



Regular Article

Current account norms in natural resource rich and capital scarce economies☆



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ARTICLE INFO

Article history:

Received 18 February 2014

Received in revised form 5 May 2015

Accepted 13 October 2015

Available online 23 October 2015

Keywords:

Current account

External sustainability

Developing economies

ABSTRACT

The permanent income hypothesis implies that frictionless open economies with exhaustible natural resources should save abroad most of their resource windfalls and, therefore, feature current account surpluses. Resource rich developing countries (RRDCs), on the other hand, face substantial development needs and tight external borrowing constraints. By relaxing these constraints and providing a key financing source for public investment, resource windfalls might then be associated with current account deficits or at least low surpluses. In this paper, we develop a neoclassical model with private and public investment and several pervasive features in RRDCs, including absorptive capacity constraints, inefficiencies in investment, borrowing constraints, and capital scarcity. We use the model to study the role of investment and these frictions in shaping the current account dynamics under windfalls. Since consumption and investment decisions are optimal, the model also serves to analyze current account *norms* (benchmarks). We apply the model to the Economic and Monetary Community of Central Africa and discuss how our results can be used to inform external sustainability analyses in RRDCs.

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1. Introduction

External imbalances often concern policy makers, since persistent current account misalignments can threaten external and financial stability (IMF, 2014). For developing countries, external sustainability is challenging, as they are typically subject to large external shocks and may have limited ability to finance current account deficits (Vegh, 2013). Moreover, as many of these countries have fixed exchange rate arrangements, persistent current account deficits can be associated with currency overvaluation—a real exchange rate misalignment—which in the past has preceded well-known currency crisis (Kaminsky et al., 1998).

External sustainability issues may be compounded in resource rich developing countries (RRDCs).¹ During resource windfalls, RRDCs

must decide how much to consume or save out of this transitory and sizeable resource income, as well as how much to invest. But these decisions are not innocuous for macroeconomic and external stability, since they can determine whether RRDCs may face, or avert, boom–bust cycles and external sector disruptions. Not surprisingly, history shows that many countries that failed to manage resource booms also faced abrupt external adjustments.² With the significant rise of resource prices in the last decade, followed by the recent decline, the issue of how to manage resource windfalls in RRDCs and its implications for external sustainability have once more come to the fore of policy and academic discussions (IMF, 2012a). And, as part of these discussions, there is a revived interest in determining the appropriate level of the current account—the *norm*—in RRDCs.

Assessing external sustainability, however, is not an easy task. This requires identifying a current account balance consistent with economic fundamentals that can serve as a norm (benchmark).³ When the current account balance is substantially below this norm, the real exchange rate is assessed to be overvalued, and the country will eventually need to generate external surpluses to correct this imbalance. If, over time, the country is unable to generate the necessary surpluses or to externally

☆ We thank Bernardin Akitoby, Michal Andrle, Andy Berg, Ed Buffie, Raphael Espinoza, Kerstin Gerling, Cathy Pattillo, Chris Papageorgiou, Rick van der Ploeg, Rafael Portillo, Alex Segura-Ubierno, Abdel Senhadji, Priscilla Toffano, Susan Yang, Shang-Jin Wei (the editor) and two anonymous referees for their valuable comments. We are also grateful to Manzoor Gill, Pranav Gupta, Nancy Tinoza, and Yorbol Yakhshilikov for excellent research assistance and Bernardin Akitoby for allowing us to use the dataset of Akitoby and Stratmann (2008). This paper is part of a research project on macroeconomic policy in low-income countries supported by U.K.'s Department for International Development (60925). The views expressed herein are those of the authors and should not be attributed to the IMF, its Executive Board, its management, or to DFID.

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¹ In this paper resource-rich developing countries refer to low-income and lower-middle income countries with exhaustible natural resources (e.g., oil and minerals).

² Manzano and Rigobon (2007) argue that during the 1970s, when commodity prices were high, natural resource abundant countries used them as collateral for borrowing. As the 1980s witnessed an important fall in these prices, some countries faced debt crises.

³ See Lee et al. (2008) and IMF (2012b) which describe the Consultative Group on Exchange Rate Issues (CGER) and External Balance Assessment (EBA) methodologies, developed at the International Monetary Fund.

finance this imbalance, some real depreciation will be inevitable. This, of course, may have significant output, consumption, and welfare costs, especially in those countries with fixed exchange rate regimes, where a currency crisis frequently accompanies the real exchange rate adjustment. If, on the other hand, the current account is significantly above the norm, some relative price adjustment may also be required. Welfare costs are also present in this case, where the imbalance may be the result of “excessive” saving—e.g., forgone consumption or investment.

Development considerations are important for analyzing the dynamics and the level of the current account in RRDCs during windfalls. In a frictionless developed open economy, the famous Friedman's (1957) permanent income hypothesis (PIH) applies: the economy should save most of the windfall abroad to smooth consumption and preserve resource wealth, generating a current account surplus.⁴ However, with development considerations, saving abroad the windfall may not be the most appropriate policy. Collier et al. (2010) and van der Ploeg and Venables (2011a) argue that because of capital scarcity and external borrowing constraints, RRDCs should use windfalls to speed up development. Capital scarcity implies that the return to capital is likely to be higher than world interest rates, then investing domestically in physical and human capital ensures a much higher return than saving abroad. In addition, since resource revenues help relax borrowing constraints, RRDCs can expand the financing sources to increase development investment and front-load consumption. As a result, resource windfalls may be associated with current account deficits in RRDCs.

At first glance, empirical evidence suggests that, relative to resource-rich countries with higher income, RRDCs have faced on average lower current account balances, including deficits (Fig. 1)⁵. This raises several questions regarding development considerations: How important are investment needs, as well as investment frictions, in shaping the current account dynamics and external sustainability in RRDCs? What is the role of external borrowing constraints for this dynamics? Given these considerations, what is the appropriate current account balance for RRDCs that face a windfall?

In this paper, we take a model-based approach to address these questions. We develop a neoclassical small open economy model with capital accumulation and frictions that capture pervasive features in RRDCs, including capital scarcity, absorptive capacity constraints, inefficiencies in investment, and external borrowing constraints that can be relaxed when resources lower the country risk premium. We focus in particular on investment for development, which is mostly directed to increase physical and human capital, in order to boost non-resource GDP growth. Relative to models that only consider consumption and satisfy the PIH, we show the extent to which these features matter qualitatively and quantitatively in driving the current account. Moreover, by solving the social planner's problem, consumption and investment decisions are optimal subject to the aforementioned constraints, as is the implied current account balance. Then the model can provide a current account norm to analyze external sustainability.

We rely on numerical simulations to derive our results and underscore the role of development considerations in the determination of a current account norm for RRDCs. The main findings of our analysis are as follows.

First, absent investment frictions and capital scarcity, constraints to borrow externally imply that oil windfalls tend to lower the current account balance. In the model, borrowing constraints are captured by a country risk premium that depends on the country's external debt, as in Schmitt-Grohé and Uribe (2003). With these constraints, the windfall is used to repay debt, lowering the premium and the interest rates. This encourages consumption frontloading and stimulates public and private investment (in domestically owned capital). As a result, borrowing restrictions imply that RRDCs should register lower current

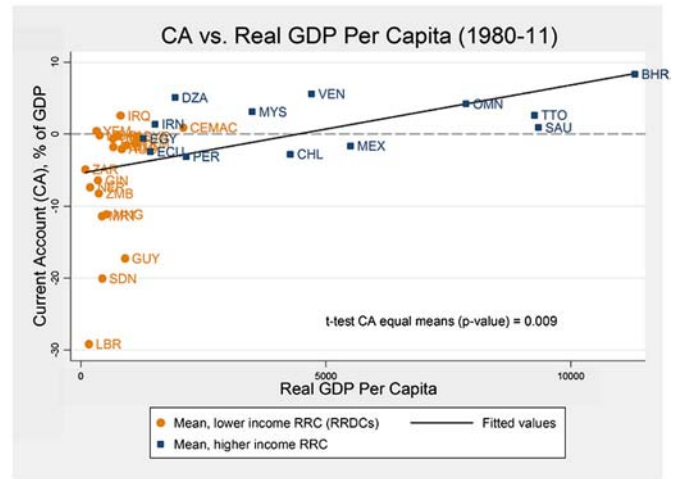


Fig. 1. Current Account Balance vs. Real GDP per Capita in Selected Resource-Rich Countries (RRCs). Following IMF (2012c), RRCs are defined as those countries whose natural resources comprise at least 20% of total exports or of natural resource revenues. The label “lower income RRCs” (“higher income RRCs”) refers to RRCs whose 2010 GNI per capita is below (above) USD 3975, according to the World Bank Atlas. RRDCs correspond to the “lower income RRCs”. The figure presents the average current account balances and real GDP per capita during the period 1980–2011.

account balances than those of an economy that can borrow freely from abroad. This effect can be magnified if the oil wealth is also assumed to reduce the premium, as in Mansoorian (1991) and Arezki and Brückner (2012). With a windfall, credit constraints are then further relaxed, and borrowing helps increase investment, inducing even current account deficits. Note that the discussed interest rate mechanism is similar to the one presented in van der Ploeg and Venables (2011a) and van der Ploeg (2012). These works, however, assume that private capital is owned by foreigners, which is not innocuous for the implications for the current account. In their models, it becomes optimal to run very large current account deficits financed by foreign investment, while the economy never accumulates domestically owned private capital.

Second, high investment inefficiencies or absorptive capacity constraints decelerate capital accumulation implying higher current account balances than those in economies without these frictions. In the model, absorptive capacity constraints are related to capital adjustment costs that increase with the investment rate; while investment inefficiencies mean that one dollar of investment translates into less than one dollar of productive capital (Pritchett, 2000). With these frictions, the windfall still leads to some front-loading of consumption—moving away from the standard PIH consumption behavior—as well as some increase in private and public investment. But since there are substantial inefficiencies and absorptive capacity constraints, it turns out to be optimal to reduce the speed of investment, which in turn pushes for higher current account balances. The relevance of investment frictions in RRDCs has been explored in previous studies, although not in the context of external sustainability. Berg et al. (2013) show, for example, that gradually investing a windfall and making non-resource revenues available to cover recurrent costs of public capital can alleviate absorptive capacity constraints, help preserve resource wealth and address concerns about growth sustainability and macrostability. In addition, Baunsgaard et al. (2012), van der Ploeg and Venables (2011b) and van der Ploeg (2012) discuss the “parking strategy” of postponing domestic spending until the economy is ready to implement efficient spending choices.

Third, we show that adverse resource shocks may call for buffer-stock savings and, therefore, current account surpluses. Although our analysis assumes perfect foresight and is silent on precautionary saving issues, we investigate the consequences of having an expected sudden drop in the price of the natural resource some years after the windfall

⁴ See, for instance, Barnett and Ossowski (2003), and Segura-Ubierno et al. (2014).

⁵ For further empirical analysis see Beidas-Strom and Cashin (2011).

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