three measures of government size (Con, Tax, and Exp), while as expected they increase globalization and its related proxies. However, decreasing tariffs may hurt domestic producers, exposing them to increased foreign competition in their home market, which in consequence causes local prices to drop. As local producers` sales plummet, all else being equal, the decrease in production and prices may impel domestic producers to hire fewer workers, and thus engendering a reduction in consumer spending.

So although an increase in tariffs raises government revenues, a similar reduction in tariff rates may also goad governments into spending more on subsidies, to protect local infant industries, besides expending money on programs pertaining to unemployment insurance and welfare benefits. A positive correlation between international capital flows and financial openness, suggests that the former may increase due to trade in equity and debt markets, especially as the integration of world financial markets increases (Hnatkovska and Evans2005). An abundant supply of international capital may increase the size of Exp, Con, and Tax (Kaminsky et al 2005).

Table 3 shows country level means for the variables. Countries with above-average government size measures, such as Sweden, Denmark, Belgium, and the Netherlands, also not only have above-average measures of trade openness, financial openness, and the overall globalization index, but also their real income per capita rates (RYC) are rather high, above the RYC mean of about US$ 16,683 (See Table 2). The aforementioned welfare states prove that even prodigious spending can be judicious enough, to effect economic development; suffice it to say that government spending should be subjected to economic rationale, and not unavailing political processes. Here social globalization inspires spending efficiency, because political awareness may embolden the citizens to mobilize, and demand for greater government transparency and accountability.

TABLE 3: SAMPLED COUNTRIES AND THEIR MEAN VARIABLES (1973-2005)

COUNTRY	CON	TAX	EXP	RYC	IN CAP	TRA	FOP	TAR	PGLO	SGLO
Australia	18	27	30	23606	2	34	99	6	86	77
Austria	19	41	45	25043	2	73	165	4	93	81
Belgium	22	43	53	18206	2	127	375	7	94	73
Canada	21	34	22	19259	3	60	138	4	92	85
Denmark	26	46	51	24055	2	72	177	9	93	76
Finland	21	42	48	18485	2	60	147	4	90	64
France	22	41	48	18002	2	46	168	4	96	70
Germany	20	36	37	18719	3	51	136	3	68	75
Greece	16	27	34	10020	2	50	85	5	76	48
Ireland	19	32	41	15646	2	123	542	5	80	68
Italy	18	36	46	15666	2	44	101	9	93	55
Jamaica	16	16	33	3219	2	93	169	16	76	57
Japan	15	26	34	30344	3	22	76	7	78	59
Korea	12	18	17	7022	2	65	62	17	65	42
Mexico	10	16	20	4992	2	38	66	12	69	42
Netherlands	23	42	51	18863	3	110	310	9	93	79
New Zealand	18	33	41	11770	2	57	125	7	74	68
Norway	20	42	44	28358	2	74	138	6	90	72
Portugal	15	26	38	8402	2	58	148	0	76	54
Spain	16	29	30	11107	2	41	105	5	83	64
Sweden	27	48	54	22849	2	68	165	4	95	80
Switzerland	11	26	30	31836	3	73	483	12	83	85
Turkey	11	16	21	3347	2	33	45	36	76	37
United States	16	27	33	27753	3	20	86	8	91	68
Zimbabwe	18	21	33	509	1	56	58	14	44	29

Under the null hypothesis of cross-section independence, Pesaran`s (2004) CD test for cross-section dependence in macro-panel data is duly performed, and the results reported in **Table 4**. With the exception of LINCAP in **Table 4**, all investigated variables are shown to be statistically significant at the 1% level, hence rejecting the null hypothesis.

TABLE 4: CROSS-SECTIONAL DEPENDENCE & UNIT ROOT TESTS

	CON	TAX	EXP	GLO	PGLO	SGLO	POP	RYC	INCAP	TRA	FOP	TAR
	Panel A:	**Cross-section Dependence (CD) Test**										
Pesaran	23.31***	58.32***	36.78***	93.61***	53.26***	84.29***	93.26***	81.50***	0.00	53.60***	81.96***	14.11***
	Panel B:	**IPS**										
Levels	-0.43	-1.64	2.35	0.59	-1.64	3.71***	2.54	-0.86	0.00	0.05	0.90	13.36***
Differences	-6.12***	-8.96***	-7.70***	6.68***	-6.46***	10.74***	1.95**	5.43***	0.00	12.51***	-0.25***	11.44***
	Panel C:	**CIPS**										
Levels	0.10	2.19	1.12	-0.32	3.48	-1.14	2.07	-0.55	3.56	0.72	2.69	-2.38***
Differences	-2.94***	-4.44***	-6.64***	-5.98***	-3.97***	-7.41***	2.39	-2.69***	-2.61***	-4.60***	-3.88***	-5.52***

Notes: *** Parameter is significant at 1% level, and ** Parameter is significant at 5% level.

The presence of unit roots is investigated, because "they can induce spurious correlation among time series" (Granger and Newbold 1974). If two variables are trending over time, a regression of one on the other could have a high R^2, even if the two are totally unrelated. More so, the typical t-ratios scarcely follow a t-distribution, and thus hypothesis tests concerning the regression parameters cannot be validly undertaken (Stavros 2005). Therefore, the Im-Pesaran-Shin (IPS) test for unit roots in panel data-sets, under the null hypothesis that all panels have unit roots was performed. Apart from LSGLO and LTAR, which were statistically significant at the 1% level, all the other variables had unit roots in levels. First differences were taken to induce stationarity, with two lags and a trend, and all became stationary and thus integrated of order 1. In the case of LINCAP, no results were generated for the stationarity tests, perhaps due to lack of a huge variation among the selected countries.

In addition, a t-test for unit roots in heterogeneous panels with cross-section dependence, as proposed by Pesaran (2003) was performed. Null hypothesis assumes that all series are non-stationary. Unit roots were present in levels, failing to reject the null, but when first differences were taken to induce stationarity, all were statistically significant at the 1% level, and thus rejecting the null hypothesis. So, the study reports Pooled OLS in levels and first differences. Akin to previous studies in the literature, to control for omitted variables that differ among panels, but are constant over time, Fixed Effects Regression results are also reported, though special focus is on the MGE coefficient signs, for the variables related to openness. A positive sign of the LTRA MGE-coefficient would support the validity of the *compensation hypothesis*, and a positive sign on the LGLO MGE-coefficient, would extend its validity to include "overall globalization." On the other hand, negative signs would support the *efficiency theory*.

(A) TRADE OPENNESS AND GOVERNMENT SIZE (**LEXP**)

Table 5 shows the effects of globalization on government size, as measured by **LEXP**. Although not statistically significant, the MGE panel coefficient for LTRA was negative. Among countries, the LTRA MGE-coefficient was positive and statistically significant at the 5% level, only for Sweden and France. On the other hand, the LTRA MGE-coefficient was not only negative and statistically significant at the 1% level for Greece and Italy, but it was also negative and statistically significant at the 5% level for Switzerland and Mexico.

In **Table 6**, showing globalization`s effect on government size between 1985 and 2005, the MGE panel coefficient for LTRA was negative, though statistically insignificant. Among specific countries, for the case of Norway, the LTRA MGE-coefficient was negative and statistically significant at the 1% level, while for Italy and Denmark it was also negative but statistically significant at the 5% level. By and large, the "average effect" of LTRA on LEXP was negative but statistically insignificant, and thus tenuously supporting the *efficiency hypothesis*.

TABLE 5: EFFECTS OF GLOBALIZATION ON GOVERNMENT SIZE (**LEXP**), 1973- 2005

				MODEL (1)					**MODEL (2)**
COUNTRY	LTRA	LFOP	LTAR	LINCAP	LPOP	LRYC	LPGLO	LSGLO	LGLO
Australia	-0.0848	0.0672	-0.0146	0.0565**	1.5090	-1.1477**	-0.4579	2.8282***	0.3225
	(-0.67)	(1.04)	(-0.44)	(2.17)	(1.01)	(-1.97)	(-0.75)	(3.47)	(0.74)
Austria	-0.1254	-0.3327**	0.0126	-0.0035	-0.3865	0.0240	0.0251	0.1954	0.2727
	(-0.39)	(-2.46)	(1.31)	(-0.05)	(-0.19)	(0.02)	(0.05)	(1.40)	(0.51)
Belgium	0.0441	0.5144***	-0.0029	-0.0706	-1.1733	0.9260	2.1907***	-0.3596	-1.2728
	(0.19)	(3.94)	(-0.13)	(-0.41)	(-0.30)	(0.95)	(2.64)	(-1.36)	(-1.35)
Canada	0.1348	-0.1160	0.2171***	0.0148	7.0160**	-1.6492***	-3.2297***	0.4367	-2.4030***
	(0.60)	(-0.42)	(3.22)	(0.08)	(2.49)	(-2.76)	(-4.85)	(1.24)	(-4.52)
Denmark	0.2629	-0.2039	318.0266	-0.1782	-18.8432***	17.0335**	0.0958	1.9943**	1.9172
	(0.59)	(-0.96)	(0.54)	(-1.93)	(-2.85)	(2.48)	(0.07)	(2.19)	(1.95)
Finland	-0.0865	-0.0582	0.0034	0.0394	-1.5944	-0.4684**	-0.2158	0.0649	-1.9814***
	(-1.37)	(-1.44)	(0.76)	(1.12)	(-0.43)	(-2.31)	(-1.30)	(0.59)	(-2.71)
France	0.3562**	-0.4673***	0.0390***	-0.0139	-11.4833	-1.1738	2.0878***	0.4197**	2.6707***
	(1.98)	(-3.40)	(3.55)	(-0.24)	(-1.90)	(-1.91)	(3.59)	(2.01)	(6.43)
Germany	0.0863	-0.2553***	-19.9966	0.1274	1.3478	0.6161**	0.6866***	0.4294	1.5209***
	(0.86)	(-3.86)	(-1.40)	(0.42)	(1.34)	(2.10)	(5.69)	(0.71)	(3.68)
Greece	-0.7358***	0.2620	-0.0630	-0.0083	-0.0207	0.5858	0.0772	0.0598	1.1976***
	(-2.94)	(1.19)	(-1.15)	(-0.05)	(-0.01)	(1.14)	(0.24)	(0.16)	(4.12)
Ireland	0.2867	-0.2603***	0.0078	0.0128	2.9989***	-0.4869	0.8261***	-0.4544	1.2262***
	(1.79)	(-3.19)	(0.52)	(0.22)	(4.75)	(-1.47)	(2.61)	(-1.38)	(4.52)
Italy	-0.3265***	-0.2188**	-0.6935	0.1492***	3.1329	1.2597***	0.8967	0.1207	-0.7178
	(-2.93)	(-2.25)	(-0.74)	(2.77)	(1.25)	(2.84)	(1.83)	(0.76)	(-1.08)
Jamaica	0.0398	0.0089	0.0414	-0.0134	-6.8339***	-1.3609***	0.1101	0.2451	0.6384**
	(0.30)	(0.11)	(0.48)	(-0.19)	(-4.08)	(-4.15)	(0.84)	(1.75)	(2.20)
Japan	0.2006	0.1896	-0.0587	0.6010***	8.9939***	0.2788	0.1170	0.0901	-0.6002
	(1.66)	(1.70)	(-0.90)	(3.37)	(4.28)	(0.52)	(0.51)	(0.14)	(-0.83)
Korea	-0.0621	-0.0647	0.2247**	0.0150	0.9919	-1.5203***	0.3467***	-0.0813	0.1769
	(-0.42)	(-0.69)	(2.42)	(0.21)	(1.28)	(-3.96)	(2.93)	(-0.46)	(0.98)
Mexico	-0.3365**	0.4015***	0.0067	-0.2250***	0.2509	0.5479	0.1755	0.3346	-1.7963**
	(-2.50)	(3.90)	(0.09)	(-2.92)	(0.22)	(1.45)	(0.76)	(0.98)	(-2.45)
Netherlands	-0.0108	-0.0166	-0.8994**	0.0388	4.8797	-1.7036***	-0.1060	0.3335***	0.7780***
	(-0.10)	(-0.44)	(-2.34)	(1.57)	(1.58)	(-7.36)	(-0.53)	(3.19)	(2.31)
New Zealand	0.0392	0.0035	-0.0493***	-0.0286	-0.3298	-1.7874***	-0.7016***	-0.0297	-0.6912***
	(0.47)	(0.06)	(-3.00)	(-0.69)	(-0.66)	(-7.03)	(-2.62)	(-0.18)	(-3.46)
Norway	-0.2211	0.0234	0.0450	0.2383***	-2.2892	-0.2027	0.0939	-0.3766	-0.2277
	(-1.11)	(0.24)	(1.42)	(3.85)	(-0.36)	(-0.56)	(0.36)	(-1.11)	(-0.33)
Portugal	0.1473	0.1349**	-0.0261	0.0956	3.1869***	0.0252	-0.2041	0.4348	0.3668
	(1.23)	(2.55)	(-0.62)	(1.66)	(3.44)	(0.08)	(-0.78)	(1.52)	(1.61)
Spain	-0.1026	-0.1777	0.0432***	0.1031	-6.7106***	-3.9770***	0.7581**	-0.0666	1.3489**
	(-0.52)	(-1.81)	(2.99)	(1.15)	(-4.17)	(-7.23)	(2.46)	(-0.30)	(2.14)
Sweden	0.6065**	-0.6766***	0.0510	0.1434	-17.0272***	-4.0098***	0.1964	-1.4581	-1.9848
	(2.11)	(-3.02)	(1.49)	(1.09)	(-3.49)	(-4.99)	(0.20)	(-0.76)	(-1.47)
Switzerland	-0.9896**	-0.1735	-0.0629	-0.5716	-13.0197***	-0.4680	0.0751	-1.2396	0.5550
	(-2.04)	(-0.72)	(-0.63)	(-1.95)	(-2.68)	(-0.52)	(0.12)	(-1.01)	(0.59)
Turkey	0.0007	0.5325	-0.0325	0.0869	-2.5950	0.4828	0.5889	-0.2195	0.4556
	(0.00)	(1.29)	(-0.35)	(0.60)	(-0.64)	(0.39)	(1.20)	(-0.49)	(1.23)
United States	0.2793	-0.3322	-0.0027	0.0000	-20.815**	-3.3529***	-0.8070	0.1667	1.3414
	(0.75)	(-0.68)	(-0.02)	(0.00)	(-2.52)	(-2.93)	(-0.38)	(0.25)	(1.41)
Zimbabwe	-0.2948	0.1467**	-0.1153	-0.1057	-0.8005	-0.5052	0.0714	2.3494***	-0.0542
	(-1.88)	(2.25)	(-1.49)	(-1.20)	(-1.24)	(-1.65)	(0.93)	(2.82)	(-0.17)
Pooled OLS	0.1590***	0.0393	-0.0313***	-0.1367***	0.0108	0.0008	0.1162**	0.4223***	1.0981***
(Levels)	(4.33)	(1.36)	(-5.20)	(-3.73)	(1.94)	(0.03)	(2.16)	(6.66)	(14.39)
Pooled OLS (First Diff.)	-0.0358	0.0499	0.0045	-0.0032	-0.3545	-0.4577***	0.0906**	0.001	0.1899
	(-0.84)	(1.92)	(0.71)	(-0.20)	(-1.22)	(-4.54)	(2.04)	(0.91)	(0.061)
Fixed Effects	-0.0758	0.1050***	-0.0069	-0.0210	0.1654	-0.1370**	0.0001	0.3858***	0.7076***
	(-1.69)	(4.58)	(-1.33)	(-0.98)	(1.45)	(-2.56)	(0.00)	(6.67)	(8.19)
MGE	-0.0357	-0.0429	11.8684	0.0201	-2.7846	-0.0814	0.1479	0.2487	0.1224
	(-0.53)	(-0.74)	(0.93)	(0.51)	(-1.77)	(-0.11)	(0.75)	(1.32)	(0.47)

Notes: For the OLS and Fixed Effects regressions, the numbers in parentheses are t-statistics, while for the MGE country specific coefficients, the numbers in parentheses are z-statistics. In all cases *** and ** indicate statistical significance at levels 1% and 5% respectively. Time dummies are included for both OLS and Fixed Effects regressions, while a time trend is included in the MGE regression**. Model 2** represents Government Size against the Overall Globalization Index, while controlling for LPOP and LRYC.

TABLE 6: EFFECTS OF GLOBALIZATION ON GOVERNMENT SIZE (**LEXP**), 1985-2005

	MODEL (1)								MODEL (2)
COUNTRY	LTRA	LPOP	LTAR	LINCAP	LPOP	LRYC	LPGLO	LSGLO	LGLO
Australia	-0.1606	0.0214	-0.0207	0.0000	1.0470	-1.2426**	-0.5555	3.3270***	0.5673
	(-1.11)	(0.28)	(-0.62)	(0.00)	(0.68)	(-2.12)	(-0.91)	(3.55)	(1.39)
Austria	-0.4415	-0.7643***	0.0007	-0.1741	2.1773	1.6377	0.0469	-6.9604	-0.7886
	(-0.56)	(-3.48)	(0.05)	(-1.78)	(0.42)	(0.67)	(0.07)	(-1.35)	(-0.49)
Belgium	0.0096	-0.0064	0.0075	0.0992	2.4136	-1.0282	0.3378	-1.1751***	-0.2754
	(0.06)	(-0.09)	(0.60)	(1.29)	(0.80)	(-1.52)	(1.00)	(-2.89)	(-1.33)
Canada	0.1233	-0.4302	-0.0100	0.0000	7.3152**	-0.4877	-0.0461	-1.0081	-1.6912***
	(0.44)	(-1.05)	(-0.12)	(0.00)	(2.09)	(-0.65)	(-0.06)	(-0.31)	(-5.32)
Denmark	-0.2072**	-0.1492***	-19.8438	-0.0043	0.6657	-2.1591	-0.4596	1.5033***	0.8264***
	(-2.32)	(-3.12)	(-0.17)	(-0.15)	(0.25)	(-0.76)	(-1.37)	(3.83)	(3.10)
Finland	-0.1111	-0.0181	0.0060	0.0048	4.7086	-0.1973	-0.1861	0.0867	-0.3438**
	(-1.29)	(-0.24)	(0.99)	(0.07)	(0.40)	(-0.36)	(-0.78)	(0.64)	(-2.47)
France	-0.0508	0.0024	-0.0058	0.0754***	-0.7562	-1.0008***	0.5082	-0.4974	1.1385***
	(-0.70)	(0.05)	(-1.82)	(2.81)	(-0.37)	(-5.04)	(1.84)	(-1.04)	(4.23)
Germany	-0.0107	-0.1182	132.9145	0.0000	1.2028	1.1720***	0.7654***	0.2174	1.3336
	(-0.11)	(-1.85)	(0.94)	(0.00)	(0.74)	(3.89)	(8.66)	(0.51)	(3.35)
Greece	0.6231	0.2185	-0.0046	0.0196	2.2455	-0.2213	0.0996	0.1702	-0.4947
	(1.49)	(0.84)	(-0.11)	(0.13)	(0.31)	(-0.33)	(0.52)	(0.58)	(-1.23)
Ireland	0.0053	-0.0835	0.0198**	-0.0164	0.8789	-0.2586	1.0639***	-0.3604	0.9815***
	(0.04)	(-1.14)	(2.21)	(-0.23)	(1.58)	(-0.98)	(5.26)	(-0.42)	(3.10)
Italy	-0.3457**	-0.1063	-0.6469	0.1976	1.7675	0.2247	0.2894	0.2763	0.7177
	(-2.36)	(-0.65)	(-0.92)	(1.67)	(0.51)	(0.22)	(0.49)	(1.19)	(1.26)
Jamaica	0.3512	-0.0557	0.0438	-0.0991	-8.2170	-1.3637	0.0062	0.3363	0.7919**
	(1.13)	(-0.30)	(0.41)	(-0.85)	(-1.02)	(-1.80)	(0.03)	(1.33)	(2.40)
Japan	-0.0388	0.0895**	-0.0538***	0.0000	-1.3007	0.5162	-0.0028	0.2354	-0.1641
	(-0.52)	(2.12)	(-2.87)	(0.00)	(-0.23)	(1.90)	(-0.04)	(0.89)	(-0.80)
Korea	0.0895	0.0050	0.1590**	0.0340	-2.0846	-1.1540**	0.0859	0.1552	-0.0917
	(0.74)	(0.04)	(2.00)	(0.48)	(-0.67)	(-2.12)	(0.60)	(0.88)	(-0.36)
Mexico	-0.4332	0.4797***	-0.2018	-0.0538	-3.6937	0.6355	-0.0640	0.0584	-0.1548
	(-1.83)	(3.03)	(-1.73)	(-0.63)	(-0.69)	(0.89)	(-0.27)	(0.07)	(-0.30)
Netherlands	-0.0890	0.0014	-0.9737**	0.0000	4.4229	-1.5462***	0.0179	0.5709	-0.0264
	(-0.56)	(0.02)	(-2.33)	(0.00)	(1.16)	(-4.13)	(0.04)	(0.55)	(-0.04)
New Zealand	0.2946**	0.0159	-0.0057	0.0000	-0.4867	-0.7255	-0.3820	-1.6076***	-1.1761***
	(2.48)	(0.24)	(-0.32)	(0.00)	(-0.86)	(-1.83)	(-1.16)	(-3.51)	(-4.17)
Norway	-0.9015***	-0.0185	0.0014	-0.1235	-26.0129***	-0.3028	-0.3456	0.2875	0.1210
	(-5.22)	(-0.22)	(0.06)	(-1.58)	(-5.01)	(-0.78)	(-1.24)	(0.32)	(0.16)
Portugal	-0.0977	0.1250	-0.0038	0.0341	10.4422***	1.0740	0.2294	0.5099	1.4574***
	(-0.24)	(1.13)	(-0.09)	(0.36)	(2.59)	(1.93)	(0.44)	(1.68)	(4.42)
Spain	-0.1435	-0.0130	-0.0158	0.1076	-0.1938	-0.2463	0.5374**	1.0124	2.5093***
	(-0.76)	(-0.12)	(-0.61)	(1.60)	(-0.03)	(-0.17)	(1.97)	(0.35)	(3.81)
Sweden	-0.1168	-0.0223	0.0181**	-0.0851	-2.1538	-1.3846***	0.2423	-1.0004**	-1.5691***
	(-1.54)	(-0.38)	(2.19)	(-1.81)	(-0.96)	(-4.24)	(1.11)	(-1.99)	(-5.30)
Switzerland	-0.1108	0.0336	-0.0113	0.0000	2.9873	-0.8841***	0.0240	-0.1044	0.1663
	(-0.89)	(0.42)	(-0.70)	(0.00)	(1.17)	(-3.17)	(0.18)	(-0.23)	(1.27)
Turkey	0.3389	0.0413	0.0525	-0.0835	18.6808	-1.0483	-0.8919	-0.2088	-0.0282
	(1.20)	(0.07)	(0.44)	(-0.38)	(1.28)	(-0.60)	(-0.91)	(-0.38)	(-0.04)
United States	-0.0566	-0.0682	-0.0020	0.0000	-4.7373***	-1.4176***	0.0132	-0.7183	-0.6256***
	(-0.81)	(-1.39)	(-0.14)	(0.00)	(-3.50)	(-5.59)	(0.05)	(-0.75)	(-2.62)
Zimbabwe	-0.1056	0.0426	-0.1402	-0.1079	0.4895	-0.2489	0.0158	2.3074**	0.0956
	(-0.38)	(0.38)	(-0.91)	(-1.11)	(0.38)	(-0.52)	(0.08)	(2.40)	(0.24)
Pooled OLS	0.0218	0.1947***	-0.0157***	0.0355	0.0156**	-0.0537	0.7233***	0.1775**	1.2184***
(Levels)	(0.51)	(5.73)	(-2.58)	(0.68)	(2.40)	(-1.94)	(6.65)	(1.92)	(12.13)
Pooled OLS	0.0271	0.0372	0.0015	0.0047	-0.1309	-0.4125***	0.1323***	0.1541**	0.3164***
(First Diff.)	(0.54)	(1.32)	(0.27)	(0.27)	(-0.36)	(-3.62)	(2.91)	(2.23)	(3.06)
Fixed Effects	-0.1830***	0.0805***	-0.0118**	0.0128	0.5154***	-0.4245**	0.3958***	0.2840***	0.9020***
	(-3.21)	(2.94)	(-2.55)	(0.51)	(2.97)	(-5.62)	(6.29)	(3.83)	(9.38)
MGE	-0.0634	-0.0311	4.4513	-0.0070	0.4723	-0.4663**	0.0540	-0.1035	0.1311
	(-1.07)	(-0.72)	(0.82)	(-0.44)	(0.31)	(-2.48)	(0.65)	(-0.29)	(0.68)

Notes: For the OLS and Fixed Effects regressions, the numbers in parentheses are t-statistics, while for the MGE country specific coefficients, the numbers in parentheses are z-statistics. In all cases *** and ** indicate statistical significance at levels 1% and 5% respectively. Time dummies are included for both OLS and Fixed Effects regressions, while a time trend is included in the MGE regression**.**

Model 2 represents Government Size against the Overall Globalization Index, while controlling for LPOP and LRYC.

(B) TRADE OPENNESS AND GOVERNMENT SIZE (**LCON**)

In **Table 7,** which shows the impact of globalization on government size, as measured by LCON, the MGE panel coefficient for LTRA was negative and statistically significant at the 1% level. Precisely, Canada, Finland, Italy, Norway, Switzerland, and the US had negative and statistically significant LTRA MGE-coefficients at the 1% level. The latter finding for the US, affirms Islam`s (2004) study result. The Netherlands also had a negative LTRA MGE-coefficient, with statistical significance at the 5% level.

Capturing globalization`s impact on LCON between 1985 and 2005, **Table 8** by and large affirms **Table 7**. The MGE panel coefficient for LTRA was negative and statistically significant at the 5% level**.** Country wise, Finland, Mexico, Norway, Spain, and Sweden had negative and statistically significant MGE-coefficients, at the 1% level. The LTRA MGE-coefficient was also negative and statistically significant at the 5% level, for the case of Canada, Denmark, and the US.

However, New Zealand had a positive and statistically significant LTRA MGE-coefficient at the 5% level, while Greece and Japan had a positive and statistically significant related MGE-coefficient, at the 1% level. Generally, the "average effect" of LTRA on LCON was negative and statistically significant, hence lending credence to the *efficiency hypothesis.*

TABLE 7: EFFECTS OF GLOBALIZATION ON GOVERNMENT SIZE (**LCON**), 1973- 2005

	MODEL (1)								MODEL (2)
COUNTRY	LTRA	LPOP	LTAR	LINCAP	LPOP	LRYC	LPGLO	LSGLO	LGLO
Australia	-0.0145	0.1749***	-0.0394	0.0436**	-3.7385***	-1.6419***	-0.1299	-0.2609	0.8185
	(-0.16)	(3.65)	(-1.62)	(2.26)	(-3.40)	(-3.81)	(-0.29)	(-0.43)	(1.93)
Austria	-0.3020	0.0414	0.0026	0.0329	-2.9744***	-0.5545	0.5456**	0.0807	0.5458***
	(-1.75)	(0.57)	(0.51)	(0.89)	(-2.70)	(-0.95)	(2.14)	(1.07)	(2.77)
Belgium	-0.1293	0.2209***	0.0512***	-0.1819**	4.5196**	0.1656	0.3413	-0.0686	-0.8819
	(-1.10)	(3.44)	(4.71)	(-2.14)	(2.36)	(0.35)	(0.84)	(-0.53)	(-1.40)
Canada	-0.3462***	0.1096	0.1046***	0.1014	3.7254***	-0.5538**	0.2801	0.1322	-0.7992***
	(-3.85)	(0.99)	(3.87)	(1.33)	(3.29)	(-2.31)	(1.05)	(0.93)	(-2.72)
Denmark	-0.0694	0.0255	-152.6361	-0.0849***	-0.8965	-0.7294	0.0436	0.4475	0.2397
	(-0.49)	(0.38)	(-0.81)	(-2.89)	(-0.43)	(-0.33)	(0.10)	(1.55)	(0.75)
Finland	-0.4616***	0.0270	-0.0000	-0.0319	-2.4795	-1.11702***	-0.0397	0.1367	-1.3619***
	(-5.06)	(0.46)	(-0.00)	(-0.63)	(-0.46)	(-3.80)	(-0.16)	(0.86)	(-6.69)
France	0.1394	-0.2280***	0.0192***	-0.0215	-4.6740	-0.7860**	1.6647***	0.0743	0.9329***
	(1.36)	(-2.92)	(3.09)	(-0.66)	(-1.36)	(-2.26)	(5.05)	(0.63)	(3.61)
Germany	-0.0259	-0.07375**	-14.5418	-0.0730	-1.3154**	-0.4827***	-0.0288	0.6129	0.4067**
	(-0.49)	(-2.11)	(-1.93)	(-0.45)	(-2.47)	(-3.10)	(-0.45)	(1.92)	(2.55)
Greece	0.2657	0.3535	-0.0372	-0.0991	5.0533	-0.2865	-0.1082	0.0048	-0.4673**
	(1.27)	(1.92)	(-0.82)	(-0.69)	(1.79)	(-0.67)	(-0.41)	(0.02)	(-2.40)
Ireland	0.1292	-0.1441**	0.0258	0.0736	1.5201***	0.1645	1.1193***	-0.8964***	0.4145
	(0.90)	(-1.97)	(1.93)	(1.44)	(2.68)	(0.56)	(3.94)	(-3.03)	(1.29)
Italy	-0.3676***	0.1080	0.2045	0.0705	5.1253***	0.6760**	-0.1674	-0.1902	-0.5606.2
	(-4.25)	(1.43)	(0.28)	(1.69)	(2.64)	(1.96)	(-0.44)	(-1.54)	(-1.46)
Jamaica	-0.0505	-0.3052***	-0.1683**	-0.0126	-5.1753***	-1.4264***	-0.0483	0.4722***	0.9020
	(-0.39)	(-4.01)	(-2.03)	(-0.19)	(-3.21)	(-4.51)	(-0.38)	(3.51)	(1.87)
Japan	0.0393	-0.0565**	-0.0064	-0.0828**	2.0642***	-0.8102***	0.0161	0.0735	0.1592
	(1.43)	(-2.23)	(-0.43)	(-2.05)	(4.33)	(-6.66)	(0.31)	(0.51)	(1.17)
Korea	-0.1436	-0.2213**	0.0472	0.0703	2.2942***	-1.8579***	0.2551**	0.0206	0.2385
	(-0.94)	(-2.28)	(0.49)	(0.98)	(2.87)	(-4.70)	(2.09)	(0.11)	(1.34)
Mexico	-0.0839	0.0184	-0.0559	0.0703	-1.6444	-0.7934**	0.3984	0.0704	1.1568**
	(-0.67)	(0.19)	(0.19)	(0.98)	(-1.53)	(2.27)	(1.85)	(0.22)	(2.90)
Netherlands	-0.2453**	0.1333***	-0.4238	-0.0182	3.2923	-1.0456***	0.3697**	0.1974	0.0398
	(-2.53)	(3.72)	(-1.17)	(-0.78)	(1.13)	(-4.80)	(1.98)	(2.01)	(0.15)
New Zealand	0.1439	-0.0887	-0.0097	-0.1056	-0.6650	-1.1126***	-0.9010**	0.5301**	0.2859
	(1.07)	(-1.00)	(-0.36)	(-1.57)	(-0.81)	(-2.70)	(-2.10)	(2.01)	(0.80)
Norway	-0.5371***	-0.0181	0.0256	-0.0365	-3.1993	-0.0952	0.0173	-0.6709	-0.4875
	(-2.83)	(-0.19)	(0.85)	(-0.62)	(-0.53)	(-0.28)	(0.07)	(-2.08)	(-0.81)
Portugal	0.0197	-0.0827***	-0.0139	-0.0872***	-1.2064**	-0.2910	0.2010	0.1330	0.3789***
	(0.30)	(-2.86)	(-0.61)	(-2.77)	(-2.39)	(-1.68)	(1.48)	(0.85)	(2.64)
Spain	-0.1019	-0.1108**	0.0089	0.0375	0.4299	-1.3120***	0.5810***	0.1807	1.0801***
	(-0.96)	(-2.10)	(1.15)	(0.78)	(0.50)	(-4.44)	(3.51)	(1.51)	(3.47)
Sweden	0.0408	-0.2579**	0.0196	-0.1114	-6.1297***	-1.5761***	0.0797	0.4036	-1.9780***
	(0.30)	(-2.44)	(1.03)	(-1.79)	(-2.67)	(-4.16)	(0.17)	(0.44)	(-3.61)
Switzerland	-0.3363***	-0.1004***	0.0056	-0.0363	-1.0342	0.3380**	0.2336**	-0.0741	0.4355
	(-4.50)	(-2.71)	(0.36)	(-0.80)	(-1.38)	(2.43)	(2.43)	(-0.39)	(1.51)
Turkey	-0.0939	0.1368	0.0553	0.3457***	-6.3513**	0.2139	0.5451	-0.3715	0.6042
	(-0.76)	(0.42)	(0.75)	(3.02)	(-1.96)	(0.22)	(1.40)	(-1.03)	(1.10)
United States	-0.1936***	0.0697	-0.0662**	0.0000	-7.6664***	-0.7742***	-0.0458	-0.0821	-0.6848***
	(-2.80)	(0.77)	(-2.28)	(0.00)	(-4.96)	(-3.62)	(-0.11)	(-0.65)	(-3.06)
Zimbabwe	-0.0139	0.0612	-0.3192**	-0.3094**	-0.5073	-1.1906**	-0.0145	0.0284	-0.9057**
	(-0.05)	(0.55)	(-2.41)	(-2.05)	(-0.46)	(-2.28)	(-0.11)	(0.02)	(-2.39)
Pooled OLS	0.2032***	-0.1080***	-0.0164***	0.0072	0.0240***	-0.0343	0.0883**	0.5418***	0.8785***
(Levels)	(7.48)	(-5.03)	(-3.69)	(0.27)	(5.83)	(-1.95)	(2.22)	(11.56)	(15.46)
Pooled OLS	-0.1366***	0.0334	0.0022	-0.0096	-0.1222	-0.5908***	-0.0669	0.0008	0.1899
(First Diff.)	(-4.14)	(1.66)	(0.46)	(-0.78)	(-0.55)	(-7.60)	(-1.95)	(0.94)	(1.88)
Fixed Effects	-0.1726***	0.0358***	-0.0129***	0.0360***	0.0643	-0.1968***	0.1173***	0.4163***	0.6757***
	(-6.68)	(2.71)	(-4.30)	(2.93)	(0.98)	(-6.39)	(5.28)	(12.52)	(12.86)
MGE	-0.1095***	-0.0083	-6.7099	-0.018	-0.8653	-0.6117***	0.2083**	0.0394	0.0205
	(-2.74)	(-0.26)	(-1.10)	(-0.75)	(-1.18)	(-4.19)	(2.19)	(0.57)	(0.13)

Notes: For the OLS and Fixed Effects regressions, the numbers in parentheses are t-statistics, while for the MGE country specific coefficients, the numbers in parentheses are z-statistics. In all cases *** and ** indicate statistical significance at levels 1% and 5% respectively. Time dummies are included for both OLS and Fixed Effects regressions, while a time trend is included in the MGE regression**.** **Model 2** represents Government Size against the Overall Globalization Index, while controlling for LPOP and LRYC.

TABLE 8: EFFECTS OF GLOBALIZATION ON GOVERNMENT SIZE (**LCON**), 1985- 2005

	MODEL (1)								MODEL (2)
COUNTRY	LTRA	LPOP	LTAR	LINCAP	LPOP	LRYC	LPGLO	LSGLO	LGLO
Australia	-0.1383	0.1000**	-0.0493**	0.0000	-4.4929***	-1.7969***	-0.2893	0.5535	-0.1640
	(-1.63)	(2.19)	(-2.53)	(0.00)	(-4.96)	(-5.21)	(-0.81)	(1.01)	(-0.70)
Austria	-0.5863	0.0047	-0.0061	-0.0460	1.8672	0.9038	0.0431	-1.5928	1.1352***
	(-1.86)	(0.05)	(-1.14)	(-1.18)	(0.91)	(0.93)	(0.17)	(-0.78)	(3.41)
Belgium	-0.1928	0.0529	0.0603***	-0.1140	-5.8195**	-0.6122	0.6764**	-1.7312***	-0.6374
	(-1.53)	(0.94)	(5.85)	(-1.78)	(-2.33)	(-1.09)	(2.40)	(-5.13)	(-1.93)
Canada	-0.4730**	0.3401	0.1140	0.0000	6.2027**	0.1417	1.1037	-0.5163	-1.7801***
	(-2.24)	(1.11)	(1.82)	(0.00)	(2.37)	(0.25)	(1.82)	(-0.22)	(-5.20)
Denmark	-0.1393**	0.0259	-55.5738	-0.0519***	0.7508	-1.8949	-0.3740	0.5316**	-0.0668
	(-2.43)	(0.84)	(-0.76)	(-2.89)	(0.43)	(-1.04)	(-1.74)	(2.11)	(-0.54)
Finland	-0.4138***	-0.1079	-0.0074	-0.1473	-20.1209	-1.8803**	-0.0952	0.0816	-0.8291***
	(-3.30)	(-0.98)	(-0.84)	(-1.52)	(-1.17)	(-2.34)	(-0.27)	(0.41)	(-3.54)
France	0.0059	-0.0145	-0.0050	0.0477**	-1.8114	-1.1387***	0.5549**	-0.7947	0.7758***
	(0.09)	(-0.32)	(-1.76)	(1.96)	(-0.99)	(-6.34)	(2.22)	(-1.83)	(4.09)
Germany	-0.0820	0.0152	-130.5725	0.0000	-0.4516	-0.5909***	0.0061	0.4404	0.1831**
	(-1.44)	(0.42)	(-1.63)	(0.00)	(-0.49)	(-3.47)	(0.12)	(1.83)	(2.05)
Greece	0.8362***	0.1593	-0.0267	0.0724	0.6284	0.2133	-0.2453	0.4519**	-0.2651
	(2.85)	(0.88)	(-0.91)	(0.69)	(0.12)	(0.46)	(-1.81)	(2.19)	(-0.78)
Ireland	0.1003	-0.1155	0.0154	0.1127	0.9695	0.4275	1.1652***	-3.0258***	1.0181***
	(0.79)	(-1.72)	(1.87)	(1.73)	(1.90)	(1.76)	(6.29)	(-3.88)	(2.60)
Italy	-0.1271	-0.1437	0.4457	-0.1701	5.0398	0.7622	1.0764**	0.1889	-0.0808
	(-0.99)	(-1.01)	(0.73)	(-1.65)	(1.68)	(0.86)	(2.07)	(0.93)	(-0.25)
Jamaica	0.0738	-0.1307	-0.1125	-0.1315	1.9451	-0.6929	-0.1810	0.3334	0.0038
	(0.27)	(-0.81)	(-1.21)	(-1.31)	(0.28)	(-1.06)	(-1.09)	(1.53)	(0.01)
Japan	0.0785***	-0.0984***	-0.0068	0.0000	8.7173***	-1.0357***	0.0098	-0.2600***	-0.0142
	(2.97)	(-6.58)	(-1.02)	(0.00)	(4.33)	(-10.75)	(0.38)	(-2.77)	(-0.12)
Korea	-0.1141	-0.0327	-0.0624	0.0181	-0.5123	-0.7735**	-0.1599	0.1569	0.0145
	(-1.36)	(-0.43)	(-1.14)	(0.37)	(-0.24)	(-2.06)	(-1.62)	(1.29)	(0.06)
Mexico	-0.4513***	0.0951	0.0728	-0.1070	7.1905**	0.1284	0.2387	1.8931***	1.3375***
	(-2.84)	(0.89)	(0.93)	(-1.87)	(2.01)	(0.27)	(1.49)	(3.61)	(3.37)
Netherlands	-0.0854	0.1008***	-0.2694	0.0000	4.9400***	-1.6622***	-0.1908	0.4247	-0.4006
	(-1.08)	(3.63)	(-1.29)	(0.00)	(2.59)	(-8.87)	(-0.86)	(0.81)	(-0.86)
New Zealand	0.2166**	-0.0158	-0.0025	0.0000	0.4917	-0.4682	-0.8124***	-0.3934	-0.7383***
	(2.01)	(-0.26)	(-0.15)	(0.00)	(0.96)	(-1.30)	(-2.73)	(-0.95)	(-3.48)
Norway	-0.7840***	0.0216	-0.0200	-0.1297	-28.2838***	-0.6099	0.0755	0.4972	-0.0239
	(-3.51)	(0.20)	(-0.66)	(-1.28)	(-4.21)	(-1.21)	(0.21)	(0.43)	(-0.03)
Portugal	-0.2237	0.0097	-0.0146	-0.0659	-0.6904	0.1398	0.0415	0.2798	0.2235
	(-1.02)	(0.16)	(-0.65)	(-1.30)	(-0.32)	(0.47)	(0.15)	(1.74)	(0.84)
Spain	-0.2998***	0.0044	-0.0185	0.0482	5.0962	0.7007	0.4398***	2.1007	2.3086***
	(-3.13)	(0.08)	(-1.40)	(1.41)	(1.66)	(0.93)	(3.16)	(1.44)	(5.03)
Sweden	-0.2351***	0.0551	0.0125**	-0.1296***	-3.6115**	-0.8062***	0.0143	0.0811	-0.9921***
	(-4.56)	(1.37)	(2.23)	(-4.08)	(-2.37)	(-3.65)	(0.10)	(0.24)	(-3.42)
Switzerland	-0.0756	-0.1827	0.0010	0.0000	-1.6519	0.0349	0.3255**	-0.3223	-0.3174
	(-0.50)	(-1.92)	(0.05)	(0.00)	(-0.54)	(0.10)	(1.99)	(-0.60)	(-1.60)
Turkey	-0.0745	-0.4616	0.0700	0.0833	16.4478	-1.3054	-0.4474	-0.1488	-1.0643
	(-0.37)	(-1.08)	(0.82)	(0.53)	(1.56)	(-1.04)	(-0.63)	(-0.37)	(-1.72)
United States	-0.3381 3**	0.0255	-0.0216	0.0000	-10.565***	-0.6873	0.4882	-3.2435	-2.5601***
	(-2.38)	(0.26)	(-0.76)	(0.00)	(-3.84)	(-1.33)	(0.90)	(-1.67)	(-3.70)
Zimbabwe	0.1768	0.0748	-0.2281	-0.3290	-0.1948	-1.7264	-0.3804 5	0.7605	-0.5876
	(0.25)	(0.26)	(-0.58)	(-1.33)	(-0.06)	(-1.42)	(-0.76)	(0.31)	(-1.05)
Pooled OLS	0.1552***	-0.0430	-0.0151***	0.0453	0.0213***	-0.0203	0.1970**	0.4198***	0.8807***
(Levels)	(4.48)	(-1.56)	(-3.06)	(1.07)	(4.04)	(-0.91)	(2.24)	(5.62)	(11.11)
Pooled OLS	-0.1212**	0.0205	0.0027	-0.0172	-0.2110	-0.6176***	-0.0964**	0.1250	-0.1252
(First Diff.)	(-2.39)	(0.72)	(0.50)	(-0.98)	(-0.58)	(-5.39)	(-2.11)	(1.80)	(-1.25)
Fixed Effects	-0.1126***	-0.0335	-0.0058	0.0303	-0.0031	-0.2443***	-0.0064	0.3952***	0.4304***
	(-2.93)	(-1.81)	(-1.85)	(1.79)	(-0.03)	(-4.79)	(-0.15)	(7.90)	(6.23)
MGE	-0.1339**	-0.0087	-7.4482	-0.0416**	-0.7168	-0.5692***	0.1233	-0.1301	-0.1409
	(-2.14)	(-0.30)	(-1.33)	(-2.12)	(-0.40)	(-3.31)	(1.22)	(-0.53)	(-0.71)

Notes: For the OLS and Fixed Effects regressions, the numbers in parentheses are t-statistics, while for the MGE country specific coefficients, the numbers in parentheses are z-statistics. In all cases *** and ** indicate statistical significance at levels 1% and 5% respectively. Time dummies are included for both OLS and Fixed Effects regressions, while a time trend is included in the MGE regression**. Model 2** represents Government Size against the Overall Globalization Index, while controlling for LPOP and LRYC.

(C) TRADE OPENNESS AND GOVERNMENT SIZE (**LTAX**)

In **Table 9**, which displays globalization`s effect on government size, as measured by LTAX, the MGE panel coefficient for LTRA was negative, though statistically insignificant. Country wise, Germany had a negative and statistically significant LTRA MGE-coefficient, at the 1% level, while Korea, Mexico, and New Zealand also had a negative LTRA MGE-coefficient, with statistical significance at the 5% level. Only the US had a positive and statistically significant LTRA MGE-coefficient, at the 1% level. In **Table 10**, the MGE panel coefficient for LTRA was negative, though statistically insignificant. Both Greece and the US had positive and statistically significant LTRA MGE-coefficients, at the 5% level.

The US case affirms Howard (2007) and Kling (2010) `s submission that while most European states rely heavily on social insurance programs, the US addresses social needs differently. It uses more of tax expenditures, social regulation, loan guarantees, and less of social insurance. “For example, one of the tools used in America for income redistribution is the earned Income Tax Credit, which is a rebate given to low-income taxpayers. The EITC can and often does exceed the tax payments made by individuals, so that it operates like a negative income tax. Howard (2007) points out that the EITC grew faster than any other social program from 1980 to 2000” (Kling 2010). So the “average effect” of LTRA on LTAX though negative was not statistically significant, hence weakly supporting the *efficiency hypothesis.*

In a nutshell, employing LEXP and LTAX to represent government size, the “average effect” of LTRA on them though tenuous was negative. Conversely, when LCON was invoked as a government size proxy, the “average effect” of LTRA on it was negative and statistically significant at the 1% level.

TABLE 9: EFFECTS OF GLOBALIZATION ON GOVERNMENT SIZE (**LTAX**), 1973- 2005

	MODEL (1)								MODEL (2)
COUNTRY	LTRA	LPOP	LTAR	LINCAP	LPOP	LRYC	LPGLO	LSGLO	LGLO
Australia	0.0584	0.0105	0.0367	0.0247	-3.7063***	1.2357***	-0.1225	-0.0849	0.8301***
	(0.69)	(0.24)	(1.67)	(1.42)	(-3.73)	(3.17)	(-0.30)	(-0.16)	(2.98)
Austria	0.0029	-0.0182	-0.0067**	0.0326	-2.5917***	-0.5059	0.4586***	0.0485	0.4088***
	(0.03)	(0.44)	(-2.26)	(1.53)	(-4.09)	(-1.50)	(3.11)	(1.12)	(3.51)
Belgium	0.0211	-0.0640	0.0270***	-0.0605	-2.3558**	-0.7240***	-0.4454	0.0962	-0.1878
	(0.34)	(-1.91)	(4.76)	(-1.36)	(-2.35)	(-2.89)	(-2.09)	(1.42)	(-0.54)
Canada	0.0921	0.1147	-0.0310	0.1238	4.7928***	-0.2541	-1.0195***	-0.3881***	-0.4441
	(1.00)	(1.01)	(-1.12)	(1.59)	(4.14)	(-1.03)	(-3.73)	(-2.68)	(-1.79)
Denmark	0.0024	-0.0592	238.6099	-0.0438**	-3.2062**	3.9415**	-0.2321	-0.0136	-0.0472
	(0.02)	(-1.21)	(1.76)	(-2.06)	(-2.11)	(2.49)	(-0.72)	(-0.06)	(-0.25)
Finland	-0.0977	-0.1186	-0.0043	0.0295	-2.1254	-0.6902**	-0.3485	0.0823	-0.1786
	(-1.02)	(-1.93)	(-0.63)	(0.56)	(-0.38)	(-2.25)	(-1.38)	(0.49)	(-0.88)
France	0.1213	-0.1393**	0.0201***	-0.0104	-8.3543***	-0.4466	0.6764***	0.1203	0.9557***
	(1.54)	(-2.32)	(4.18)	(-0.41)	(-3.17)	(-1.66)	(2.66)	(3.47)	(5.00)
Germany	-0.1280***	0.0005	-12.7333***	-0.3711***	-0.3231	0.4190***	0.0131	0.8110***	0.3318***
	(-4.01)	(0.02)	(-2.81)	(-3.82)	(-1.01)	(4.48)	(0.34)	(4.22)	(3.35)
Greece	-0.1410	0.2542**	-0.0388	-0.1312	4.4127**	-0.4907	0.0365	0.0551	0.1165
	(-1.08)	(2.21)	(-1.36)	(-1.47)	(2.49)	(-1.83)	(0.22)	(0.28)	(0.87)
Ireland	-0.0329	-0.0022	-0.0280**	-0.0207	1.1753**	-1.1841***	-0.2616	0.0748	0.3085
	(-0.23)	(-0.03)	(-2.09)	(-0.40)	(2.07)	(-3.99)	(-0.92)	(0.25)	(1.24)
Italy	-0.0314	-0.0860	0.0073	0.1982***	-0.6422	0.8608**	0.4611	-0.0280	-0.4356
	(-0.35)	(-1.10)	(0.01)	(4.57)	(-0.32)	(2.41)	(1.17)	(-0.22)	(-0.91)
Jamaica	0.0101	-0.0104	0.0031	-0.0028	0.2857**	0.0096	-0.0169	0.0276***	0.0272
	(1.15)	(-1.84)	(0.50)	(-0.55)	(2.38)	(0.41)	(-1.81)	(2.75)	(1.14)
Japan	-0.0354	0.0943	-0.0375	0.2267***	1.2081	0.1162	-0.1656	-0.0483	-0.8935***
	(-0.67)	(1.94)	(-1.32)	(2.93)	(1.32)	(0.50)	(-1.66)	(-0.18)	(-3.07)
Korea	-0.3861**	-0.1509	0.2185	0.0995	2.0506**	-1.2059**	0.4463***	-0.0434	0.3773
	(-2.11)	(-1.30)	(1.91)	(1.16)	(2.15)	(-2.55)	(3.06)	(-0.20)	(1.66)
Mexico	-0.1129**	0.0013	0.0087	-0.0227	-0.2284	-0.1184	0.0085	-0.2695**	-0.3537**
	(-2.29)	(0.03)	(0.32)	(-0.80)	(-0.54)	(-0.86)	(0.10)	(-2.15)	(-2.24)
Netherlands	-0.2389	-0.1447**	0.4484	0.0745**	-1.8756	0.0539	-0.3432	0.2410	0.2900
	(-1.52)	(-2.50)	(0.77)	(1.98)	(-0.40)	(0.15)	(-1.14)	(1.57)	(0.73)
New Zealand	-0.3208**	-0.0207	0.0002	0.0157	-1.9065**	-0.4865	0.2561	0.0630	-0.2935
	(-2.31)	(-0.23)	(0.01)	(0.23)	(-2.26)	(-1.14)	(0.57)	(0.23)	(-0.94)
Norway	0.0374	0.1309***	-0.0123	0.0622**	-4.3615	0.3933***	0.2801**	-0.1707	-0.1365
	(0.45)	(3.18)	(-0.93)	(2.40)	(-1.63)	(2.60)	(2.55)	(-1.20)	(-0.43)
Portugal	0.1170	-0.1252***	0.0105	-0.0252	1.3184	0.0768	0.3874**	-0.2271	0.1264
	(1.30)	(-3.14)	(0.33)	(-0.58)	(1.89)	(0.32)	(1.98)	(-1.05)	(0.69)
Spain	-0.1498	-0.0704	0.0405***	0.0619	-3.3574***	-1.5818***	0.2435	-0.0053	0.8770
	(-1.47)	(-1.38)	(5.43)	(1.33)	(-4.04)	(-5.56)	(1.53)	(-0.05)	(1.88)
Sweden	-0.0395	-0.1798	-0.0319	-0.0006	-5.0828	-0.7180	-1.0210	0.0546	0.2139
	(-0.25)	(-1.47)	(-1.45)	(-0.01)	(-1.91)	(-1.64)	(-1.86)	(0.05)	(0.32)
Switzerland	0.2108	-0.0778	-0.0144	-0.2072**	-3.6137**	-0.8913***	-0.0079	0.3446	0.1844
	(1.31)	(-0.97)	(-0.43)	(-2.13)	(-2.24)	(-2.97)	(-0.04)	(0.85)	(0.68)
Turkey	-0.0515	0.4676	0.0164	0.1764	-7.3080**	0.4285	0.1686	-0.0145	0.2279
	(-0.41)	(1.40)	(0.22)	(1.52)	(-2.22)	(0.43)	(0.42)	(-0.04)	(0.70)
United States	0.3433***	0.0169	0.0558	0.0000	6.6590***	-0.2401	-0.9111**	0.5674***	1.1592***
	(4.28)	(0.16)	(1.65)	(0.00)	(3.71)	(-0.97)	(-1.96)	(3.86)	(4.10)
Zimbabwe	0.0168	0.0382	-0.0895**	-0.1161**	-0.7356**	0.1268	-0.0466	0.2012	-0.2840***
	(0.21)	(1.13)	(-2.24)	(-2.55)	(-2.22)	(0.80)	(-1.18)	(0.47)	(-2.93)
Pooled OLS	0.3040***	-0.1719***	-0.0206***	0.0089	0.0183***	0.1209***	0.2399***	0.4649***	0.9733***
(Levels)	(11.82)	(-8.41)	(-4.85)	(0.34)	(4.68)	(7.21)	(6.33)	(10.41)	(16.33)
Pooled OLS	-0.0538**	-0.0087	0.0017	0.0092	0.3660**	-0.1541***	0.0070	0.0005	0.0082
(First Diff.)	(-2.35)	(-0.62)	(0.50)	(1.08)	(2.35)	(-2.85)	(0.29)	(0.83)	(0.15)
Fixed Effects	-0.0589**	-0.0918***	-0.0081***	0.0848***	0.1575**	-0.2204***	0.1924***	0.2733***	0.7854***
	(-2.38)	(-7.28)	(-2.80)	(7.19)	(2.51)	(-7.47)	(9.05)	(8.58)	(16.13)
MGE	-0.0293	-0.0056	9.0590	0.0045	-1.1949	-0.0751	-0.0602	0.0601	0.1272
	(-0.94)	(-0.20)	(0.95)	(0.18)	(-1.69)	(-0.35)	(-0.67)	(1.21)	(1.31)

Notes: For the OLS and Fixed Effects regressions, the numbers in parentheses are t-statistics, while for the MGE country specific coefficients, the numbers in parentheses are z-statistics. In all cases *** and ** indicate statistical significance at levels 1% and 5% respectively. Time dummies are included for both OLS and Fixed Effects regressions, while a time trend is included in the MGE regression**.** **Model 2** represents Government Size against the Overall Globalization Index, while controlling for LPOP and LRYC.

TABLE 10: EFFECTS OF GLOBALIZATION ON GOVERNMENT SIZE (**LTAX**), 1985- 2005

	MODEL (1)								MODEL (2)
COUNTRY	LTRA	LPOP	LTAR	LINCAP	LPOP	LRYC	LPGLO	LSGLO	LGLO
Australia	0.0969	0.0338	0.0398	0.0000	-3.4712***	1.2840***	-0.0728	-0.3386	0.2930
	(0.99)	(0.64)	(1.76)	(0.00)	(-3.31)	(3.21)	(-0.18)	(-0.53)	(1.36)
Austria	-0.0368	0.0681	-0.0094**	0.0063	0.7319	0.2446	0.1282	1.1747	1.6056***
	(-0.13)	(0.88)	(-1.97)	(0.18)	(0.40)	(0.29)	(0.56)	(0.65)	(5.23)
Belgium	-0.0643	0.0348	0.0266**	-0.0910	-3.9230	-0.3074	-0.1423	0.1463	-0.0663
	(-0.47)	(0.56)	(2.36)	(-1.30)	(-1.44)	(-0.50)	(-0.46)	(0.40)	(-0.31)
Canada	-0.0435	-0.0192	-0.0943	0.0000	5.1246***	0.1679	0.0056	0.9559	0.8530***
	(-0.31)	(-0.09)	(-2.27)	(0.00)	(2.96)	(0.45)	(0.01)	(0.60)	(4.09)
Denmark	-0.0784	-0.1218**	89.7375	-0.0711**	-1.5708	2.0926	-0.7047	0.1341	-0.2194
	(-0.79)	(-2.31)	(0.71)	(-2.30)	(-0.53)	(0.66)	(-1.90)	(0.31)	(-1.00)
Finland	-0.2195	0.0015	0.0042	-0.0316	22.9573	0.4439	-0.0723	0.0475	-0.4107**
	(-1.88)	(0.01)	(0.51)	(-0.35)	(1.44)	(0.60)	(-0.22)	(0.26)	(-2.44)
France	0.0192	0.003942	0.0047	0.0105	-6.6108***	-0.7024***	-0.0328	-0.3663	-0.1184
	(0.32)	(0.09)	(1.77)	(0.47)	(-3.94)	(-4.26)	(-0.14)	(-0.92)	(-0.60)
Germany	-0.0992	0.0138	-54.8897	0.0000	0.7124	0.2275	0.0058	0.7578***	0.3508***
	(-1.51)	(0.33)	(-0.60)	(0.00)	(0.67)	(1.16)	(0.10)	(2.73)	(3.53)
Greece	0.7187**	0.0623	-0.0224	-0.0120	1.0976	-0.7422	0.0392	0.2408	-0.0957
	(2.21)	(0.31)	(-0.69)	(-0.10)	(0.19)	(-1.43)	(0.26)	(1.05)	(-0.29)
Ireland	-0.1666	-0.0114	-0.0020	-0.1065	0.2438	-1.1684**	0.0221	2.6553	0.2254
	(-0.55)	(-0.07)	(-0.10)	(-0.69)	(0.20)	(-2.03)	(0.05)	(1.44)	(0.58)
Italy	-0.2808***	0.1620	-0.3147	0.2876***	-0.14738	0.5601	-0.2556	-0.0033	0.7998**
	(-2.75)	(1.43)	(-0.64)	(3.48)	(-0.06)	(0.79)	(-0.61)	(-0.02)	(2.40)
Jamaica	0.0053	0.0055	-0.0023	-0.0064	0.2038	0.0888	-0.0296	0.0351	-0.0062
	(0.21)	(0.37)	(-0.26)	(-0.69)	(0.31)	(1.46)	(-1.92)	(1.73)	(-0.20)
Japan	-0.0630	0.1503***	-0.0427	0.0000	-3.9411	0.2742	-0.1249	0.3019	-0.5893**
	(-0.77)	(3.24)	(-2.07)	(0.00)	(-0.63)	(0.92)	(-1.56)	(1.04)	(-2.34)
Korea	-0.3806***	-0.0736	-0.0056	-0.0335	6.8059**	-0.5736	-0.1524	-0.1777	-0.3879
	(-3.53)	(-0.75)	(-0.08)	(-0.54)	(2.47)	(-1.19)	(-1.20)	(-1.14)	(-1.35)
Mexico	-0.0944	-0.0141	-0.0720	-0.0145	-1.0735	0.4535	0.0381	-0.2919	-0.0589
	(-0.85)	(-0.19)	(-1.31)	(-0.36)	(-0.43)	(1.35)	(0.34)	(-0.80)	(-0.28)
Netherlands	-0.2843	-0.1144	0.4776	0.0000	-1.7824	0.4535	0.0771	-0.1020	-0.8405
	(-1.17)	(-1.35)	(0.75)	(0.00)	(-0.31)	(0.79)	(0.11)	(-0.06)	(-0.92)
New Zealand	-0.1642	-0.0784	0.0463**	0.0000	-1.7466**	1.1169**	1.2873***	-2.1754***	-0.6832
	(-1.13)	(-0.96)	(2.09)	(0.00)	(-2.53)	(2.31)	(3.21)	(-3.89)	(-1.66)
Norway	-0.2186	0.0335	-0.0197	-0.08474	-0.1631	0.7253***	-0.1028	-0.8592	-0.2845
	(-1.84)	(0.58)	(-1.21)	(-1.57)	(-0.05)	(2.71)	(-0.54)	(-1.39)	(-0.83)
Portugal	-0.2513	0.0164	-0.0077	0.01901	-1.2948	0.4013	-0.0082	0.0024	0.1468
	(-1.46)	(0.36)	(-0.43)	(0.48)	(-0.77)	(1.73)	(-0.04)	(0.02)	(0.89)
Spain	-0.0568	-0.1126**	0.0097	0.0834***	2.9671	0.5882	0.2535**	1.8815	0.8059**
	(-0.71)	(-2.39)	(0.88)	(2.92)	(1.16)	(0.94)	(2.19)	(1.55)	(2.16)
Sweden	-0.0557	0.0140	-0.0235***	0.1257**	5.7669**	1.1551***	-0.3197	1.5594***	1.2442***
	(-0.67)	(0.22)	(-2.60)	(2.45)	(2.34)	(3.24)	(-1.34)	(2.83)	(2.80)
Switzerland	-0.1390	0.1356	0.0026	0.0000	1.9044	-0.2157	-0.2821	1.2892**	0.5321**
	(-0.78)	(1.20)	(0.11)	(0.00)	(0.53)	(-0.54)	(-1.45)	(2.03)	(2.44)
Turkey	-0.1316	0.2192	-0.0388	-0.0387	16.9495***	0.0867	-0.7815**	-0.1528	-0.5495
	(-1.38)	(1.10)	(-0.97)	(-0.53)	(3.43)	(0.15)	(-2.36)	(-0.82)	(-1.63)
United States	0.4282**	-0.0008	0.0260	0.0000	6.1851	0.4338	-0.7688	4.7695**	3.2354***
	(2.51)	(-0.01)	(0.76)	(0.00)	(1.88)	(0.70)	(-1.18)	(2.04)	(3.47)
Zimbabwe	0.1692	0.0383	-0.0285	-0.1278**	-0.6174	-0.3846	-0.3007***	0.5485	-0.3064**
	(1.02)	(0.57)	(-0.31)	(-2.20)	(-0.79)	(-1.35)	(-2.58)	(0.95)	(-2.01)
Pooled OLS	0.2210***	-0.0464	-0.0154***	0.0741	0.0167***	0.0769***	0.4541***	0.3473***	1.1089***
(Levels)	(6.81)	(-1.80)	(-3.32)	(1.88)	(3.40)	(3.67)	(5.52)	(4.97)	(14.21)
Pooled OLS	-0.0600**	-0.0102	0.0013	0.0064	0.4496**	-0.0867	-0.0240	0.1356***	0.0392
(First Diff.)	(-2.04)	(-0.62)	(0.40)	(0.63)	(2.13)	(-1.30)	(-0.90)	(3.35)	(0.66)
Fixed Effects	-0.0960***	-0.0523***	-0.0041	0.0845***	0.4800***	-0.1235***	0.1164***	0.2972***	0.7663***
	(-2.77)	(-3.14)	(-1.47)	(5.53)	(4.56)	(-2.69)	(3.04)	(6.60)	(12.88)
MGE	-0.0556	0.0178671	1.3921	-0.0034	1.8123	0.2682	-0.0918	0.4813	0.2190
	(-1.21)	(1.05)	(0.32)	(-0.21)	(1.41)	(1.88)	(-1.18)	(1.84)	(1.25)

Notes: For the OLS and Fixed Effects regressions, the numbers in parentheses are t-statistics, while for the MGE country specific coefficients, the numbers in parentheses are z-statistics. In all cases *** and ** indicate statistical significance at levels 1% and 5% respectively. Time dummies are included for both OLS and Fixed Effects regressions, while a time trend is included in the MGE regression**.** **Model 2** represents Government Size against the Overall Globalization Index, while controlling for LPOP and LRYC.

(D) FINANCIAL OPENNESS AND GOVERNMENT SIZE (**LEXP**)

In **Table 5**, the panel FOP MGE-coefficient was negative, albeit statistically insignificant. Country wise, France, Germany, Ireland, and Sweden had negative Financial Openness MGE-coefficients, and statistically significant at the 1% level. More so, Austria and Italy had negative FOP MGE-coefficients, but statistically significant at the 5% level. However, for the case of Belgium and Mexico, the FOP MGE-coefficients were positive and statistically significant at the 1% level, while the FOP MGE-coefficient for Zimbabwe was also positive and statistically significant at the 5% level. In **Table 6**, the panel FOP MGE-coefficient was negative, but statistically insignificant. Country wise, both Austria and Denmark exhibited negative and statistically significant FOP MGE-coefficients at the 1% level. Only Mexico had a positive and statistically significant FOP MGE-coefficient, at the 1% level, while Japan`s was positive, with statistical significance at the 5% level.

(E) FINANCIAL OPENNESS AND GOVERNMENT SIZE (**LCON**)

In **Table 7**, the FOP panel MGE-coefficient was negative, but statistically insignificant. Country-wise, France, Jamaica, Portugal, and Switzerland their FOP MGE-coefficients were negative and statistically significant at the 1% level. The latter coefficients were negative and statistically significant at the 5% level, for Germany, Japan, Korea, Spain, and Sweden. In contrast, Australia, Belgium, and the Netherlands had positive and statistically significant FOP MGE-coefficients, at the 1% level. In **Table 8**, the FOP panel MGE-coefficient was negative, but statistically insignificant. Country wise, Japan had a negative and statistically significant FOP MGE-coefficient, at the 1% level, while the Netherlands had a positive and statistically significant FOP MGE-coefficient, at the 1% level. Australia had a positive and statistically significant FOP MGE-coefficient, at the 5% level.

(F) FINANCIAL OPENNESS AND GOVERNMENT SIZE (**LTAX**)

In **Table 9**, the panel FOP MGE-coefficient was negative, but statistically insignificant. While Portugal had a negative and statistically significant FOP MGE-coefficient at the 1% level, both France and the Netherlands had a negative and statistically significant FOP MGE-coefficient at the 5% level. On the other hand, only Norway had a positive and statistically significant FOP MGE-coefficient, at the 1% level, while Greece also had a positive related coefficient, and statistically significant at the 5% level. In **Table 10**, only Spain and Denmark had negative and statistically significant FOP MGE-coefficients, at the 5% level. On the other hand, Japan had a positive and statistically significant FOP MGE-coefficient at the 1% level, while the panel FOP MGE-coefficient was positive, although insignificant.

(G) IMPORT DUTIES AND GOVERNMENT SIZE

In **Table 5** the panel TAR MGE-coefficient was positive, but statistically insignificant. New Zealand had a negative and statistically significant TAR MGE-coefficient at the 1% level, while the Netherlands also had a negative TAR MGE-coefficient, with statistical significance at the 5% level. However, Canada, France, and Spain, had positive and statistically significant TAR MGE-coefficients at the 1% level, while Korea also had a positive Mean Tariff MGE-coefficient, with statistical significance at the 5% level. In **Table 7**, the TAR MGE panel coefficient was negative, but not statistically significant. Zimbabwe, the US, and Jamaica had negative TAR MGE-coefficients, with statistical significance at the 5% level. On the other hand, Belgium, Canada, and France had positive TAR MGE-coefficients, with statistical significance at the 1% level. In **Table 9**, the TAR MGE panel coefficient was positive, but insignificant. Only Germany had a negative TAR MGE-coefficient, with statistical significance at the 1% level, while Austria, Ireland, and Zimbabwe also had negative TAR MGE-coefficients, with statistical significance at the 5% level. On the

other hand, Belgium, France, and Spain had positive TAR MGE-coefficients, with statistical significance at the 1% level.

(H) INTERNATIONAL CAPITAL FLOWS AND GOVERNMENT SIZE (**LCON**)

In **Table 8**, the INCAP panel MGE-coefficient was negative and statistically significant at the 5% level. Both Sweden and Denmark had negative and statistically significant INCAP MGE-coefficients at the 1% level, while France`s was positive and statistically significant at the 5% level. On the whole, "the average effect" of INCAP on CON was negative and statistically significant, hence affirming Liberati`s (2007) result that high capital mobility may constrain great taxation to finance high spending.

(I) OVERALL GLOBALIZATION AND GOVERNMENT SIZE (**LEXP, LCON**, and **LTAX**)

Apart from **Table 8**, which exhibits a negative and insignificant Overall Globalization panel MGE-coefficient, in all the other **Tables** (**5, 6, 7, 9,** and **10**) it is positive, though also statistically insignificant. Real Income Per Capita, in **Tables 7** and **8** had a negative and statistically significant panel MGE-coefficient at the 1% level.

CONCLUSION

(A) POLICY IMPLICATIONS

This study employed the Mean Group Estimator to show the average effect of overall globalization, including its components such as trade liberalization and financial openness, on the size of government. How globalization`s benefits would be maximized, and its concomitant costs reduced formed this study`s general policy objective. Overall, globalization was shown not to have exerted a significant effect on government size, and country specific regressions indicated ambiguity in its direction of association and significance. In some countries globalization exerted a significantly positive or negative effect on government size; while in other countries it exhibited no such significance. Hence country heterogeneity matters, in comprehensively understanding how globalization may affect government size, a finding in affirmation of Islam`s (2004) major results.

Trade openness showed a negative and significant relationship with government consumption, suggesting that it reduces government spending, plausibly by reducing tax revenue. Policy wise, trade-tax dependent countries must either precede or institute domestic tax system reforms, in conjunction with trade openness if revenue losses are to be adequately compensated and trade liberalization supported. Using broad-based domestic consumption taxes, plus modernizing tax and customs administration are necessary to bolster public revenues (Keen and Ligthart 2002). Indeed any tariff reductions must be linked to zero tolerance for corruption, and strongly uncompromising punitive measures against tax evasion. The general reduction in mean tariff rates, and various preferential arrangements imply that LDCs ought to address domestic constrains precluding their benefit from broader market access. Capacity to trade at relatively lower costs must target improving human and institutional capacity; plus building, upgrading, and maintaining trade-related infrastructure, such as entry points (such as borders, ports, and airports) and ICT network.

International capital flows were also significantly and negatively related to government size, affirming high capital mobility`s capacity to prevent excessive public spending. Financial openness and its benefit of risk diversification, underscore the import of sound macroeconomic policies and strong legal institutions, because they are incentives that pique foreign investors' interest to hold cross-border securities. The salutary result is that prior to committing their funds, investors would insist on an efficient management of the economy by government. Therefore, to maximize and sustain globalization`s benefits, as a pre-requisite governments ought to be efficient stewards of their economies.

However, the relaxation of regulations pertaining to international capital flows may be a recipe for adverse financial and economic situations, if not pursued guardedly. Reining back huge capital out-flows; especially during crisis periods may also be possible if the mechanisms for local resource mobilization are harnessed. For example, the issuing of bonds denominated in local currencies by government entities and private institutions, within developing and emerging economies should gain prominence as a strategic goal, if committing the notorious [10]"original sin" is to be avoided.

(B) RECOMMENDED FURTHER RESEARCH

With data paucity almost precluding studies on LDCs, data availability should enable future studies to incorporate them, so as to get a catholic picture of how globalization affects government size.

Most importantly, globalization`s potential to affect government size is appreciated, but its significance varies according to a country`s level of economic, political, and social openness. The latter forms of openness determine government`s incentive to spend, and also inform investors` decisions to move their capital in search of efficient tax systems. So by and large, salutary mobile tax bases may inure governments to efficient and effective spending.

[10]Committed when countries borrow in foreign currencies, and not in their local currencies, and this due to currency fluctuations, serves to increase the risk of defaulting on their debts.

APPENDICES

TABLES

TABLE 11: EARLY CROSS-COUNTRY STUDIES

Study	Government size measure	Number of countries and period	Result—summary
Cameron (1982)	Public consumption	19 countries, 1960–79	Negative
Landau (1983)	Public expenditure	48 countries, 1961–76	Negative
Marlow (1986)	Total expenditure, social expenditure (both levels and growth)	19 countries, 1960–80	Negative
Saunders (1986)	Same as Marlow (1986)	14–21 countries, 1960–73 and 1975–82	Previous results sensitive to the choice of time period and countries
Saunders (1988)	Same as Marlow (1986)	15–17 countries, 1960–1980	Previous results sensitive to the choice of time period and countries
Agell *et al.* (1997)	Tax and expenditure as a share of GDP	22–23 OECD countries, 1970–90	The negative correlation not robust to controlling for initial GDP and demography

SOURCE: Andreas Bergh and Magnus Henrekson (2011)

TABLE 12: RECENT PANEL DATA STUDIES

Study	Government size measure	Number of countries and period	Methodology	Conclusion
Fölster and Henrekson (2001)	Total tax revenue, total government expenditure	22–29 rich countries (7 rich non-OECD countries used as robustness test), 1970–95.	Fixed effects	Robust and significant negative effect from government expenditure. Less robust negative effect for total tax revenue.
Dar and AmirKhalkhali (2002)	Total government expenditure	19 OECD countries, 1971–99.	Random Effects	Significant negative effect for the entire period, as well as separately for the 1970s and the 1980s. For the 1990s separately, no significant effect is found. The authors also run country specific regressions, finding a Significant negative Effect for 16 of 19 countries.[11]
Agell *et al*. (2006)	Total tax revenue, total government expenditure	22–23 OECD countries, 1970–95.	Fixed effects	Results in Fölster and Henrekson (2001) are weaker when only including OECD countries and cannot be given a causal interpretation due to simultaneity.
Romero-Avila and Strauch (2008)	Total and disaggregated revenue, total and disaggregated expenditure	15 EU countries, 1960–2001, annual data.	Fixed effects	For total revenue and total expenditure: negative and significant effect. Negative and significant for direct taxes, insignificant for indirect taxes and social security contributions. Negative and significant effect from government consumption and transfers, significant positive effect from government investments.
Colombier (2009)	Total tax revenue, total government expenditure	21 OECD countries, 1970–2001.	Fixed effects	Finds —a stable positive, albeit small, growth effect of government size‖ (p. 910); result rebutted by Bergh and Öhrn (2011).
Afonso and Furceri (2010)	Total public revenue and expenditure	28 OECD and EU countries, 1970–2004.	Fixed effects	Both the share and volatility of government revenue and spending is detrimental for growth.
Bergh and Karlsson (2010)	Total public revenue and expenditure	24–27 OECD countries 1970–1995, and 1970–2005.	Fixed effects	Negative effect of taxes and expenditure robust in a BACE-analysis

SOURCE: Andreas Bergh and Magnus Henrekson (20110.

[11] For 3 of 19 countries, the authors report a non-significant relationship: negative but insignificant for Norway and Sweden, positive but insignificant for the United States.

TABLE 13: SUMMARY OF LITERATURE REVIEW (GLOBALIZATION AND GOVERNMENT SIZE

AUTHOR	PERIOD	METHODOLOGY	ARGUMENTS	RESULTS
David Cameron (1978)	1960-1975	Performed cross-country regressions, comprising 18 OECD capitalist economies, using first-order differences, rather than percentage changes. Dependent variable is Government`s Revenue as a share of GDP; and control variables include Real GDP, Government`s Revenues from Indirect Taxes & Social Security Contributions, Government`s Electoral Base composed of Social Government`s Revenues Received By Central Government, Exports & Imports of Goods & Services as a Percentage of GDP.	Governments can dampen the effects of the open economy on production, employment, and consumption by increasing the scope of the public economy (Lindbeck, 1975).	Nations with open economies were far more likely to experience an increase in the scope of public funding, than were nations with relatively closed economies (registered a strong coefficient of 0.79).
Dani Rodrik (1998)	Data are period averages for 1960-64,1965-69, 1970-74,1975-79,1980-84,1985-89,& 1990-92 (except GDP per capita, which pertains to the beginning of each period).	Ran Panel regressions (with Stata) using both fixed and random effects, as well as first differences. Main Dependent Variable is Real Government Consumption to GDP; besides Social Security & Welfare Spending for robustness; with Trade Openness as the Main predictor. 115 countries initially investigated; 68 countries for the above robustness test; and 147 countries sampled to test government consumption`s stabilization of income volatility. Data are period averages for 1960-64,1965-69, 1970-74,1975-79,1980-84,1985-89,& 1990-92 (except GDP per capita, which pertains to the beginning of each period).	Increases in external risk engender greater volatility in domestic income and consumption. Larger share in GDP of government purchases of goods & services reduces income volatility Risk-mitigating role of government spending prominently in social security & welfare, particularly in advanced countries with quality administrative capability to manage income transfers. Causality runs from exposure to external risk to government spending.	There exists a positive correlation between an economy`s exposure to international trade and its government`s size. External risk is positively and significantly associated with income volatility for all three measures of income (Real GDP adjusted for changes in terms of trade, Real GDP, and [12]Real GDP net of government consumption) A small (permanent) increase in government consumption (as a share of GDP) resulted in more stable incomes in 119 out of 147 countries. External risk not only determines the size of government consumption, but also its estimated coefficient in the high-income samples (OECD) is considerably larger in the Social Security And Welfare regression, than in the Government Consumption one.
Alberto, Alesina & Romain Wacziarg (1998)	1980-1984 and 1985-1989	OLS regressions run, with the main dependent variable as the share of Government Consumption in GDP, excluding Interest Payments, Transfers, and Public Investment. Others include Government Current Expenditure; Public Investment;	There is a negative relationship between country size and government size, including trade openness.	Univariate regressions of various measures of government size, on the log of population show that country size is negatively related to the share of government consumption, the share of total government current

[12] Private GDP was more responsive to external risk than aggregate GDP, judging by estimated coefficients and their significance levels.

		Government Spending on Education; Government Spending on Defense; and Government Consumption net of defense/Education. Control variables include Trade Openness, Population, Total GDP, Per Capita Income, the Dependency Ratio, Urbanization Rate, Population Density (Population/Area), Democracy Index, Terms of Trade Shocks, Ethno-linguistic Fractionalization, Number of Revolutions per Year, War between 1960 and 1985 Dummy, Latin America Dummy, Sub-Saharan Africa Dummy, South East Asia Dummy, and the OECD Dummy.		expenditures (including transfers and interest payments), the share of consumption spending excluding education and defense, and the share of education related expenditures. A very strong correlation between country size and trade openness is displayed. Political instability, wars and ethno-linguistic fractionalization are shown to be strong determinants of defense spending. Similarly, urbanization rates seem to strongly determine government consumption and investment. Using the broadest measure of government expenditure, comprising transfers and interest payments, the effect of the log of population, was still negative.
Muhammad Q Islam (2004)	1929-1997	Time series data from 6 OECD countries (USA, Australia, Canada, Norway, England, and Sweden). Main dependent variable was Government Expenditure to GDP Ratio. Controls include Real GDP Per Capita, Trade Openness, Terms of Trade Volatility, and Terms of Trade Risk. GARCH was used to measure Volatility, while the level coefficients were estimated using ARDL and FM-OLS techniques. Co-integration among the variables is first checked, then the existence of a long-run relationship is tested, using the bounds test proposed by Pesaran et al (PSS, 2001), which is applicable as long as the data are I(0) or I(1), thus dispensing with the need to pretest data for the presence of unit roots.	Tested whether government size increases, in a bid to respond to the external risk created by greater openness, and also affirm the existence of a long-run relationship between openness and government size.	ARDL and FM-OLS results for the USA are consistent across the estimation technique and lag structure, all showing that both GDP and openness are significant determinants of government size. The relationship between Per Capita GDP and Government Size is significantly positive, while the relationship between Government Size and Openness is negative. Volatility and risk are not statistically significant determinants of Government Size. Data from the USA rejects the hypothesis that openness results in larger Government Size. Further, the risk variable is not significant, indicating that the hypothesized risk mitigating mechanism, through which trade openness affects government size, does not exist. GDP has a significant positive relationship with all of the remaining countries in the sample. Only for Australia, Government Size was positively and

				significantly related to external risk, confirming the risk-mitigating explanation for the observed correlation between Government Size and Trade Openness. By and large, Time series analysis does not confirm that Government size responds to Trade Openness. Besides, the impact of Trade Volatility on Government Size is idiosyncratic, and country specific heterogeneity may be important in determining the nature of the relationship between Government Size, Openness, and Volatility.
Michael Benarroch and Manish Pandey (2007)	1970-2000	Sampling 96 countries, panel regressions based on the fixed-effects model, and Granger causality tests were performed. Government Consumption is the dependent variable. Controls include one period lagged Trade Openness, GDP Per Capita, Urbanization, Population, and the Dependency Ratio; including also lagged Volatility, plus the lagged Volatility and lagged Openness term.	Does trade openness cause higher government consumption?	After controlling for the effects of lagged first differences of government consumption and the first difference of openness, there is no statistically significant relationship between lagged openness and government size.
			Does higher government consumption cause higher trade openness?	The coefficient for lagged first difference of government size is negative and significant suggesting that higher government size causes lower openness.
			Does higher openness cause greater volatility, or vice versa?	No causal relationship between trade openness and terms of trade volatility exists.
			Does volatility cause bigger governments, or vice versa?	A reverse causality going from government size to volatility is found, suggesting that an increase in government size causes a decrease in terms of trade volatility.
Paolo Epifani and Gino Garcia (2008)	Period Averages for the years 1995-2000. 5-year averages from 1950-54 to1990-94. 6-year averages from 1995 to 2000.	143 country-cross-sectional OLS study, with the main dependent variable as general government consumption expenditure. Predictors include Trade Openness, Per Capita Income, Population, Polity, Black Market Premium, Current	Openness increases government size through terms of trade externality, whereby trade lowers the domestic cost of taxation; and through the demand for insurance, whereby trade raises risk and public transfers.	There is a positive association between trade openness and government size. The latter correlation though is contingent upon a low elasticity of substitution between domestic and foreign goods. Income is negatively correlated with government consumption.

		Account Restriction, Exchange Rate Restriction, Capital Account Restriction, Export Concentration and Regional Dummies.		
Fabrizio Carmignani & Emilio Colombo (2008)	5-year averages, over 1970-2000	A 79 country-panel study, with dependent variable as total government expenditure. The measure of economic volatility was the standard deviation of aggregate output growth over a five-year period. Controls include trade openness, the international capital flows index, an index based on the de facto classification of exchange rate regimes, population, urban population, current account balance, and the de facto central bank independence, proxied by the turnover rate of central bank governor. Included is the ratio of domestic credit from the banking sector to GDP, to account for the depth of domestic financial markets. The Generalized Method of Moments (GMM) system estimator is employed, to obtain robust estimates of model parameters under very general assumptions concerning the structure of residuals. Endogeneity is dealt with through Instrumental Variables.	Output volatility and expenditure are jointly determined, and that both variables respond to structural factors such as institutions, and the degree of trade and financial openness of the economy.	Output volatility increases government expenditure, but higher expenditure, being more volatile, causes larger output volatility. Trade openness (the first pillar of globalization) directly increases output volatility, and hence indirectly causes higher expenditure. Financial openness (the second pillar of globalization) appears instead to have a disciplining effect on government expenditure, thus indirectly contributing to stabilization. Its direct effect on output volatility is, on the contrary, positive, even though this result is not robust to all specifications. With respect to political institutions, similarly to Persson and Tabellini (2004), expenditure tends to be higher in parliamentary systems and with proportional electoral rules. The institutional effect shows that greater de facto central bank independence lowers output volatility, contrasting with the neutrality result obtained by Alesina and Summers (1993), but is consistent this paper`s other finding that government expenditure raises growth volatility.
Alena Kimakova (2009)	1976-2003	Government Consumption is dependent variable. Explanatory variables include Gross Capital Flows, International Trade, Real	Does government size increase with financial integration?	The Arelano-Bond estimator confirms the statistical significance and robust relationship,

		GDP Per Capita, Dependency Ratio, the Political System, Population, and Urban Population. The Arrelano-Bond linear, dynamic panel data estimation technique is employed for the robustness of the panel regression for 87 developing and developed countries. Both random and fixed effects models were employed and the regressions included a time trend and/or a dummy variable for the 1990s to account for a potential structural change during this period.		between government size and financial openness. Financial openness represented by gross private capital flows as percentage of GDP is a statistically significant explanatory variable at the 1% level under all specifications. Economies with greater exposure to cross border capital flows tend to have larger government size. Higher degrees of age dependency and urbanization are associated with greater government size. Real GDP per capita has a negative sign and is significant only in the random effects panel regression. The expected sign of the coefficient on population size as a proxy for country size is negative due to the fixed costs and economies of scale associated with public goods.
Rati Ram (2009)	1960-2000	154 country-pooled OLS regressions and the two-way fixed-effects format by including country and time dummies were employed. Main dependent variable is Share of Government Consumption in GDP. Controls include Population, Trade Openness, and GDP Per Capita.	There is a positive co-variation between a country's trade openness and the size of its government, because larger government size is a response to the increased income risk that greater openness usually entails (Rodrik, 1998). There is a negative co-variation between country size and trade openness, and also with the share of public consumption in GDP, which suggests that the latter negative combinations, may explain the positive relation between trade openness and government size (Alesina and Wacziarg (1998).	Using OLS estimates, the association between government size and country size, and that between openness and country size is negative and statistically significant. This is true not merely in pooled annual data, but also for (pooled) 5-year and 10-year averages, and consistency across the three aggregation levels is notable. The panel-data fixed-effects models, which are preferred to OLS (and random-effects) formats, indicate lack of support for the Alesina–Wacziarg view that the negative association of country size with government size and openness is likely to generate the Rodrik-type positive association between government size and openness. Also, every coefficient of LPOP is positive and statistically significant, to the extent that the pattern is consistent with the fixed-effects estimates

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