COMPONENTS OF ECONOMIC FREEDOM AND GROWTH:

An Empirical Study

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Abstract

Out of thirteen recently isolated components of economic freedom our study identifies six which are shown to be statistically significantly related to multifactor productivity and capital accumulation. Policy implications, which could not be derived before these results, are discussed, and directions for future research are proposed.

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The present study is an attempt to quantify relationships between economic development and disaggregated factors which constitute elements of "economic freedom" in current terminology. The three main objectives of this paper are to: (1) verify that the currently spreading belief that economic freedom helps (some would even say it is essential for) economic growth has empirical foundations; (2) test which of the elements of economic freedom for which there are sufficient analyzable data, demonstrate a statistically significant relationship to economic growth; and (3) identify desirable directions for further research and policy implications. This is now feasible because of the meticulous work of the Fraser Institute team for over a decade which was recently published in James Gwartney, Robert Lawson and Walter Block, Economic Freedom of the World 1975-1995.[1] In that volume they identified, classified, assembled, and indexed data on economic freedom between the years 1975 and 1995. We fully agree with Gary S. Becker, the 1992 Nobel laureate, that research on the contribution of economic freedom to "economic prosperity and growth [...] has been hampered by incomplete and inadequate measures of freedom in economic life. This book helps fill the void with detailed measures..."

Reports from around the world strongly suggest that countries which have reduced the direct involvement of governments in economic activities show rising rates of growth. These reports often connect such alleged relationship to policies of privatization, changes in laws which make the relevant countries more accommodating to foreign and domestic private business, as well as to other measures which allow citizens to enjoy the fruit of their labor. The degree of implementation of such policies vary among countries partly because of differences in the institutional, social and cultural baggage they inherited and adopted. In recent years a significant amount of work has been devoted to the investigation of a possible connection between the political system and economic growth. For a variety of reasons there is no consensus about that relationship, especially not about the direction of causality, if any.[3]

Until very recently barely any empirical work had been done relating economic growth to specific indicators of economic freedom. This is somewhat surprising given that the idea that minimizing government interference with the activities of the economic actors enhances growth and wealth dates back to Adam Smith. Possible reasons may go beyond the shortage of data mentioned above. In fact, that the efforts of the Fraser Institute are so recent is itself a symptom of the previous mental separation between macro phenomena, including aggregate growth, from the "microfoundations".

There were a few attempts to study relationship between growth and economic freedom prior to the very recent availability of the Fraser data. These were useful but had to use incomplete and subjective variables. A good example is Knack and Keefer whose key variable is property rights, which is clearly relevant.[4] However, their main source were reports by two private for fee companies who compile information regarding risks to foreign investors in various countries. Notwithstanding the data limitations, their results confirmed the importance of institutions that protect property rights in enhancing growth. In another relevant study, Ayal and Karras focused on bureaucracy which can easily become an impediment to economic freedom.[5] Constructing a measure of bureaucracy, they showed that it is negatively related to economic growth because of its negative effects on investment. Because of data limitations, however, their study was confined to a sample of 21 OECD economies.

Barro's article in the first issue of the Journal of Economic Growth includes, besides political and social variables, also some which are directly related to economic behavior.[6] Barro finds that the "cross-country analysis brings out favorable effects from the maintenance of the rule of law, free markets, small government consumption, and high human capital".[7] The first three are clearly related to economic freedom. The only article published so far making use of the

Fraser team's data is a contribution by two members of that team who, using a composite index to measure "economic freedom," conclude that it promotes economic growth.[8]

In this study, we propose to go one step further by examining not whether economic growth is enhanced by economic freedom in the aggregate (a question which we consider to have been settled both theoretically and empirically by now), but rather which ones of the components of economic freedom has contributed to economic growth. We believe that this is the critical question both in terms of economic theory and economic policy.

The remainder of the paper is organized as follows. In section 2 we describe our methodology and data. In section 3 we provide the empirical evidence. Section 4 summarizes and concludes.

Methodology and Data

In the first column of Table 1 we examine for a sample of the 58 countries for which data over 1975-1990 exist, the correlation between growth in GDP per capita over 1975-1990 and the average of each of the thirteen components of economic freedom.[9] Not surprisingly, the estimated correlations are either statistically significantly positive or insignificant. In particular, economic growth is statistically significantly correlated with the following eight components of economic freedom: money growth, inflation variability, government enterprises, negative interest rates, trade taxation, black-market exchange rates, trade size, and foreign capital transactions.

What is the source of these correlations? Do they suggest a causal relationship from economic freedom to growth? And how might economic freedom promote economic growth? To address these questions, we first consider a simple version of Solow's standard neoclassical growth model.[10] Suppose the economy's aggregate production function is $y=Af(k)$, where y is

output per capita, A is multifactor productivity, k is the capital stock per capita, and f is a neoclassical production function.[11] If n is the population growth rate, s the savings (and investment) rate, and y_0 the initial level of output, the rate of growth of y can be written as

$$\dot{y}/y = g(y_0, s, n; A) \tag{1}$$

with partial derivatives $g_1<0$, $g_2>0$, $g_3<0$, and $g_4>0$.[12] In addition, the steady-state level of output is

$$y^{ss} = h(s, n; A) \tag{2}$$

with partial derivatives $h_1>0$, $h_2<0$, and $h_3>0$.

Let us now hypothesize that the reason why output growth is promoted by economic freedom, EF, is that multifactor productivity is an increasing function of EF: A=A(EF), with A'>0. This amounts to hypothesizing that economic freedom enhances the efficiency by which productive inputs are converted into output. Substituting in (1) and (2) we obtain

$$\dot{y}/y = p(y_0, s, n, EF) \tag{3}$$

and

$$y^{ss} = q(s, n, EF) \tag{4}$$

respectively, with $p_1<0$, $p_2>0$, $p_3<0$, $p_4>0$, $q_1>0$, $q_2<0$, and $q_3>0$. Equations (3) and (4) imply that, under the hypothesis that multifactor productivity is enhanced by economic freedom, the latter must have significantly positive effects on economic growth and the steady-state level of output when we control for the effects of initial income, the investment rate, and the population growth rate. In the next section we test this hypothesis for several components of economic freedom by estimating linear versions of (3) and (4).

Data on and the definitions of the economic freedom variables are obtained from

Gwartney et al. Output, investment, and population data are obtained from the Penn World Table (Mark 5.6), documented by Summers and Heston and updated in 1994.[13] The Appendix provides a list of our sample's 58 countries, and each country's sample means over 1975-1990 for output growth rate, population growth rate, investment as a fraction of GDP, and thirteen components of economic freedom.[14] As the Appendix makes clear, the growth experience of the sample's 58 countries has been quite diverse. The average annual growth rate of GDP per capita over 1975-1990 has ranged from almost -4% in Nicaragua to 7% in South Korea. Similarly, the logarithm of the real GDP per capita in 1990 (expressed in purchasing-power-parity adjusted U.S. dollars) ranges from 6.8 in Ghana to 9.8 in the U.S.A. In addition, sizable differences exist for all thirteen components of economic freedom across the sample's economies. In the next section we investigate whether the cross-country differences in GDP per capita and its growth rate can be attributed to differences in economic freedom, and, if so, to which of its components.

Empirical Evidence

Table 2 presents a number of linear specifications of equation (3). We begin with specification (i) which ignores the economic freedom term and estimates a standard growth regression. The results from specification (i) are consistent with the implications of the neoclassical model. Because of conditional convergence, per capita income at the beginning of the period (Y1975) has a negative and statistically significant sign: ceteris paribus, countries that start poorer grow faster. The investment rate and population growth variables also have the expected signs (positive and negative, respectively) and both are statistically significant.

In specifications (ii)-(xiv) of Table 2 we successively include in the regression each of the thirteen economic freedom variables. Note first that the estimated coefficients and statistical

significance of the three economic variables are very robust to the inclusion of the new variables and continue to be as predicted by the neoclassical model. Second, the estimated coefficients of all the economic freedom variables have the expected sign (positive), although they are not all significantly different from zero. In particular, the empirical results enable us to identify six components of economic freedom which have had statistically significant positive effects on growth, when one controls for the effects of initial income, the investment rate, and the population growth rate. From the discussion of the last section, the findings in Table 2 imply that multifactor productivity is enhanced (i) when the money growth rate and inflation variability are kept low, (ii) when the role of government enterprises is small, (iii) when negative real interest rates are rare, (iv) when the difference between the official and the black-market exchange rates is small, (v) when the size of the trade sector is large, and (vi) when citizens are free to engage in capital transactions with foreigners. By contrast, and somewhat surprisingly, the marginal tax rate, conscription, and trade taxes have no statistically discernible effect.

We obtain very similar results when we estimate a number of linear specifications of equation (4), as reported in Table 3, using the logarithm of the 1990 per capita income as a proxy for the steady state. Once more, we begin with specification (i) which ignores the economic freedom terms.[15] Because of persistence, per capita income at the beginning of the period (Y1975) has a positive sign and it is statistically significant: ceteris paribus, countries that were rich in 1975 continue to be rich in 1990. The investment rate and population growth variables also have the expected signs (positive and negative, respectively) and both are statistically significant.

As in Table 2, specifications (ii)-(xiv) of Table 3 successively include in the regression each of the thirteen economic freedom variables. Note again that the estimated coefficients and

statistical significance of the three economic variables are robust to the inclusion of the economic

freedom variables and continue to be as predicted by the neoclassical model. Also, the estimated

coefficients of all the economic freedom variables have the expected positive sign, and six of them

are significantly different from zero: money growth, government enterprises, negative interest

rate, black exchange rate, trade size, and foreign capital. Interestingly, this list of statistically

significant economic freedom components is nearly identical to the one produced by Table 2, the

only exception being inflation variability which is significant in Table 2 but not in Table 3.

By controlling for the effects of initial income, the investment rate, and the population

growth rate, the methodology of equations (3) and (4) examines the effects of economic freedom

on multifactor productivity, or efficiency (the index A in the production function). There is

another channel, however, through which economic freedom might enhance growth: capital

accumulation. Even with constant efficiency, if economic freedom promotes capital accumulation

it would lead to higher steady state output.

To investigate the existence of such a channel, we look at the cross-sectional relationship

between the thirteen components of economic freedom and the investment rate in the last column

of Table 1. With a single exception (transfers and subsidies), the estimated correlations are either

positive and statistically significant or statistically insignificant. In particular, the investment rate

is shown to be high when the money growth rate and inflation variability are kept low, when

citizens are free to own foreign-currency accounts and to engage in capital transactions with

foreigners, when negative real interest rates are rare, when the trade tax is low, when the

difference between the official and the black-market exchange rates is small, when the size of the

trade sector is large, and (curiously) when transfers and subsidies are a large percentage of GDP.

Discussion and Conclusions

The results reported above are very supportive of the proposition that aggregate "economic freedom" enhances growth both via increasing total factor productivity and via enhancing capital accumulation. We expect this finding to be neither surprising nor controversial. What we consider to be the primary contribution of this paper to the literature is the identification of six elements of economic freedom which are shown to be statistically significantly correlated with multifactor productivity and capital accumulation. These are (in the order they appear in the tables): low money growth rate; small role played by government enterprises; rare negative real interest rates; small difference between the official and the black market exchange rates; large size of the trade sector; and freedom of citizens to engage in capital transactions with foreigners. In addition, small inflation variability and low trade taxes were shown to be statistically significant in some of the specifications.

We believe these findings are more useful than results which rely on aggregate or composite indices of economic freedom. While earlier research has shown composite indices to be statistically significantly correlated with growth, our results show that this may be due to the effects of only some of the underlying components of economic freedom.

An additional benefit of our analysis is that it can be used to offer more specific policy suggestions. Instead of much of the existing literature's vague recommendation of "enhancing economic freedom," our results have identified particular elements, cultivation of which is likely to promote capital accumulation and growth. As listed above, they mainly fall in three areas: stable monetary environment, small government participation, and freedom for citizens to transact

with foreigners.

Still, however, a number of unresolved questions remain. For example, we are surprised that some of the variables (such as the marginal tax rate) were not statistically significant. We suspect that this may reflect lack of identification power rather than the absence of an economic effect, but future research is necessary. An additional interesting question is whether the strength of the economic freedom variables would be affected by the inclusion of political freedom variables. Finally, there is the issue of causality among economic freedom, political freedom, and economic growth, which future research may address by more fully utilizing the time dimension of the data.

NOTES

1. James Gwartney, Robert Lawson, and Walter Block, <u>Economic Freedom in the World: 1975-1995</u>. The Fraser Institute, 1996. Their definition of <u>economic freedom</u> is adopted in the present paper: "individuals have economic freedom when (a) property they acquire without the use of force, fraud, or theft is protected from physical invasions by others, and (b) they are free to use, exchange, or give their property to another as long as their actions do not violate the identical rights of others." We define <u>economic growth</u> as the growth rate of real GDP per capita.

2. See the back cover of Gwartney et al.

3. For an important contribution and a survey of the recent literature in this area see Robert J. Barro, "Democracy and Growth." <u>Journal of Economic Growth</u>, 1, 1996, 1-27.

4. Stephen Knack and Philip Keefer. "Institutions and Economic Performance: Cross Country Tests Using Alternative Institutional Measures." <u>Economics and Politics</u>, 7, 1995, 207-227.

5. Eliezer B. Ayal and Georgios Karras. "Bureaucracy, Investment, and Growth."

Economics Letters, 51, 1996, 233-239.

6. See note 3.

7. On page 23.

8. Stephen T. Easton and Michael A. Walker. "Income, Growth, and Economic Freedom." American Economic Review, 87, May 1997, 328-332.

9. Data sources are given later in the section. See Table 1 for the definition of the variables.

10. Robert Solow, "A Contribution to the Theory of Economic Growth." Quarterly Journal of Economics, 70, 1956, 65-94.

11. Among other characteristics, a neoclassical production function has positive and diminishing marginal products. For the full definition see Robert J. Barro and Xavier Sala-i-Martin, Economic Growth, McGraw-Hill, New York, 1995.

12. For a derivation see N. Gregory Mankiw, David Romer, and David N. Weil. "A Contribution to the Empirics of Economic Growth," Quarterly Journal of Economics, 107, 1992, 407-438. Similar methodology is applied by Robert J. Barro, "Economic Growth in a Cross-Section of Countries," Quarterly Journal of Economics, 106, 1991, 407-443.

13. Robert Summers and Alan Heston, "The Penn World Table (Mark 5): An Expanded Set of International Comparisons," Quarterly Journal of Economics, 106, 1991, 327-368.

14. Country selection is dictated by data availability only.

15. If all countries were indeed at their steady states by 1990, the 1975 per capita income should not be included in the regression, since initial income is irrelevant for the determination of the steady state in the neoclassical growth model. Since, however, there is no reason to believe that 1990 income represents the steady state, we include initial income in the regressions to allow for persistence (see below).

Table 1

Correlations with Growth, Output Level, and Investment

	GROWTH	Y1990	INV
MGROWTH	0.495**	0.475**	0.474**
INFLVAR	0.379**	0.544**	0.434**
FORCURR	0.017	0.387**	0.282*
FORDEPOS	-0.005	0.241	0.130
GOVENTER	0.277*	0.354**	0.209
NEGRATE	0.413**	0.508**	0.519**
TRANSFSUB	-0.002	-0.586**	-0.371**
MARGTAX	-0.019	-0.045	-0.068
CONSCR	0.063	-0.118	-0.259
TRADETAX	0.332*	0.784**	0.720**
BLACKEXR	0.459**	0.729**	0.522**
TRADESIZE	0.459**	0.254*	0.331**
FORCAP	0.266*	0.699**	0.393**

Notes. Variables are defined below. **:significant at 1%, *:significant at 5%.

  GROWTH: average growth rate of GDP per capita;

  Y1990: the logarithm of the 1990 value of GDP per capita;

  INV: average investment-to-GDP ratio;

  MGROWTH: average growth rate of money supply minus potential growth rate of real GDP;

  INFLVAR: standard deviation of annual inflation rate;

  FORCURR: freedom of citizens to own foreign-currency bank account domestically;

  FORDEPOS: freedom of citizens to maintain bank account abroad;

  GOVENTER: role and presence of government-operated enterprises;

  NEGRATE: negative real interest rates;

  TRANSFSUB: transfers and subsidies as a percent of GDP;

  MARGTAX: top marginal tax rate;

  CONSCR: use of conscripts to obtain military personnel;

  TRADETAX: taxes on international trade as a percent of exports plus imports;

  BLACKEXR: difference between official and black-market exchange rates;

  TRADESIZE: size of trade sector;

  FORCAP: freedom of citizens to engage in capital transactions with foreigners.

<div align="center">Table 2: Dependent Variable: GROWTH</div>

	(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)
Y1975	-1.58**	-1.84**	-1.90**	-1.77**	-1.78**	-2.12**	-1.96**
	(0.46)	(0.40)	(0.42)	(0.50)	(0.50)	(0.39)	(0.40)
POP	-0.86**	-0.85**	-0.77**	-0.95**	-0.96**	-1.21**	-0.72*
	(0.35)	(0.31)	(0.36)	(0.35)	(0.36)	(0.31)	(0.32)
INV	0.19**	0.19**	0.22**	0.19**	0.19**	0.17**	0.21**
	(0.06)	(0.06)	(0.05)	(0.06)	(0.06)	(0.05)	(0.09)
MGROWTH		0.30**					
		(0.10)					
INFLVAR			0.19*				
			(0.09)				
FORCURR				0.05			
				(0.06)			
FORDEPOS					0.06		
					(0.06)		
GOVENTER						0.37**	
						(0.11)	
NEGRATE							0.22**
							(0.09)
$\bar{R}^2$	0.31	0.45	0.41	0.30	0.31	0.43	0.51

	(viii)	(ix)	(x)	(xi)	(xii)	(xiii)	(xiv)
Y1975	-1.80**	-2.27**	-1.54**	-2.01**	-2.08**	-1.55**	-2.15**
	(0.50)	(0.42)	(0.45)	(0.41)	(0.40)	(0.46)	(0.45)
POP	-1.39**	-1.32**	-0.91**	-0.98*	-0.66*	-0.94**	-0.86**
	(0.37)	(0.39)	(0.32)	(0.39)	(0.31)	(0.33)	(0.32)
INV	0.22**	0.24**	0.20**	0.21**	0.17**	0.16**	0.19**
	(0.06)	(0.05)	(0.06)	(0.05)	(0.05)	(0.06)	(0.06)
TRANSFSUB	0.16						
	(0.16)						
MARGTAX		0.22					
		(0.17)					
CONSCR			0.09				
			(0.06)				
TRADETAX				0.09			
				(0.16)			
BLACKEXR					0.39**		
					(0.09)		
TRADESIZE						0.24**	
						(0.09)	
FORCAP							0.28**
							(0.11)
$\bar{R}^2$	0.42	0.40	0.33	0.38	0.46	0.40	0.38

Notes. POP is the average population growth rate. The rest of the variables

are defined in Table 1. All equations are estimated with a constant term (not reported here). Estimated standard errors (heteroskedasticity-consistent) in parentheses. significant at 1% (**), 5%(*).

Table 3: Dependent Variable: Y1990

	(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)
Y1975	0.73**	0.67**	0.66**	0.71**	0.71**	0.65**	0.67**
	(0.07)	(0.06)	(0.06)	(0.08)	(0.08)	(0.06)	(0.06)
POP	-0.17**	-0.18**	-0.17**	-0.19**	-0.19**	-0.22**	-0.16**
	(0.05)	(0.04)	(0.05)	(0.05)	(0.05)	(0.04)	(0.05)
INV	0.02**	0.03**	0.03**	0.02*	0.02*	0.02**	0.03**
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
MGROWTH		0.04**					
		(0.02)					
INFLVAR			0.02				
			(0.01)				
FORCURR				0.01			
				(0.01)			
FORDEPOS					0.01		
					(0.01)		
GOVENTER						0.06**	
						(0.02)	
NEGRATE							0.03*
							(0.01)
$\overline{R}^2$	0.91	0.93	0.93	0.90	0.91	0.92	0.96

	(viii)	(ix)	(x)	(xi)	(xii)	(xiii)	(xiv)
Y1975	0.69**	0.62**	0.73**	0.64**	0.65**	0.73**	0.61**
	(0.07)	(0.06)	(0.07)	(0.05)	(0.06)	(0.07)	(0.06)
POP	-0.27**	-0.25**	-0.18**	-0.19*	-0.13*	-0.18**	-0.16**
	(0.04)	(0.05)	(0.04)	(0.05)	(0.04)	(0.05)	(0.04)
INV	0.03**	0.03**	0.02**	0.03**	0.02**	0.02*	0.02**
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
TRANSFSUB	0.03						
	(0.02)						
MARGTAX		0.03					
		(0.03)					
CONSCR			0.02				
			(0.01)				
TRADETAX				0.02			
				(0.02)			
BLACKEXR					0.07**		
					(0.01)		
TRADESIZE						0.04**	
						(0.01)	
FORCAP							0.06**
							(0.01)
$\overline{R}^2$	0.93	0.93	0.91	0.93	0.94	0.92	0.92

Notes. POP is the average population growth rate. The rest of the variables

are defined in Table 1. All equations are estimated with a constant term (not
reported here). Estimated standard errors (heteroskedasticity-consistent) in
parentheses. significant at 1% (**), 5%(*).

Appendix
Sample Means

	Code	Country	GROWTH	Y1990	POP	INV	MGROWTH	INFVAR	FORCURR	FORDEP
1	4	BOTSWANA	3.70	NA	3.59	20.28	4.33	2.25	0.00	0.00
2	7	CAMEROON	2.92	7.11	2.95	11.21	5.50	6.75	0.00	0.00
3	14	EGYPT	3.32	7.55	2.46	5.80	3.75	6.50	7.50	7.50
4	18	GHANA	-1.61	6.80	2.73	4.64	1.00	2.00	2.50	0.00
5	22	KENYA	0.58	6.81	3.85	13.38	6.50	6.00	0.00	0.00
6	29	MAURITIUS	4.34	8.67	1.34	10.26	5.00	5.75	0.00	0.00
7	34	NIGERIA	-1.18	6.90	3.05	13.99	2.75	3.50	0.00	0.00
8	41	SOUTH AFRICA	-0.48	8.08	2.62	17.97	3.25	7.00	0.00	0.00
9	44	TANZANIA	0.59	NA	3.13	11.40	1.75	3.50	0.00	0.00
10	48	ZAIRE	-3.14	NA	3.18	5.39	0.75	2.00	0.00	0.00
11	50	ZIMBABWE	-0.83	7.07	3.25	13.36	3.66	5.50	0.00	0.00
12	54	CANADA	2.46	9.75	1.06	24.63	7.25	7.50	10.00	10.00
13	55	COSTA RICA	0.33	8.16	2.85	17.41	2.00	3.50	10.00	10.00
14	60	GUATEMALA	-0.30	7.66	2.85	9.24	3.75	3.50	7.50	10.00
15	62	HONDURAS	0.87	7.22	3.45	13.42	5.25	6.00	10.00	10.00
16	64	MEXICO	1.15	8.67	2.29	16.88	1.25	2.25	10.00	10.00
17	65	NICARAGUA	-3.94	7.16	2.84	11.37	1.00	0.75	5.00	5.00
18	72	U.S.A.	1.72	9.80	0.99	21.05	8.00	8.75	10.00	10.00
19	73	ARGENTINA	-1.36	8.45	1.47	16.33	0.00	0.00	10.00	10.00
20	74	BOLIVIA	-0.61	7.41	2.58	12.88	1.00	0.75	7.50	7.50
21	75	BRAZIL	1.50	8.30	2.20	19.15	0.50	1.00	0.00	0.00
22	76	CHILE	1.70	8.37	1.61	19.02	1.75	2.00	7.50	5.00
23	81	PERU	-1.90	7.69	2.41	18.02	0.75	1.25	5.00	0.00
24	84	VENEZUELA	-1.38	8.70	2.95	19.36	2.25	2.25	10.00	10.00
25	89	HONG KONG	6.42	9.60	1.95	19.98	6.75	5.75	10.00	10.00
26	90	INDIA	3.28	7.14	2.21	14.40	5.00	6.75	0.00	0.00
27	91	INDONESIA	4.95	7.58	2.03	22.91	2.50	3.50	10.00	10.00
28	92	IRAN	-3.48	8.12	3.48	18.72	1.50	4.00	10.00	7.50
29	94	ISRAEL	1.31	9.13	1.96	21.80	1.00	1.00	10.00	0.00
30	95	JAPAN	3.41	9.57	0.74	33.96	8.00	8.25	10.00	2.50
31	97	KOREA, REP.	7.00	8.80	1.36	28.79	4.25	4.00	0.00	0.00
32	100	MALAYSIA	3.64	8.54	2.50	26.70	6.75	4.75	7.50	7.50
33	105	PAKISTAN	2.73	7.23	3.10	9.66	4.50	6.75	2.50	0.00
34	106	PHILIPPINES	0.69	7.47	2.41	17.30	3.75	4.00	0.00	0.00
35	109	SINGAPORE	5.66	9.36	1.88	35.14	8.50	6.25	5.00	2.50
36	111	SYRIA	1.18	8.26	3.30	16.14	2.00	5.33	10.00	6.66
37	112	TAIWAN	6.54	8.99	1.59	24.71	3.50	5.25	10.00	10.00
38	113	THAILAND	4.71	8.18	2.15	17.69	6.75	6.50	2.50	0.00
39	116	AUSTRIA	2.15	9.44	0.04	25.24	8.25	10.00	10.00	2.50
40	117	BELGIUM	1.77	9.49	0.11	21.66	8.75	9.00	10.00	10.00
41	120	CZECHOSLOVAKIA	2.03	8.31	0.41	28.59	NA	NA	0.00	0.00
42	121	DENMARK	1.84	9.54	0.11	23.12	5.25	9.25	2.50	2.50
43	122	FINLAND	2.68	9.55	0.37	32.44	5.00	8.00	10.00	2.50
44	123	FRANCE	1.76	9.53	0.48	25.80	6.00	8.75	2.50	2.50
45	125	GERMANY, WEST	2.06	9.57	-0.00	25.12	7.00	10.00	10.00	10.00
46	126	GREECE	2.06	8.81	0.76	22.28	2.25	6.50	10.00	0.00
47	130	ITALY	2.36	9.43	0.28	24.72	4.25	7.00	2.50	2.50
48	133	NETHERLANDS	1.31	9.47	0.61	21.73	7.50	9.50	10.00	10.00
49	134	NORWAY	2.97	9.60	0.39	30.18	4.75	7.00	2.50	2.50
50	135	POLAND	0.68	8.24	0.79	30.74	NA	NA	10.00	10.00
51	136	PORTUGAL	2.41	8.91	0.82	21.48	2.75	5.75	0.00	0.00
52	138	SPAIN	1.61	9.16	0.67	24.24	3.00	7.50	0.00	0.00
53	139	SWEDEN	1.53	9.59	0.27	21.52	5.75	8.75	10.00	0.00
54	140	SWITZERLAND	1.02	9.71	0.20	28.29	9.25	9.75	10.00	10.00
55	641	TURKEY	1.72	8.22	2.27	23.00	1.00	2.25	2.50	2.50
56	142	U.K.	2.32	9.48	0.11	17.36	3.25	6.50	5.00	5.00
57	145	AUSTRALIA	1.81	9.57	1.35	27.28	5.75	7.75	10.00	10.00
58	147	NEW ZEALAND	0.43	9.35	0.64	23.38	4.00	6.25	2.50	2.50

(Table continues)

Code	Country	GOVENTER	NEGRATE	TRANSF	MARGTAX	CONSCR	TRDTAX	BLACKX	TRDSIZE	FORCAP
4	BOTSWANA	7.50	5.33	5.66	1.25	10.00	2.00	3.33	10.00	5.00
7	CAMEROON	4.00	6.66	9.66	NA	10.00	3.00	7.33	4.00	0.00
14	EGYPT	2.50	5.33	1.66	1.33	0.00	1.50	4.66	9.33	0.00
18	GHANA	0.50	0.66	8.66	1.00	10.00	0.25	0.66	0.33	0.00
22	KENYA	4.00	8.00	7.00	1.00	10.00	4.50	5.33	6.66	0.00
29	MAURITIUS	6.00	NA	5.33	5.66	10.00	2.25	4.00	4.33	2.00
34	NIGERIA	2.50	2.00	NA	1.25	10.00	4.50	1.00	5.33	0.00
41	SOUTH AFRICA	4.00	6.66	7.00	3.00	0.00	8.50	5.00	9.00	2.00
44	TANZANIA	1.00	2.66	8.66	NA	5.00	3.33	0.33	3.00	0.00
48	ZAIRE	2.00	NA	10.00	1.25	10.00	1.00	2.66	4.33	2.00
50	ZIMBABWE	4.00	7.33	3.50	2.00	0.00	4.75	1.66	6.66	2.00
54	CANADA	6.00	9.00	3.00	4.00	10.00	7.75	10.00	9.33	8.00
55	COSTA RICA	8.00	NA	5.00	5.50	10.00	4.75	3.00	2.33	3.50
60	GUATEMALA	8.00	8.00	10.00	7.25	0.00	5.50	3.00	1.00	5.00
62	HONDURAS	8.00	NA	NA	6.75	3.33	5.00	5.00	4.00	0.00
64	MEXICO	2.50	5.33	6.33	5.00	0.00	4.50	4.66	1.00	2.75
65	NICARAGUA	3.00	NA	6.66	6.66	0.00	4.25	1.66	2.66	1.25
72	U.S.A.	8.00	9.50	3.00	2.75	10.00	8.75	10.00	2.33	10.00
73	ARGENTINA	4.50	0.00	3.66	4.75	0.00	0.25	3.66	0.33	0.00
74	BOLIVIA	5.00	4.66	9.33	7.00	0.00	4.25	5.00	4.00	2.00
75	BRAZIL	3.00	NA	3.50	4.75	0.00	4.75	2.66	2.00	0.00
76	CHILE	7.50	8.00	3.00	1.50	0.00	6.00	5.33	4.66	2.00
81	PERU	4.00	NA	9.00	2.50	0.00	2.50	2.66	3.33	2.00
84	VENEZUELA	4.00	NA	8.00	7.75	0.00	5.50	7.66	5.00	6.50
89	HONG KONG	10.00	NA	10.00	9.50	10.00	9.00	10.00	9.33	10.00
90	INDIA	0.00	8.00	6.00	0.75	10.00	0.00	5.00	1.66	2.00
91	INDONESIA	2.50	4.66	8.33	5.25	0.00	7.25	5.66	9.33	2.00
92	IRAN	2.50	NA	5.66	NA	0.00	2.50	2.66	4.00	1.25
94	ISRAEL	2.00	2.00	1.00	2.66	0.00	6.00	5.00	4.33	2.00
95	JAPAN	8.00	8.50	4.00	1.00	10.00	9.00	10.00	3.00	4.25
97	KOREA, REP.	5.75	6.50	9.00	1.75	0.00	6.75	5.00	8.00	1.75
100	MALAYSIA	5.00	8.66	6.33	4.50	10.00	4.75	10.00	10.00	5.00
105	PAKISTAN	2.50	6.66	NA	1.75	7.50	0.00	4.33	4.33	2.00
106	PHILIPPINES	4.00	7.00	10.00	3.00	5.00	3.25	5.00	8.00	2.00
109	SINGAPORE	8.00	10.00	9.66	6.25	0.00	9.25	10.00	10.00	9.00
111	SYRIA	2.66	NA	NA	NA	0.00	5.33	1.00	1.50	0.00
112	TAIWAN	4.00	9.00	8.33	3.50	0.00	7.00	6.66	6.33	2.75
113	THAILAND	6.00	7.33	10.00	3.00	0.00	4.50	6.33	6.33	2.00
116	AUSTRIA	2.00	8.50	0.66	3.00	0.00	8.75	10.00	7.33	2.75
117	BELGIUM	6.00	9.00	0.00	1.00	0.00	10.00	10.00	9.66	10.00
120	CZECHOSLOVAKIA	0.00	NA	NA	NA	0.00	NA	0.00	NA	0.00
121	DENMARK	4.00	9.50	1.33	0.25	0.00	9.75	8.33	3.33	5.00
122	FINLAND	6.00	9.33	2.66	1.00	0.00	8.75	8.66	4.33	2.00
123	FRANCE	4.50	8.00	0.00	3.00	0.00	10.00	7.33	5.00	2.75
125	GERMANY, WEST	6.00	9.50	1.66	3.00	0.00	10.00	10.00	7.00	9.00
126	GREECE	2.00	6.00	3.00	3.00	0.00	8.25	4.66	2.66	2.00
130	ITALY	2.00	6.50	1.00	2.50	0.00	10.00	8.33	5.33	5.00
133	NETHERLANDS	6.00	9.00	0.00	1.25	0.00	9.75	10.00	9.00	7.25
134	NORWAY	2.00	8.66	1.00	1.00	0.00	9.50	8.00	8.00	4.25
135	POLAND	0.00	NA	NA	NA	0.00	NA	0.00	5.00	0.00
136	PORTUGAL	2.00	7.33	2.00	1.25	0.00	8.00	5.33	5.00	2.75
138	SPAIN	4.00	8.66	2.50	2.25	0.00	7.00	8.00	3.00	5.00
139	SWEDEN	4.00	8.00	0.00	0.25	0.00	9.00	7.33	5.66	4.75
140	SWITZERLAND	8.00	8.00	3.00	7.25	0.00	7.75	10.00	6.00	8.00
141	TURKEY	4.00	3.00	4.66	2.33	0.00	4.50	4.66	2.33	0.00
142	U.K.	5.00	7.00	2.33	3.50	10.00	10.00	10.00	6.66	8.00
145	AUSTRALIA	6.00	8.50	3.66	2.25	10.00	6.75	8.66	5.00	4.25
147	NEW ZEALAND	6.00	8.00	1.00	3.00	10.00	8.00	7.33	5.33	6.25

Notes. Except for Y1990 which is the logarithm of the 1990 value of GDP per capita, sample means are for the 1975-1990 period. Variables as defined in Table 1.