Trade liberalization and the balance of payments constraint with intermediate imports: The case of Mexico revisited

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ABSTRACT

Previous studies have found that a tightening of the balance of payments (BP) constraint can explain the slowdown in Mexico's growth after its trade liberalization in the late 1980s. This paper develops a disaggregated model of the BP constraint with two types of exports (manufactures and primary commodities) and two types of imports (intermediate and final goods). Econometric estimates (including tests for structural breaks) show that the BP-equilibrium growth rate did not fall, but instead rose in the post-liberalization period, so this model cannot account for the country's growth slowdown. Instead, the analysis points to the need to consider the real exchange rate as well as internal obstacles and policies.

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1. Introduction

During the past two decades, a large empirical literature has applied the model of balance-of-payments-constrained growth (BPCG), originally developed by Thirlwall (1979),[1] to a variety of countries and situations. In recent years, the model has been applied to countries as diverse as India (Razmi, 2005), China (Jeon, 2009), and Turkey (Halicioglu, 2012). A relatively new strand of the literature has sought to expand the model's compass to address comparative growth performance across global regions as well as structural changes within particular countries or regions (Cimoli et al., 2010). One branch of this new literature has developed a multisectoral version of "Thirlwall's Law," which shows how changes in the sectoral composition of output can either relax or tighten the balance of payments (BP) constraint (Araujo and Lima, 2007; Gouvea and Lima, 2010).

One case in which the BPCG model appears to have had strong success is in explaining the growth slowdown in Mexico following its liberalization of trade in the late 1980s. Moreno-Brid (1999, 2002), Pacheco-[López and Thirlwall (2004), and several others (cited below) all found that Mexico's income elasticity of import demand increased significantly during the post-liberalization period (or after the formation of the North American Free Trade Agreement, NAFTA, in 1994), without a compensating acceleration of the country's export growth. In the BPCG framework, this implies a reduction in the growth rate consistent with BP equilibrium, i.e., the growth rate just low enough to prevent chronically

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[1] See McCombie and Thirlwall (2004), as well as other sources cited below, for later extensions and applications of this framework. For skeptical views, see Razmi (2011) and Ros (2013, chap. 10).

increasing trade deficits caused by imports rising faster than exports.

There is no question that Mexico's average growth rate has declined since the country opened its economy in the aftermath of the 1980s debt crisis. Mexico's growth rate has averaged about 3% per year since 1987, barely half of what the country achieved between the 1940s and the 1970s. Similarly, the average growth rate of per capita income fell from about 3% to 1% per year between the same two periods (the gap is smaller in per capita terms because population growth also slowed down).[2] However, the applications of the BPCG model to explaining the post-1987 growth slowdown have mostly ignored crucial structural changes in Mexico's external trade between the pre- and post-liberalization eras.

In particular, the proportion of Mexico's imports that consists of intermediate goods has risen from about half in the pre-liberalization period to about two-thirds (excluding maquiladoras) or three-quarters (including them) in the post-liberalization period. Furthermore, manufactured exports, which are highly intensive in the use of imported intermediate inputs, have also risen to account for a majority of total exports in the same period (about two-thirds excluding maquiladoras, and four-fifths including them).[3] According to the estimates of the multisectoral BPCG model in Gouvea and Lima (2010), Mexico's exports shifted toward more technologically advanced products with higher income elasticities in a way that more resembles the East Asian countries rather than other Latin American nations in their sample. However, they do not take the heavy dependency of Mexican manufactured exports on imported intermediate goods into account in their modeling approach.

By neglecting potential differences in the behavior of imports of intermediate and final goods, econometric models that estimate aggregate import behavior may be misspecified and, in particular, estimates of income elasticities may be biased. For example, what appears to be a rise in the income (GDP) elasticity of import demand may be, rather, a reflection of the increases in the shares of manufactured exports and intermediate imports in their respective totals. In this vein, Ibarra (2011a,b) has shown that the income elasticity of Mexico's demand for imports of intermediate goods did not increase significantly post-liberalization, once one controls for the fact that the demand for such imports is also a function of manufactured exports. However, Ibarra's work leaves open the question of whether the BP constraint on Mexico's growth was not tightened in another way, for example by an increase in the elasticity of intermediate imports with respect to manufactured exports.

Indeed, trade liberalization may have contradictory effects on BP-equilibrium growth: by facilitating imports of intermediate goods as well as access to foreign markets, it may boost the growth of manufactured exports; at the same time, however, the intensive use of intermediate imports in producing those exports diminishes the benefits in terms of relaxing the constraints on the rate of output growth consistent with BP equilibrium (hereafter, the "BP-equilibrium growth rate"). Overall, the net impact of trade liberalization on Mexico's BP-equilibrium growth rate is an empirical question that has yet to be resolved with a model that adequately incorporates the key role of intermediate imports in relation to the country's manufactured exports.

The present paper addresses this question by constructing a disaggregated BPCG model that incorporates two different kinds of imports (intermediate and final goods) and two different kinds of exports (manufactures and primary products). In this extended model, the solution for the BP-equilibrium growth rate takes account of the composition of imports and exports as well as the income elasticities and other estimated coefficients (especially, the elasticity of intermediate imports with respect to manufactured exports).

Somewhat surprisingly, we find that, according to new econometric estimates of this model provided below, the BP-equilibrium growth rate did not decrease after Mexico liberalized its trade in the late 1980s, but instead actually increased. Although the income elasticity of the demand for imports of final goods did increase post-liberalization, neither the income elasticity of intermediate import demand nor the elasticity of this demand with respect to manufactured exports increased significantly. Furthermore, our estimates imply that Mexico grew faster than the rate predicted by our augmented BPCG model in the 1960s and 1970s, and has grown notably more slowly than the model's predicted rate since the late 1980s. These results suggest that other factors, rather than a tightening of the BP constraint, have accounted for the post-liberalization slowdown in Mexican growth. These other factors may include indicators of external constraints more broadly defined (especially the real exchange rate, which is neglected in the standard BPCG approach), as well as various internal policies and obstacles.

Before proceeding further, two caveats are in order. First, as a result of limitations in the available data for the maquiladora sector, the econometric analysis in this paper is conducted using two alternative sets of measures of Mexico's manufactured exports and intermediate imports—one set including maquiladora data and one excluding them—and all the data series end in 2006.[4] These two sets of data yield estimates that differ quantitatively

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