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## Future Research: Mapping Policy Choices to Price Convergence

Our analysis of potential benefits raises an important question: What is the mapping between policy choices and price convergence? If the only way for an emerging country to achieve price convergence is to acquire the infrastructure and other characteristics of an OECD nation, then the potential benefits illustrated by our calculations could be characterized as minor adjuncts to the process of economic development. On the other hand, to the extent liberalization policies promote price convergence, the benefits could be characterized as a contribution to economic development.

To shed light on this question, we have regressed the number of items in each city that fall outside the BWPB against key national and city characteristics—an openness index, distance from a central US city (Chicago), population, and a per capita income index. The openness index is based on data contained in the Freedom Index (Heritage Foundation and *Wall Street Journal* 2000). We estimated coefficients for two versions of the equation, by first starting with market exchange rates, and then starting with PPP rates. We first estimated an equation for consumer goods only, then for nontradable services and highly taxed items (indicated by N and H in table A.1, appendix A), and last for all items in the EIU dataset (tradable and nontradable items alike). The results appear in table 7.1.

The estimated coefficients and their standard errors in table 7.1 indicate that three of the coefficients are large and very significant: openness, distance, and income level.<sup>1</sup> Surprisingly, the population coefficient is not

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1. Per capita GDP did not perform as well as a simple index classifying countries according to the World Bank (table 1) scale: high income, upper middle income, lower middle income, low income.

**Table 7.1 Price divergence and potential factors****Dependent variable: Number of items outside of BWPB calculated using market exchange rate**

	Sector					
	Tradables		Services and high-tax items		All items	
	Regression coefficients	t-values	Regression coefficients	t-values	Regression coefficients	t-values
Openness index <sup>a</sup>	4.54	2.38	3.21	2.91	7.75	3.00
Population <sup>b</sup>	0.01	1.62	0.01	1.56	0.02	1.65
Distance <sup>c</sup>	0.77	1.70	0.24	1.24	1.01	1.63
Income level <sup>d</sup>	5.95	2.33	1.75	1.31	7.70	2.15
GDP <sup>e</sup>	-0.002	-3.54	-0.001	-3.71	-0.003	-3.76
Constant	8.39	2.03	5.97	2.91	14.36	2.51
Adjusted R-squared	0.64		0.62		0.66	

**Dependent variable: Number of items outside of BWPB calculated using PPP exchange rate**

	Sector					
	Tradables		Services and high-tax items		All items	
	Regression coefficients	t-values	Regression coefficients	t-values	Regression coefficients	t-values
Openness index <sup>a</sup>	14.57	8.62	5.83	8.06	20.40	9.06
Population <sup>b</sup>	0.00	2.21	0.00	1.23	0.00	2.00
Distance <sup>c</sup>	22.58	2.89	11.66	2.90	34.23	2.92
Income level <sup>d</sup>	1.89	1.33	0.40	0.58	2.28	1.15
GDP <sup>e</sup>	0.00	-5.62	0.00	-4.71	0.00	-5.58
Constant	1.32	0.23	4.73	1.54	6.05	0.74
Adjusted R-squared	0.72		0.68		0.72	

BWPB = broad world price band

PPP = purchasing power parity

a. The openness index is calculated using the Freedom Index (Heritage Foundation and *Wall Street Journal* 2000) and the average of three indexes—monetary policy, trade policy, and black market. The index ranges from 1 (the most open/liberal) to 5 (the least open).

b. Population of the country in 1999 expressed in millions of people.

c. Distance between a city and Chicago expressed in thousands of kilometers.

d. Income level is divided into four groups: high, middle high, middle low, and low. Group 1 is high income, 2 is middle high, and so on.

e. GDP is expressed in US\$ billions, and calculated using market exchange rates.

Source: Authors' calculations.

particularly robust—in other words, large countries do not have substantially more price divergence than small countries.

Of most interest, however, is the result that openness is a strong determinant of price divergence. The difference between a high and a low openness index accounts for 10 of the 40 items that (on average) exhibit greater price divergence than the margins of the BWPB. The components of the openness index are the average tariff rate (reflecting trade policy),

the inflation rate (reflecting monetary policy), and the extent of black market activity (reflecting governance). These components are policy-driven variables. Countries that choose to eliminate their trade and investment barriers, practice monetary discipline, and adopt procompetitive policies can achieve a substantial fraction of the benefits described in this study. This policy conclusion is supported by the analysis of Parsely and Wei (1999): they found that the border effect per se swamps other explanatory variables of price divergence, and can have an effect equal to millions of miles of distance between two cities.

The other three variables in our regression equation are, of course, either less susceptible or not susceptible at all to policy choice. There is nothing countries can do about their distance from the United States; however, as noted already, distance is not the most important reason for price divergence. Governments can influence the national population size through immigration policy and pronatal or antinatal measures. Of course, these are controversial policies with delayed results; in any event population size is not a powerful variable. Finally, while income level obviously reflects policy choices over a period of two decades or more, the critical policy choices a country must make to reach a high level of income go far beyond removing trade barriers and instilling competition in the marketplace.