

# Domestic Absorption, Openness and Growth

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## Abstract

This paper presents an empirical analysis of the relationship between domestic absorption, openness and growth performance. While the relationship between growth and openness has been the focus of almost the entirety of the related studies, the role of domestic absorption has been ignored. The novel contribution of this study is to provide evidence that domestic absorption is a significant factor in explaining cross-sectional growth differences, while openness is positively associated with growth volatility also.

**Keywords:** *Growth, Domestic Absorption, Openness*

**JEL Codes:** *F43, F63, O47*

## Yurt İçi Talep, Dışa Açıklık ve Büyüme

### Öz

Bu makale yurt içi talep, dışa açıklık ve büyüme performansı arasındaki ilişkinin ampirik bir analizini sunmaktadır. Büyüme ve dışa açıklık arasındaki ilişki ilgili çalışmaların neredeyse tamamının odağında yer alırken, yurt içi emilimin rolü göz ardı edilmiştir. Çalışmanın literatüre katkısı, yurt içi emilimin ülkeler arasındaki büyüme farklılıklarını açıklamada önemli bir faktör olduğuna ve dışa açıklığın da büyüme oynaklığıyla pozitif yönde ilişkili olduğuna dair kanıt sağlamasıdır.

**Anahtar Kelimeler:** *Büyüme, Yurtiçi Emilim, Açıklık*

**JEL Kodları:** *F43, F63, O47*

## 1. Introduction

The empirical and theoretical growth literature seems to be expanding without bounds, as it should be in the face of wide-ranging effects of continuously evolving technology. Nonetheless, development performance around the world does not seem to bode with such progress as many countries have continued to exhibit largely volatile growth rates and increasing inequalities. Development, however, entails persistent and equitable growth that ensures social trust so as investment and technological advancement to ensue.

Besides the deepest determinants of growth potentials such as geography, which entails characteristics such as access to water or land-lockedness; culture that is characterized generally by ethnicity, language, religion and legal origin and; history, specifically the colonial past and wars and catastrophic events, the new development literature emphasizes the role of institutions in explaining the differential developmental performances of countries.<sup>1</sup> Institutions, if effective, set the rules of the game so as to reduce transaction costs and help externalize externalities. Hence, empirical growth studies need to control for a measure of institutions.

Economic development results to the extent that institutions are efficient and the country has the right combination of material, social and political factors. In the current study, it is considered that domestic absorption (C + I + G), as share of income, is an important factor of resilience to crises, though it has been missing in most studies that investigate the determinants of growth while openness has been emphasized in almost all the related studies. Underlining the fact that the export-led growth strategy has failed in various developing countries, several case studies investigated the prevalence of domestic-led growth, reporting mixed results.<sup>2</sup>

The importance of domestic absorption for persistence and stability of growth has particularly become evident in the face of the 2020 pandemic, as well as the geopolitical polarization and regionalisation trends that have been unfolding thereafter. As a measure of

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1 See, for example, Rodrik (2003), Bhattacharyya (2004), Brodzicki et al. (2016).

2 See, for example, Yew Wah (2004), Tsen (2010) and Mishra (2020) for the cases of Malaysia, China and BRICS.

self-sustainable growth, domestic absorption (or domestic demand for domestic goods) provides resilience against global crises. It is this hypothesis that this paper is set to explore empirically, using a large cross sectional data set that allows for the effects of structural or institutional factors to be observed also.

## 2. Data and Estimation

The main hypothesis to be tested in this paper is the respective roles of domestic absorption (DA in short) and openness in growth and growth stability. The growth data is taken as an average of the past three decades for each country, where the data is available. Growth volatility, on the other hand, is measured by the standard deviation of the yearly growth rates of each county, over the time period for which data is available. Hence, the data set consists of a cross-section of 122 developed and developing countries.

The regression models to be estimated are as follows:

$$GRpc_i = c_1 + \alpha_1 \ln DA_i + \alpha_2 \ln T_i + \alpha_3 Z_i + \eta_i$$

and;

$$SDgr_i = c_2 + \beta_1 \ln DA_i + \beta_2 \ln T_i + \beta_3 Z_i + \epsilon_i.$$

where the subscript *i* stands for country, GRpc stands for average per capita growth rate, SDgr is the standard deviation of the per capita growth across the years, lnDA is the log of DA and lnT is the log of trade openness, which is measured by the ratio of exports plus imports to GDP. Z stands for the rest of the control variables that are commonly used in the growth literature, which are: log of per capita GDP in purchasing power parity terms (lnGDPpcPPP); secondary school spending by the government as ratio to GDP (E2GDP)<sup>3</sup>; the average of the governance indicators (gov), as a measure of de facto institutional quality; log of net barter terms of trade (lnTOT); population density (popD) and investment to GDP ratio (IgdP). The source of all the data is the World Bank Economic Indicators.<sup>4</sup> Since the effects of both *lnDA* and *lnT* on growth and growth volatility may be affected by the quality of institutions (gov), the interactions between these variables are also controlled for, denoted by (lnDAgov) (= lnDA \* gov) and (lnTgov) (= lnT \* gov) respectively.

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3 There are certainly alternative education indicators such as expenditure on primary school, school attendance or teacher to student ratio that are considered to be related with growth (see, for example, Benos and Zotou (2014) for a meta-study of the impact of education.). The results are in nature robust to different indicators.

4 Cross-correlations and the extreme values of the variables used in the estimation are reported in Table 2 at the end of this study.

Table 1 reports the OLS estimations of the above regression models where the error terms are corrected for heteroskedasticity. The two columns for each of the dependent variables stand for the estimation without and with the inclusion of the interactive terms. The most interesting results of the regression analysis is that while both  $\ln DA$  and  $\ln T$  are significantly positive in the estimation of average per capita growth ( $GRpc$ ),  $\ln T$  is also positively significant in the regression of  $SDgr$ . Furthermore, the significant interactive effect ( $\ln DA_{gov}$ ) shows that  $gov$  improves the effect of  $\ln DA$  significantly.

As shown in Figure 1 and the F-tests at the bottom of Table 1, the effect of  $\ln T$  on growth is also significant but for large values of  $gov$  only. Hence, both  $\ln DA$  and  $\ln T$  appear to have a significant effect on growth especially in case of high levels of governance. In addition, the estimation results indicate that secondary education spending ( $E2GDP$ ) is positively and population density ( $\ln popD$ ) is negatively associated with the growth rate. The first of these is the standard productivity effect whose positive association with growth is expected. The negative coefficient of  $\ln popD$ , on the other hand, appears to be driven by the high population density observed in some land-locked African countries as well as in some advanced nations, both of which groups have relatively lower growth rates than the average.

The results of the estimation of growth volatility, reported in the last two columns, reveal that both the GDP share of investment ( $Igdg$ ) and  $gov$  have significant negative associations with growth volatility. Furthermore, Figure 2 shows that the significant positive association of  $\ln T$  with growth volatility is even stronger in case of high levels of governance, which is an odd result but, judging from the strong negative effect of  $gov$  in the third column, this may arise to the positive association between  $\ln T$  and  $gov$  observed in the Summary Statistics reported in Table 2. An additional interesting finding is that income per capita and trade volatility are positively associated, which is also observed in their correlation coefficient.

**Table 1.** Estimation Results

	Dependent Variable:			
	<i>GRpc</i>	<i>GRpc</i>	<i>SDgr</i>	<i>SDgr</i>
<b><i>GRpc</i></b>			-0.28 (0.24)	-0.23 (0.22)
<b><i>SDgr</i></b>	-0.16 (0.12)	-0.13 (0.11)		
<b><i>InDA</i></b>	8.06** (3.50)	-11.87 (8.08)	2.94 (7.55)	19.80 (13.24)
<b><i>InT</i></b>	0.58** (0.28)	0.06 (0.72)	1.51*** (0.49)	1.41 (1.15)
<b><i>InGDPpcPPP</i></b>	-0.17 (0.27)	-0.30 (0.26)	0.45 (0.39)	0.59* (0.35)
<b><i>E2GDP</i></b>	0.05*** (0.01)	0.05*** (0.01)	0.00 (0.02)	0.00 (0.02)
<b><i>gov</i></b>	-0.06 (1.14)	-3.94 (4.29)	-5.22*** (1.43)	-5.54 (6.37)
<b><i>InTOT</i></b>	-0.88 (0.73)	-1.15 (0.71)	0.72 (1.19)	0.95 (1.10)
<b><i>InpopD</i></b>	-0.27** (0.12)	-0.30** (0.12)	-0.21 (0.17)	-0.17 (0.15)
<b><i>Igdp</i></b>	-0.03 (0.02)	-0.03 (0.02)	-0.07** (0.04)	-0.07* (0.04)
<b><i>InDAgov</i></b>		32.65*** (12.13)		-27.72 (24.76)
<b><i>InTgov</i></b>		0.97 (1.01)		0.04 (1.56)
<b>Constant</b>	1.62 (2.87)	5.06 (4.19)	-0.31 (4.21)	-1.44 (5.61)
Observations	122	122	122	122
F-Test for <i>InDA</i>		6.71***		1.18
F-Test for <i>InT</i>		4.15**		5.85***
R-squared	0.28	0.32	0.27	0.29
Robust standard errors in parentheses				
*** p<0.01, ** p<0.05, * p<0.1				

### 3. Conclusions

This empirical investigation that utilized 122 countries' data, in averages of around 30 years where available, reveals that both openness and domestic absorption have positive significant associations with the growth performance. Furthermore, these associations are observed to improve with governance. In addition, however, while greater trade openness is significantly associated with higher growth volatility, governance and investment rate are significantly negatively associated with it.

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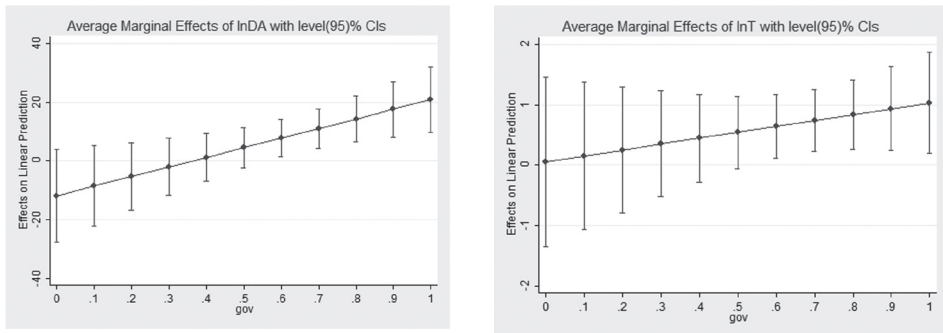
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**Table 2:** Summary Statistics

	GRpc	SDgr	lnDA	lnT	lnGDPpcPPP	E2GDP	gov	lnTOT	lnpopD	lgdp	lnDAgov	lnTgov
GRpc	1.00											
SDgr	-0.16	1.00										
lnDA	0.35	0.00	1.00									
lnT	0.08	0.22	-0.13	1.00								
lnGDPpcPPP	-0.12	-0.10	-0.54	0.32	1.00							
E2GDP	0.22	-0.11	-0.08	0.16	0.36	1.00						
gov	0.02	-0.29	-0.28	0.28	0.78	0.38	1.00					
lnTOT	-0.11	0.19	-0.02	-0.19	-0.21	-0.11	-0.37	1.00				
lnpopD	-0.17	-0.14	-0.08	0.11	0.07	0.04	0.16	-0.28	1.00			
lgdp	-0.06	-0.19	-0.03	-0.08	0.07	0.09	0.07	-0.07	0.00	1.00		
lnDAgov	0.39	-0.05	0.96	-0.13	-0.46	-0.04	-0.23	-0.01	-0.06	-0.03	1	
lnTgov	0.03	-0.19	-0.30	0.52	0.77	0.38	0.96	-0.37	0.18	0.03	-0.258	1
Min	-6.16	1.42	-0.34	3.08	6.46	0.00	0.00	-0.45	-1.93	9.92	-0.25	0.00
Max	8.03	20.70	0.31	5.85	11.60	65.78	1.00	1.29	9.72	45.64	0.13	5.38

## Figures

**Figure 1:** Confidence bands for the marginal effects of lnDA and lnT on Growth (GRpc).



**Figure 2:** Confidence bands for the marginal effects of lnDA and lnT on Growth Volatility (SDgr).

