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Chile, copper and resource revenue: A holistic approach to assessing commodity dependence



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ABSTRACT

The first decade of the new millennium has ushered in with it booming commodity prices due mainly to high growth in East Asia. Copper prices in particular have soared 80% between 2001 and 2011, causing Chile, the world's largest copper producer, to reap massive windfalls. This paper provides an assessment of Chile's commodity dependence with a focus on the manner in which current flows of mining revenue promote sustainable development. The first part of the paper suggests Chile's status as a strong commodity producer could be complemented by efforts to achieve a more balanced growth trajectory that would include expansion of domestic demand brought about by rising labor productivity and rising wages and reduced dependence on export demand and foreign savings. We believe such an achievement would greatly promote the fair transfer of resource revenue from exhaustible sources to future generations. In the second part of the paper we provide an empirical assessment of sources and the destination of revenue derived from mineral exports. We focus on usage of revenue flows to government, multinationals in the form of profits and operating expenses, and workers. Our approach is intended to provide a more holistic and meaningful assessment of Chile's commodity dependence than what is normally found in the literature. We conclude that while the Chilean government clearly has provided future generations with revenue in the form of offshore sovereign wealth funds, most private resource revenue flows offshore in the form of remittances and profits to multinationals. There is limited use of private and public funds directed at enhancing domestic demand through productive investment.

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Introduction

Today Chile is the world's largest copper producer and exporter. Together with other net-commodity-producing countries, Latin American economies are in a new phase of re-commodification and deindustrialization largely fueled by rising commodity prices that are due mainly to the rapid growth of China and other emerging market economies (Keller and Arriagada, 2014). This increase in demand for copper, soybeans, iron, gas, and other products is estimated to have nearly doubled exports of commodities from Latin America and, since 1999, have lifted approximately 56 million people into the middle class (Ruiz del Castillo, 2009).

This is good news for Chile. The country is repeatedly lauded as exemplar in managing revenues from copper mainly in transparent offshore sovereign wealth fund and in containing exchange rate appreciation. The state has been the recipient of an impressive

revenue windfall since 2004 thanks to soaring copper prices, and during this period has successfully managed the revenue surge mainly in offshore accounts (Collier and Venables, 2011; Fuentes, 2011; Henry, 2013; Gallagher and Porzecanski, 2010; Mikesell, 1997; Ruiz-Dana, 2007). In addition, with its inflation-targeting rule, Chile was able to use resource revenue to finance counter cyclical fiscal policy during the 2008 financial crisis (Carrière-Swallow and García-Silva, 2013).

Chile, since the return to democracy in 1990, has been an attractive destination for foreign direct investment (FDI) especially related to the exploration for new mineral deposits and the discovery and extraction of base metals, an attraction that has increased significantly after 2004, given the high price of copper (Fernandes and Paunov, 2012). Policy has targeted foreign investors through generous tax and royalty concession; in 2012 Chile had the lowest top corporate tax rate on mining companies in a 22-country study of mining based economies (Canada only had a slightly lower rate) (PWC, 2012). In addition the state is seeking to increase the profitability and competitiveness of the giant state-owned company, Codelco, holder of 10% of the world's copper

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reserve, through ownership shares in foreign mining companies and “other mining partnerships in geological operations both in Chile and abroad” (Keller and Arriagada, 2014). For instance the Japanese mining company, Mitsui, has recently joined the Copper Innovations Investment Fund to partnership with Codelco to find “innovative applications of copper for high value, innovative technologies for more efficient and competitive mining processes, and initiatives for the critical elements of the industry, such as water and energy” Keller and Arriagada, 2014. These and other initiatives have increased substantially the role of foreign multinational corporations (MNCs) in the extraction and export of copper and copper byproducts over the last decade.

In view of its success at attracting foreign investment in the mining sector, the compelling question is whether resource revenue, which represents an asset for future generations (Colliers and Venables, 2011), is being put to the best use. The question of best use is broad and widely defined in the literature. The first half of this paper addresses the issue of best use by emphasizing how a balanced growth economic-development strategy could complement the growth through commodity export strategy by harnessing more efficient use of non-commodity resources. In turn this strategy could potentially strengthen domestic resilience to changes in foreign demand for copper and other potentially adverse and unforeseen global economic events. The second part of this paper provides an empirical assessment of how current mining revenue is allocated among governments, multinational corporations and other private firms and workers, and in what manner revenue is utilized. The empirical section will utilize relevant literature on resource curse and the political economy of resource revenue management, global value chain analysis with attention to the firm level, and literature on external and institutional constraints associated with mining revenue management.

This paper will proceed as follows. Section “Using resource revenue for the future” provides an overview of the Chilean economy during the current commodity boom, addresses government use of revenue to ensure intergenerational equity and to mitigate Dutch disease effects, and makes a case for sustainable development via balanced growth. Section “Analysis of mining revenue flows” identifies resource flows and analyzes usage of flows using as a benchmark the attainment of growth through generation of domestic demand. Section “Conclusion” presents conclusions and suggests ways to improve allocation of copper windfalls.

Using resource revenue for the future

The issue of intergenerational equity or the sharing of wealth generated from exhaustible resources between current and future generations is an important consideration for resource rich countries when designing strategies for the management of funds. Hartwick (1997) suggests countries must avoid “the ethical problem of the current generation shortchanging future generations by over-consuming the current product, partly ascribable to current use of exhaustible resource.” The sharing of current resource wealth with future generations is often complicated by the tendency for exchange rates to over-appreciate due to conversion of dollar denominated commodity revenue into the domestic currency. This problem, commonly referred to as Dutch disease, can lead to a misallocation of domestic resources away from non-mining tradable sectors and, with a strong exchange rate, to high dependency on imported inputs and consumption goods (Corden and Neary, 1982; Bresser-Periera et al., 2011). Corruption and even well intentioned mismanagement also make sharing with future generations difficult (Sachs and Warner, 1995). In Section

“Intergenerational equity and Dutch disease” we show how Chile has been very successful in addressing these difficult aspects of revenue management.

Multiple authors (Auty, 1993; Sachs and Warner, 1995; Humphreys et al., 2007; Fuentes, 2011; Natural Resource Charter, 2014) emphasize the need for sustainable development that could potentially be achieved if commodity revenue were invested in productive assets outside of commodity sectors, in order to prepare for a future when resources run out and or commodity prices decline. Good management of commodity revenue requires that some proportion of resource revenue be invested in non-resource economic activity to diversify the economy. The purpose is to reduce dependence on the exhaustible resources today, and to reduce “vulnerabilities from exuberance and increased leverage, and the threat that an eventual withdrawal of monetary stimulus will trigger sudden capital outflows and financial distress” (Carrière-Swallow and García-Silva, 2013). Both reasons for considering sustainable growth are important for Chile given the sizable contribution of commodity export on growth and its high reliance on foreign capital.

Overall, we agree with the importance of both sustainable development and intergenerational equity, two objectives that we believe are highly intertwined. For exhaustible resources to maintain constant or rising living standards for future generations requires the conversion of some portion of current resource assets into long term productive investments unrelated to the extraction and export of commodities. In this manner future generations will benefit from a greater selection of high productivity jobs and rising income even when commodity prices fall and or reserves are depleted.

The next section provides an overview of the copper boom that has taken place since 2004 and the impact it has had on Chile's economy. In Section “Intergenerational equity and Dutch disease” we look at how the Chilean state manages mining revenue as it relates to intergenerational equity and will highlight its success in mitigating Dutch disease effects. Finally, Section “Sustainable development” addresses sustainable development in the context of the literature on balanced growth theory, an approach we believe has not been undertaken in the literature for Chile.

Copper price boom

There is every indication that Chile, an upper middle income developing economy, is thriving in its current status as a commodity producer. Since 2004 until 2011 copper prices have soared, a boom interrupted briefly in 2009 by the global financial crisis (Cochilco, 2013; see Fig. 1). The rapid escalation in the price of copper is attributed largely to rising Asian economies, especially China (Benavente et al., 2005; Bresser-Periera et al., 2011). While the price of copper has declined since 2011 it still remains high relative to pre-2004 prices. The issue of Chile's management of

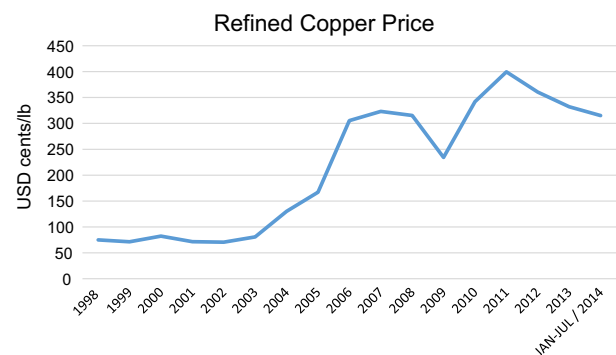


Fig. 1. Nominal refined copper price (USD c/lb).

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