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Winners and losers in the commodity lottery: The impact of terms of trade growth and volatility in the Periphery 1870–1939

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Abstract

Most countries in the periphery specialized in the export of just a handful of primary products for most of their history. Some of these commodities have been more price volatile than others, and those with more volatility have grown much more slowly relative to the industrial leaders and to other primary product exporters. This fact helps explain the growth puzzle noted by Easterly, Kremer, Pritchett and Summers more than a decade ago: that the contending fundamental determinants of growth — institutions, geography and culture — exhibit far more persistence than do the growth rates they are supposed to explain. Using a new panel database for 35 countries, this paper estimates the impact of terms of trade volatility and secular change on country performance between 1870 and 1939. Volatility was much more important for growth than was secular change and accounts for a substantial degree of the divergence in incomes within the sample of small, commodity-dependent 'Periphery' nations as well as under-performance of the Periphery as a whole relative to such nations as the US and Western Europe, or 'Core'. One channel of impact seems to be the adverse effect of volatility on foreign investment. It appears that the terms of trade effects were asymmetric between Core and Periphery.

JEL classification: F1; N10; O1
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1. Introduction

This essay explores an underappreciated aspect of long term growth: differences in price trends and volatility across primary commodities explain much of the global income divergence observed in the last century and a half. We show that most countries outside Western Europe and the US have been specialized in the export of the same handful of primary commodities for most of their history. Moreover, some commodity prices have proven more volatile than others, and some have enjoyed better secular growth. A look at commodity dependent price-taking economies (the *Periphery*) yields two main results. First, those countries with more volatile primary product prices grew more slowly relative to other primary product exporters as well as to the industrial leaders (or *Core*). Second, after controlling for volatility, rising terms of trade are associated with higher growth in Core countries, but not so in the price-taking Periphery.

We establish these facts using a new database of commodities, prices, and incomes for 35 countries over eight decades—a coverage of more than 85% of the world population and nearly all of world GDP in 1914. Fig. 1 illustrates the simple bivariate relationship between income and terms of trade volatility over the entire period, 1870 to 1939. Examining the price-taking Periphery, simple OLS estimates will suggest that a one standard deviation increase in terms of trade volatility was associated with a 0.4 percentage point decrease in the rate of income growth per annum—a 40% decrease from the mean. This estimate seems to be a lower bound, with the upper bound a 66% decrease from the mean of income growth. Our results are extremely robust to alternative time periods, definitions of volatility, and exclusion of larger exporters where one might fear the terms of trade are less likely to be exogenous. Meanwhile, Fig. 2 illustrates the bivariate relation between income and terms of trade growth, suggesting a mild positive correlation. A multivariate treatment will show that after controlling for volatility income growth is in fact not robustly related to secular terms of trade changes in the Periphery.

We investigate one prime channel through which volatility could have impacted growth—foreign investment. Eichengreen (1996) argues that in much of the Periphery capital inflows

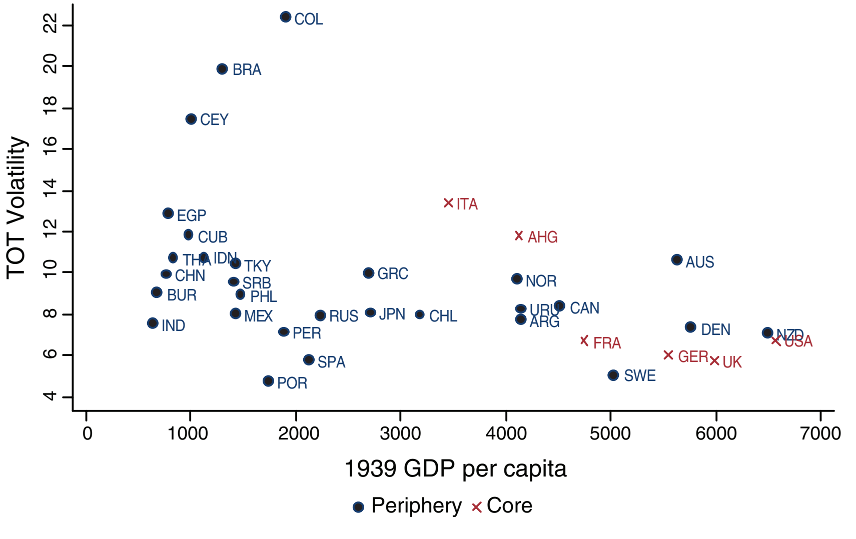

Fig. 1. 1939 GDP per capita and terms of trade volatility 1870–1939.