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COUNTERING THE RESOURCE CURSE: A COMPARATIVE ANALYSIS OF POLITICAL ECONOMY FOR CHILE AND AUSTRALIA

by

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This thesis attempts to explain how advanced economies with large mining sectors, like those of Australia and Chile, have managed to avoid the "resource curse." Minerals (iron ore and coal) account for over two-thirds of Australia's exports, and minerals (copper) amount to over two-thirds of Chilean exports as well. Hence, Australia and Chile have been labeled as commodity-based economies in the past. There is some validity to this claim, as Chile has gained significant fiscal revenues from copper sales, and Australia has experienced a mining boom over the past two decades, coupled with the rise of China. This work examines the relationship that natural resource mining and governance has to the political economy landscape of both countries. Using a historical institutionalist lens, various trends in the political economies of both nations are examined in relation to resource curse factors, such as developmental indicators, mining-specific policy and rents therefrom, and Dutch Disease.

This thesis argues that the governments of both countries developed very different means to manage commodity market boom and bust cycles. Specifically, Chile has innovated counter-cyclical fiscal policies and copper funds, while Australia has pursued a more neutral fiscal policy with little intervention into mining by the commonwealth (until recently). The strengths and weaknesses apparent to both governments' management of their mining sectors is explained and compared against resource curse factors. Forecasting is also presented to include possible ramifications from recent changes to the political economy of both countries in light of large downward swings in commodity prices and a slowdown in China.

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COUNTERING THE RESOURCE CURSE: A COMPARATIVE ANALYSIS OF POLITICAL ECONOMY FOR CHILE AND AUSTRALIA

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I. THE RESOURCE CURSE

A. INTRODUCTION

What is the resource curse? Theorists of the resource curse draw causal relationships between explanatory variables such as natural resource wealth, regime and institutional strength, political economic structure, and international commodities markets to outcomes such as Dutch disease, inequality, economic development, and the tendency for destabilization and civil war. Detractors of the resource curse relationship see these same arguments not as causal, but as correlational—or interpret them differently, such as claiming that civil war creates demand for resources and therefore the resource curse is dependent on civil war and not the other way around.[1] Most of the research pertaining to the resource curse has been on developing countries; I propose that a comparison of a developed (Australia) and near-developed country (Chile), both with large exposure to resource commodities (mining), can add insight into the resource curse.

This thesis analyzes the independent variables of institutional quality, decision making around rents accrued, economic policy to mitigate resources, and state vs. private ownership; the possible intervening variables of market fluctuations and international crisis or change; and the relationship these factors have on the dependent variables of economic developmental factors, natural resource governance and policy, and evidence of Dutch disease. Any resource-dependent government should acknowledge that resource rents are not guaranteed, and thus employ contingency measures to exploit boom years to guard against a bust. The experiences of Chile and Australia offer insight into how resource-rich countries might be best placed to ensure their natural wealth becomes a blessing rather than a curse. The central argument of this thesis is that potential negative outcomes of the resource curse exist and impact all states. What is interesting is how even developed states may be affected by natural resource development. As we will see, Australia's mining-related governance problems and Chile's institutionalized copper

[1] Rosser, Andrew, *The Political Economy of the Resource Curse, A Literature Review,* Institute for Development Studies, April 2006, http://www2.ids.ac.uk/futurestate/pdfs/wp268.pdf.

rental schemes offer insight as to how the extraction of natural resources may become a blessing or a curse.

1. Significance of the Research Question

Much scholarly work into "the resource curse" has centered on developing nations with large deposits of oil. Michael Ross's studies, for example, have shown that oil wealth often brings about negative consequences in the terms of inequality, civil war, instability, corruption, and underdevelopment.[2] This thesis focuses not on oil; rather it investigates two resource-rich countries that appear to be "doing it right" and have developed strongly despite having some characteristics of a "resource curse" economy.

The mining sectors of Chile and Australia are huge, and represent large parts of their exports and GDP. Chile and Australia are both major trading democracies in the Pacific theatre and have abundant natural resources. Both have similar population sizes, Australia at 22.5 million and Chile at 17.5 million, and are located in the Southern hemisphere.[3] Australia's GDP for 2012 was over 5.5 times higher than that of Chile, and per capita it was about 4.5 times higher.[4] Since 2003, Australia's GDP growth rate has been around 3 percent, while Chile's annual growth rate has been closer to 6 percent.[5] Both nations have similar resource export sectors; Chilean copper amounts to more than 50 percent of Chilean exports.[6] Australia also has a mineral export sector that accounts for over 50 percent of their total exports—namely iron ore and coal.[7] China is the largest buyer of both nations' exports.

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[2] Ross, Michael, Lecture at NPS, 30 May 2014.

[3] The World Bank DataBank, Australia and Chile: "Population, Total," accessed 10 April 2015, http://data.worldbank.org/indicator/SP.POP.TOTL.

[4] The World Bank DataBank, Australia and Chile: "2013 GDP current US$, GDP Growth (Annual %), GDP Per Capita current US$, GDP Per Capita Growth (Annual %)," accessed 12 April 2015, http://databank.worldbank.org/data/views/reports/tableview.aspx#.

[5] Ibid.

[6] Observation of Economic Complexity, "Chile (CHL) Profile of Exports, Imports, and Trade Partners," Accessed 1 March 2015, http://atlas.media.mit.edu/profile/country/chl/.

[7] Observation of Economic Complexity, "Australia (AUS) Profile of Exports, Imports, and Trade Partners," Accessed 1 March 2015, http://atlas.media.mit.edu/profile/country/aus/.

Australia and Chile share a degree of controversy over their mining sectors, to include Chilean decision making for allocating rents from copper mining and strong Australian mining sector growth possibly crowding out other sectors, such as the recent demise of the Australian automotive industry. An examination of the political economic structure and policy of each country is relevant to the study of the resource curse. Developed nations usually do not become associated with resource curse characteristics, as their economies are strong and diverse enough to avoid "the curse." My aim is to add to current scholarly material on the resource curse and show that while it is more prevalent in poor, developing countries, it still affects more developed states and industries. Further study into possible resource curse evidence in strong, secure economies will also bring about the benefit of evaluating counter arguments against the resource curse, such as casual vs. correlational explanations (as explained in Section 1).

2. Literature Review

> "[M]en of a fat and fertile soil, are most commonly effeminate and cowards; whereas contrariwise a barren country makes men temperate by necessity, and by consequence careful, vigilant, and industrious."
>
> —Jean Bodin, *Six Books of Commonwealth*

The literature on the resource curse attempts to explain why resource-rich developing countries tend to fare worse in their development than resource-poor countries. At the core of the problem is the way in which states fund extraction, obtain rents, and redistribute wealth from natural resources. The problem may be self-reinforcing, as natural resources usually constitute significant revenues to developing states, and once resource rents become institutionalized the nature of these rents is very hard to change. Resource dependence may lead to a self-perpetuating cycle where the resource sector influences, and is in turn influenced by, political, social, economic, and institutional policy.[8]

[8] Barma, Naazneen H., Kai-Alexander Kaiser, Tuan Minj Le, and Lorena Vineula, *Rents to Riches? The Political Economy of Natural Resource-Led Development*, The World Bank, Washington, DC, 2011, 1.

The "resource curse" literature details the complex study of resource development issues and hypotheses concerning the causal mechanisms underpinning the resource curse come from numerous different theoretical approaches. Rosser's *Literature Survey of the Resource Curse* identifies seven categories for study: Economistic, behavioralist, rational actor, state-centered, social capital, structuralist, and radical.[9] This thesis focuses on the state-centered approach. For the purpose of this thesis, I outline below how the cognitive and societal approaches to the resource curse are integrated into the state-centered approach, and I develop the latter as the main theoretical lens orienting this thesis.

Cognitive approaches to understanding the resource curse examine whether resource rents relate to or cause corruption amongst policy makers.[10] In particular this approach examines whether there is a positive correlation between corrupt administrations and resource-dependent export sectors and how strong that connection appears to be. If evidence is found that suggests a strong connection between resource rents and corruption, such as evidence of bribes, favoritism, direct resource rent gains to administrators, then the resource rents can be labeled as prime causes of resource curse traits in said country. A problem with the cognitive approach, however, is defining and finding data for the testable variables. Without data, the cognitive approach can be overly generalized and fails to produce precise, quantifiable theory.

Societal approaches examines if a resource boom damages state policy through benefiting nonstate actors by taking rents offshore or otherwise impeding growth.[11] Societal theory uses the independent variable of resource wealth to test the dependent variable of policy outcomes, in particular those that aid nonstate actors. A problem with societal approaches is that most suggest a causal relationship between slow growth and trade barriers, yet little actual correlation supports this theory: a study by Sachs and Warner found that slow growth and trade barriers only correlate one-third of the time.[12]

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9 Rosser, *Political Economy of the Resource Curse*, 13.

10 Ross, Michael, *Political Economy of the Resource Curse*, *World Politics* 51, no. 2 (1999): 309, http://www.socialsciences.manchester.ac.uk/medialibrary/economics/pg/support/IDPM60072RossM%20(1).pdf.

11 Ross, *Political Economy of the Resource Curse*, 310.

12 Ibid., 311.

Societal claims also point to where nonstate actors have power over the developing state's resources, which is most often not the case if the resources are state owned. Resource rents should give the state a nontax source of revenue that can be used to offset negative influences from nonstate actors.

The state-centered approach that will be advanced in this thesis offers a hybrid of cognitive, societal, and institutional approaches to explain how resource rents can damage a state's growth.[13] A common state-centered theory is that of the rentier state, wherein states rely on resource rents and foreign aid for revenue instead of their population—which, in turn, reduces the states conceived notion of responsibility to its constituents and increases regime corruption and despotism.[14] State-centered research examines if resource rents cause non-beneficial economic policy.[15] Scholars such as Frieden and Page argue that the characteristics of a dominant export sector will influence a state's economic policy.[16]

The state-centered approach can be further divided into a sector-specific approach. Ross details how Shafer, in his book, *Winners and Losers: How sectors shape the developmental prospects of states*, claims that inflexible sectors cause weak institutions. Mineral sectors constitute "inflexible" exports since they comprise relatively few large firms, high entry/exit costs, and asset specificity.[17] Inflexible sectors perform poorly when presented with commodity market shocks, which may requisite heavy state intervention. If an inflexible sector constitutes a big portion of exports and brings large resource rents, then the small number of firms can place high protectoral demands on the state, as the state would be compelled to keep the source of revenue. Some have argued that dominant export sectors tend to create their own sector-favored policy. These sectors can shape state policy to suit their means, at the expense of other sectors. Unfortunately, as Ross observes, Shafer's dependent variable, "development outcomes," is left

[13] Ross, *Political Economy of the Resource Curse*, 311.

[14] Ibid., 312.

[15] Ibid., 312.

[16] Ibid., 314.

[17] Ibid., 314.

somewhat vague. Developmental factors, or outcomes, could mean many things—a country's GDP and GDP per capita are often cited, but development outcomes could also include measures of corruption, healthcare, inequality, and even sector "health" in terms of company debt, earnings, profit, etc.

This thesis analyzes specific sector performance of Chilean and Australian mining in order to understand how the identified independent variables of the resource curse affect the outcome of corporate performance and sector health. For example, the thesis compares how well Chile's public (CODELCO) and private mining companies compete, both domestically and internationally with the performance of the Australian mining sector. A great deal of sector performance can arguably be attributed to the structure of a state's political economy, and the decisions that government make in developing their natural resource sector will directly affect the strength of corporations within that sector. Hence, sector health is an important measure for understanding a state's ability to withstand the resource curse.

Shafer also argues that dominant sectors can produce specific institutions, agencies, regulations, and tax havens designed to maximize resource rents from a relative few firms. Firms from non-leading sectors may become disadvantaged due to dominant sectors receiving favorable policy preference. On a larger scale, a dominant sector that draws favoritism may lead to policy that mistakes short-term gains over long term national interests. Ross points out that Shafer's idea is sound, however he fails to properly define the variables that lead to the prescribed outcome.[18] A more complete method can be found by constructing a variable based on what Barma, Kaiser, Le, and Vinuela describe as a "rent-capture regime:" The institutional model of ownership, contracts, and fiscal regimes under which decisions pertaining to natural resources exploration, extraction, and taxation.[19] Therefore, this thesis utilizes the "rent-capture regime" concept as an independent variable and develops this variable for the Australian and Chilean cases.[20]

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[18] Ross, *Political Economy of the Resource Curse*, 318.

[19] Barma, Kaiser, Le, and Vinuela, *Rents to Riches?*, 79.

[20] Ibid., 79.

Another key element in a comparison of state political economy and resource sectors is the degree and character of state-owned vs. private-owned natural resource industry. Ross brings up three negative traits of state ownership: 1) Shocks in commodity markets that were buffered through multinational corporations (MNC's) are now felt directly 2) state-ownership of industry and rents collected tends to lead to a false sense of budget security, leading towards lapses in fiscal judgment and over-spending, and 3) government-run "parastatals" tend to be highly inefficient due to lack of competition.[21] What drives a state to nationalize vs. privatize its natural resources? Luong and Weinthal hypothesize that state leaders who have high access to natural resources and enjoy a consolidated regime base will choose to nationalize their energy sector, whereas leaders with low access to natural resources and a contested regime base will choose to privatize their energy sector.[22] The model they built accurately explained the energy development choices of several states. I will build on their study of how states initially chose to develop their natural resources by focusing on how mineral development strategies change over time, and what influences these changes.

B. THE CASES

1. Chile

If state-ownership of the natural resource industry tends to create negative effects, what explains the perseverance of Chile's state-owned CODELCO copper mining corporation, and the seemingly beneficial gains it has brought to Chile's economy? Investigating a state's resource rents and how they are used will shed light on this topic.[23] Specifically, this thesis will investigate how Chile's political economy capitalizes on the rents from CODELCO to provide or detract from social goods for Chileans.

Since the formation of CODELCO following the nationalization of copper in Chile, the Chilean economy has received significant rents from copper exports. In 2007,

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[21] Ross, Political Economy of the Resource Curse, 320.

[22] Luong, Pauline Jones, and Erika Weinthal, "Prelude to the resource curse explaining oil and gas development strategies in the Soviet successor states and beyond," *Comparative Political Studies* 34, no. 4 (2001): 367.

[23] Barma, Kaiser, Le, and Vinuela, *Rents to Riches?*, 165.

some 30 years after nationalization, CODELCO still accounted for 1/3 of total copper output and 16percent of total fiscal revenue.[24] Chile is widely recognized as a success story in the fight against a resource curse. Study into Chile's success reveals a deliberate struggle against resource curse characteristics and the insight that "fiscal discipline and quality of institutions do matter when facing commodity price windfalls."[25] .

Even those that think the resource curse is a myth find a connection between natural resources and development; they simply reverse the equation—instead of over-development of natural resource sectors having adverse effect on development, *under-development* of natural resource sectors causes adverse effects. As Wright and Czelusta argue in "Myth of the Resource Curse," Chile's initial slow development of its copper sector caused it to lag behind that of the US, even though Chile enjoyed higher endowments of copper.[26] It was not until protectionism eroded and technology improved in Chile that copper exports improved.

2. Australia

Australia presents another case study of early policy inhibiting the development of natural resources, thus hindering economic growth. For many reasons, Australia underdeveloped its mineral sector—mostly due to the small population failing to asses and access its resources combined with protectionist and insular policies. Wright and Czelusta found that once Australia lifted the protectionist resource policy in the 1950s and 1960s, the mineral sector growth took off and so did GDP.[27] Ironically, what they claim detracts from the resource curse actually adds another avenue to research—namely, the policies states have followed that affected resource development. If the use or *underuse* of resources affects growth, then one could argue that the resource curse applies. This is another aspect of the resource curse due to protectionist policy causing

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[24] Fuentes, J. Rodrigo, "Managing Natural Resources Revenue, The Case of Chile*" (*OxCarre Research Paper 40, Oxford University), 2, http://www.oxcarre.ox.ac.uk/images/stories/papers/RevenueWatch/oxcarrerp201040.pdf.

[25] Fuentes, "Managing Natural Resources Revenue, Chile," 3.

[26] Wright, Gavin, and Jesse Czelusta, "Why economies slow: the myth of the resource curse." *Challenge* 47, no. 2 (2004): 14, http://web.stanford.edu/~write/papers/Wright%20Res%20Curse.pdf.

[27] Ibid., 18.

underdevelopment of resource sectors, and in turn missed access to rents, which impeded growth. What is implied here is that protectionist policy impedes growth, or that growth in the resource sector corresponds with growth in the overall economy. This thesis further examines these cases to see what correlation exists.

C. POTENTIAL EXPLANATIONS AND HYPOTHESES

The goal of this thesis is to study how states make political economy decisions about resource rents based on external and internal factors. The aim is not to prove the existence of a resource curse; rather it is to examine the quality of institutions in regards to the mining sectors of Chile and Australia in order to understand the extent to which they have successfully avoided certain elements of the resource curse and yet still fall prey to others, such as Dutch Disease.

The central hypothesis of this thesis is that the explanatory factors of resource wealth and rents, regime and institutional strength, and exposure to market shocks carry a causal relationship to outcomes of economic development, inequality, and Dutch disease. In turn, the particular way in which states implement economic and natural resource management policies directly shape their vulnerability to the resource curse or, conversely, their ability to reap benefits from their resource sectors. The basic argument is as follows: a state's "rent capture regime" affects its ability to manage its natural resource wealth for strong sector health/performance and good development outcomes, in the face of exogenous shocks such as commodity price fluctuation. This hypothesis consists of two parts: 1) states that rely on their natural resources for the dominant portion of their exports will be more prone to resource curse factors, and 2) secondarily, states will adapt their mineral development strategies in accordance with domestic influences; specifically, governments will pursue nationalization or privatization of resources based on what they perceive will consolidate their regime's base of power. Of course, a key variable will be the type of government in place. Perhaps consolidated democracies, such as Australia, will be not as prone to a regime taking utilitarian steps in controlling the mineral sector than an arguably more volatile democracy like Chile. Chile underwent a socialist revolution that resulted in military dictatorship and great economic

policy change, which will be a key factor in studying the development of Chile vs. Australia's mineral sector and economy.

Both Chile and Australia display inflexible mining sectors. Relatively few firms control most natural resources and the state has built specific institutions to govern these industries. Australia promotes a privatized mining sector, whereas Chile has a large nationalized mining company—this is a major difference between the two countries and as the body of this thesis explains is a key explanatory variable for each country's resource curse equation. Neoliberalism argues that planned economy and nationalized industry is inherently inefficient versus privatization and a market-liberal economic approach. This thesis somewhat refutes that claim, through the case of Chile. Mining sector-specific policy and taxation also carry an indirect impact on the overall economy if they give incentives to the mining sector over other sectors. The mining sector will have a beneficial political and economic effect if rents are used toward public goods, do not squeeze out other sectors, adversely affect exchange rates, or fall prey to corruption and waste. Chile manages its copper industry and national interests through its rent-capture regime—the institution of copper ownership, contracts, and fiscal regimes under which decisions pertaining to copper exploration, extraction, and taxation.[28]

1. Resource Curse Factors: Economic Development, Weak Institutions, Rent Seeking, and Dutch Disease

The resource curse dependent variables listed above are examined for both Chile and Australia. Economic development is viewed in terms of GDP growth over time and mining contributions to GDP over time. The governmental institutions and rent capture regimes are examined via the state-centered institutionalist approach and specific frameworks, such as the World Bank's natural resource value chain framework. The body of this thesis also explores cases of rent-seeking and corrupt behavior surrounding mining, plus the economic effects of this behavior. Another dependent variable to explore is Dutch disease, which is further explained below.

[28] Barma, Kaiser, Le, and Vinuela, *Rents to Riches?*, 79.

What economists usually coin Dutch Disease occurs when a commodity boom sends one (or related) sectors skyrocketing, but crowds out other sectors through high wages in the dominant sector and a rising real exchange rate. While the booming sector does reap record revenues, there are some negatives: other tradable goods are hurt as they become more expensive on the global scale, and other domestic sectors lose out to the dominant sector in terms of salaries and capital flow.[29] The result may be increasing fiscal deficits and ever-greater reliance on the hot commodity for revenues. It is called Dutch disease because the Netherlands underwent a de-industrialization period following the discovery and development of natural gas fields in 1959.[30] The same appears to be occurring in Australia.

Some Australians claim, for example, that "the mining sector has crowded out almost all other sectors of the economy and also funneled credit and liquidity into a housing bubble in the real estate sector."[31] This thesis will examine the effects of Dutch Disease on the Australian and Chilean economies by looking for evidence of crowding out of other sectors and the impact of exchange rate appreciation due to commodity booms.

2. Research Design

This thesis is based upon a case-comparative analysis of the Chilean and Australian mining sectors, how the two governments conduct economic and natural resource management policy, and the effect of natural resources on the overall political economy of each country. The overall goal is to understand, through this comparative analysis, how resource-rich countries might be best placed to ensure their natural wealth becomes a blessing rather than a curse.

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[29] Planchette, Paulette, *World Trade Report 2010: Trade in Natural Resources*, World Trade Organization, 91, http://www.wto.org/english/res_e/booksp_e/anrep_e/world_trade_report10_e.pdf.

[30] "The Dutch Disease," *The Economist*, November 26, 1977, 83.

[31] Martin, Peter, "Warning: After Boom it'll be Dutch and go," *Sydney Morning Herald Business Day*, from *Australia: The Unlucky Country*, report by Variant Perception, August 30, 2012, http://www.smh.com.au/business/warning-after-boom-itll-be-dutch-and-go-20120829-2510q.html#ixzz3Ayz6Cems.

In turn, this project examines inter-related questions such as: What comparative advantage does one mining sector have over the other? What effect does the mining sector in each country have on their overall economy? What political economic strategy and structure does each nation take towards their mining sector?

This thesis explores how the rent capture regimes in Chile and Australia have affected the ability of these two countries to manage their natural resource wealth over the past four decades since the 1973 oil crisis. For resource base I use World Trade Organization data, such as the World Trade Reports on Resources. In order to capture the rent capture regime in each country, my primary sources are the Australian and Chilean governments pertaining to their resource management policies. I measure developmental outcomes based on the availability and cost estimates for public goods provided from resource rents and taxes as a percentage of GDP. GDP data is sourced from The World Bank. Commodity prices are sourced from the World Trade Organization.

For evidence of Dutch disease I test mineral profits and wages vs. that of other sectors and the impact upon currency exchange rates of each state. Inequality and development figures come from the World Bank's GINI coefficient data, GDP, GDP growth rate, and GDP per capita. Destabilization and conflict are studied via historical third party data. Sector health compares Leading Corporation's balance sheet in each state's mineral sector and evaluates them in terms of corporate debt, revenue, profit, outlook, capital, size, and tax structure.

3. Thesis Overview

This thesis asks if resource dependence is necessarily negative, and points out characteristics of two resource-rich economies that perform well despite having some resource dependency. After introducing this question, a review of scholarly material for and against the resource curse is conducted with the aim to show that institutions matter. Following the literature review and arguments supporting that resource curse characteristics depend on institutions, there will be a chapter each dedicated to the comparative case studies of Chile and Australia's mining sectors. The thesis concludes

with a brief summary of findings, and verification of the hypothesis while recognizing contrary claims.

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II. CHILE CASE STUDY

A. CHILE AND THE RESOURCE CURSE

Given that Chile depends on copper sales for part of its fiscal revenue, and that resource rents in Chile have been high, one would expect Chile to have a safety blanket against recession. Yet, Chile's economy experienced severe recessions in 1975 and 1982, followed by less severe recessions in 1999 and 2009.[32] Figure 1 illustrates a core question orienting this chapter: how are recession and mineral rents related?

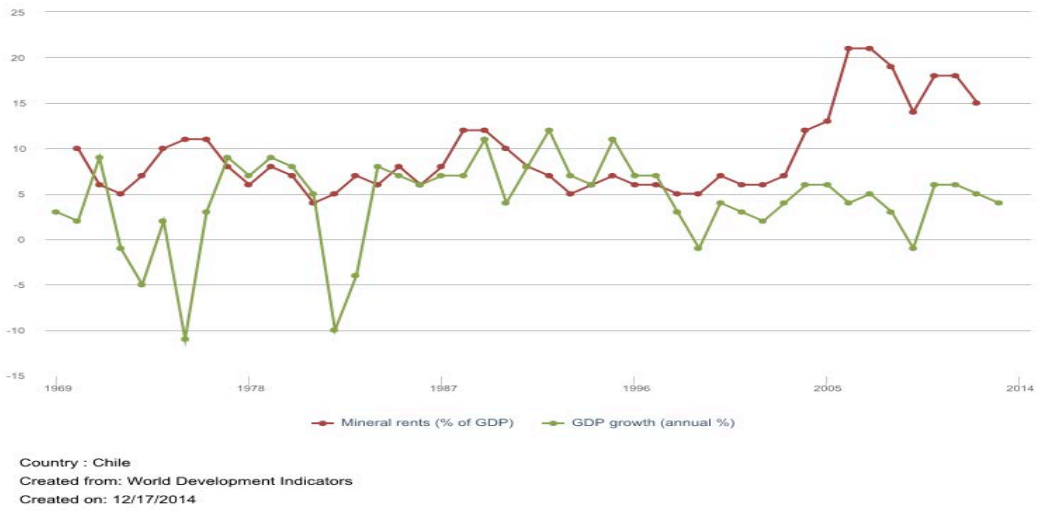

Figure 1. Chile Mineral Rents vs. GDP Growth 1970–2013[33]

Of all Latin American countries, Chile is among the most economically developed and has a reputation for government institutional strength compared to that of her neighbors. Chileans' enjoy the highest GDP per Capita ($USD 21,911 in 2013 per World Bank Development Indicators) in the region, have the highest rated sovereign bond in

[32] The World Bank, World Development Indicators, mineral rents (%GDP) and GDP Growth (Annual %), Chile 1969–2013, accessed 1 May 2015, http://data.worldbank.org/products/wdi.

[33] The Worldbank Databank, "Mineral rents (% of GDP), GDP growth (Annual %) Chile, 1969–2014," accessed 1 May 2015.

South America, have joined the OECD, and are a regional and international powerhouse in terms of trade, having signed 22 trade agreements with 60 countries.[34] Chile is also the world's largest exporter of copper. Over half of Chile's exports come from copper mining or are related to it.[35] A significant portion of this export wealth is taxed or collected as royalties and forms a large fiscal windfall for the state. In the last decade, at least 18 percent of Chile's fiscal revenue came from mining, and fiscal revenues gained were over 25 percent during the years 2005–2010, when commodity prices were highest.[36] Does the significant portion of copper exports expose Chile to unfavorable economic outcomes? What happens if the price of copper declines rapidly? How does Chile guard against the resource curse?

This chapter explores Chile's mining sector and the intervening effects that Chile's political economic institutions have on economic outcomes related to the mining sector. The findings support that Chile has developed multiple tools to guard against resource curse factors, such as copper funds and counter-cyclical fiscal policy. However, Chile faces several social challenges as its population demands more public spending from copper revenues. If hasty and near-sighted copper-revenue-related reforms take place, then resource curse factors are likely to rise. Section B contains a brief review of the resource curse, and centers on the method and framework for this chapter. Section C explores Chile's political economic history from copper nationalization to privatization and examines case studies of multiple boom/bust cycles that led to the creation of counter-cyclical fiscal policy and the copper funds in Chile. Section D delivers forecasts and concluding remarks.

34 *The CIA World Factbook: Chile*, https://www.cia.gov/library/publications/the-world-factbook/geos/ci.html.

35 Ibid.

36 Orihuela, José Carlos, *How Do "Mineral-States" Learn? Path-Dependence, Networks, and Policy Change in the Development of Economic Institutions*. 2013, World Development 43: 144.

B. APPROACH AND FRAMEWORK

1. State-Oriented Institutional Approach

The first chapter of this thesis posits that the methods in which states explores for, develop, extract, govern, and distribute rents from natural resources determines their susceptibility to resource curse factors. Now we will turn the state-centered (historical and societal) lens to the institutions of Chile to discern how Chile manages natural resources and the resource curse. As explained, the state-centered approach is a hybrid of historical and societal institutionalism that can help explain how resource rents may actually damage a state's growth.[37] Historical institutionalism focuses on trends of consistent behavior over time, or "punctuated equilibrium," until a critical juncture occurs enabling a fundamental shift away from old norms and establishes new ones.[38] Societal approaches of the resource curse examine if a resource boom damages state policy through benefiting nonstate actors by taking rents offshore or otherwise impeding growth.[39] The state-centered hybrid approach, then, uses societal changes over time to evaluate institutions and explain change.

This state-centered institutionalism approach is used to examine Chile's rentier state—or lack thereof. We will examine if Chile's cooper revenues appear to influence the state to act not out of care for its taxpaying citizens, but instead for interests to control the mining rentier mechanism. Adopting a state-centered approach is apt for Chile as the state is relatively strong and centralized for Latin American standards, and the dominant export sector (copper) plays a big part in the state's finances. Scholars such as Frieden and Page noted that the characteristics of a dominant export sector will influence a state's economic policy; this may seem intuitive but it is not that simple.[40] Elements of causal resource curse outcomes also apply to the equation of Chile's institutional response to mining. Namely, the fact that copper is the dominant export does not fully explain why

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37 Ross, *Political Economy of the Resource Curse*., 311.

38 Orihuela, *How do Mineral States Learn?*, 140.

39 Ross, *Political Economy of the Resource Curse*, 310.

40 Ibid., 313.

Chile developed copper funds and counter-cyclical fiscal policy: analysis of the path to these institutional developments is in section C.

Dividing the state-centered approach into a sector-specific state-centered approach gives further insight into government decision making frameworks that shape Chile's copper sector, and how Chile's copper sector in turn shapes government. Some argue that inflexible sectors, such as mining, cause weak institutions.[41] Mineral sectors constitute inflexible exports since they comprise relatively few large firms, high entry/ exit costs, and asset specificity.[42] In evaluating this claim I found more causal linkage to poor economic performance resonating from poor governance than from problems within the mining sector itself. Specifically, the manner of how rents are used in government revenue streams has been of particular importance to Chile. My specific framework for the body of the thesis is explained below.

2. Value-Chain Framework

This chapter on Chile draws from the World Bank's Natural Resource Management Value Chain Framework to evaluate the susceptibility of Chile's economy to resource curse pitfalls from copper sales.[43] The value chain framework has four parts, and begins with examining how contracts are awarded and how the copper sector is organized. Next is the evaluation of copper regulations and monitoring of operations. Examined next is the complex collection and distribution of taxes and royalties from copper mining. Finally, assessed is how the government uses the revenues from copper rents, both in management and distribution.

C. DEVELOPMENT OF TOOLS AGAINST THE RESOURCE CURSE

1. Politicization of Copper Nationalization

The politicization of mineral sectors within Latin America has been at the center of contemporary political economy, and represents "arguably the most profound regional

41 Ross, *Political Economy of the Resource Curse*, 314.

42 Ibid., 314.

43 Barma, *Petroleum, Governance, and Fragility*, 337.

policy shifts of the past decade."[44] Much of Latin America experienced a post-neoliberalism movement that emphasized re-nationalization of natural resources, in order to provide funding for increased social welfare programs, move away from multi-national-corporation big business, and lessen dependency on international finance institutions.[45] Countries such as Venezuela, Argentina, Bolivia, and even Brazil embarked on this post-neoliberal, socialistic path. However, not all Latin American states followed suit. In the late 1980s, Chile actually increased its resource privatization path, a step in the opposite direction from most of Latin America. Why did Chile's government choose not to follow their neighbors and embrace post-neoliberalism? Post-Pinochet Chile represents a good case trial for examining the interactions between political economic institutions, state capacity, and natural resources as they relate to economic outcomes. A path dependent argument sheds light into why the Chilean copper industry was nationalized, and then moved back towards, but never completely, privatized.

State ownership of the Chilean mining sector began in the early 1970s after the nationalization of copper and the creation of CODELCO (Chile's state owned copper industry conglomerate).[46] The government of Frei Montalva reformed land ownership and nationalized Chile's copper industry in 1970 in an attempt to curb inflation and address social issues. Strong interests in Chile and the West opposed this move, and steps were taken to dispose of Frei's successor, Salvador Allende and the socialists in Chile. The subsequent military dictatorship of Augusto Pinochet ushered in a decidedly capitalist agenda of neoliberal development following the so-called "Washington Consensus."

The Washington Consensus categorically pursued free-markets and set the foundation for neoliberal economics in Chile. Institutions were built around laissez-faire, liberal-market economics, which is still prevalent today. Pinochet recruited several Chilean students from the University of Chicago (The "Chicago Boys") who were Milton

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[44] Hogenboom, Barbara. "Depoliticized and Repoliticized Minerals in Latin America." *Journal of Developing Societies* 28, no. 2 (2012): 134.

[45] Ibid., 148–9.

[46] Ibid., 136.

Friedman disciples to implement the necessary changes. Socialist import-subsidized industrialization and structuralist policy was removed and trade barriers were torn down. Social security and the majority of state-led firms were privatized, and a central bank was created to control interest and exchange rates.[47] Pinochet aggressively pursued the neoliberal agenda, yet decided not to reverse the Allende-era nationalization of the mining industry.

Pinochet's decision not to privatize the mines may appear anti-neoliberal, but it is in line with what scholars would expect given the circumstances. Luong and Weinthal's *Prelude to the Resource Curse* hypothesizes that state leaders who have high access to natural resources and enjoy a consolidated regime base will choose to nationalize their energy sector, whereas leaders with low access to natural resources and a contested regime base will choose to privatize their energy sector.[48] Pinochet was the only show in town and he had easy access to the mining sector; it was already nationalized. Thus, it's not surprising he did not pursue re-privatization for the mines. Luong and Weinthal's model accurately explained the energy development choices of several states, and also explains why Pinochet did not privatize the mining sector: in so doing he consolidated a source of strategic power for himself and the military government. It was the military government that unified the nationalized copper sector into the CODELCO corporation, and also legislated the so-called "copper law" that guaranteed 10 percent of all CODELCO export revenue went to the Armed Forces.[49] Such a consolidated grip on a dominant export base makes experiencing the resource curse more likely. Examining Chile's copper institutions and political economy using a value-chain framework allows further analysis into resource curse factors.

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[47] Muñoz, Heraldo, "Is Agusto Pinochet Responsible for Chile's success?" *Washington Post*, September 12, 2013, http://www.washingtonpost.com/opinions/heraldo-mun-oz-is-augusto-pinochet-responsible-for-chiles-success/2013/09/12/5d53ded8-1737-11e3-be6e-dc6ae8a5b3a8_story.html, accessed June 11, 2014.

[48] Luong and Weinthal, *Prelude to the Resource Curse*, 367.

[49] Matei and Robledo, *Democratic Civilian Control and Military Effectiveness—Chile*, 284.

2. Economic History and Evolution of Counter-Cyclical Fiscal Policy

Neoliberalism was supposed to kick start growth, but unfortunately the military dictatorship's neoliberal model was plagued with crony-based political networks of patronage and political maneuvering between business elites and policy makers.[50] This system perpetuated an elitist self-reinforcing institutional malady, which was prone to resource curse factors of resource mismanagement, as became evident in the coming debt crisis.

By 1980, neoliberalism's extreme deregulation had in effect removed any protection against market fluctuations and indebted the state. The laissez-faire experiment ended with a huge slide, as Chile's economy fell by almost 15percent.[51] Commonly known as the Latin American debt crisis, the 1982 recession kicked off a severe decline, and Chile suffered a 10.3 percent drop in GDP growth that year alone.[52] The crisis enabled a set of actions that historical institutionalists would call a critical juncture in the management of Chile's political economy and resource rent capture regime.[53]

The reforms that came about from the debt crisis affected both the political economy of the state and mining sector institutions and governance. Changes to the value chain were significant. Not only did the resource sector become reorganized through a modernization program of CODELCO in order to attract foreign direct investment, but the regulations on taxation and revenue distribution were changed as well.[54] The IMF and World Bank worked with Chile to develop the 1986 Copper Rent Compensation Fund (CRCF), which enabled Chile to save around two percent of GDP for fiscal emergencies.[55] The result of CRCF was a fundamental shift in the way Chile managed

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[50] Cypher, James M, "The Political Economy of the Chilean State in the Neoliberal Era: 1973–2005." *Canadian Journal of Development Studies/Revue canadienne d'études du développement* 26, no. 4 (2005): 767.

[51] French-Davis, Ricardo, *Economic reforms in Chile: From dictatorship to democracy*, University of Michigan Press, 2002, 13.

[52] Orihuela, *How do Mineral States Learn?* 143.

[53] Ibid., 143.

[54] Fuentes, *Managing Natural Resources Revenue: The Case of Chile*, 19.

[55] Orihuela, *How do Mineral States Learn?,* 144.

copper revenues, and enabled fiscal responsibility by putting limits on boom spending by changing copper revenues from state spending accounts into state savings accounts. One could argue that the debt crisis contributed to the removal of the military dictatorship, as Pinochet lost the plebiscite not long after. However, his neoliberal economic legacy would remain.

The post-Pinochet Concertación government regimes attempted to reform the Chilean economy where possible. Their eventual efforts fixed the Chilean economic system by providing safety nets against external shocks, expanded free trade agreements, lowered tariffs, gained access to bigger markets for Chilean exports, fueled export-led development, and established systems to attract more foreign investment.[56] However, it would take a few more resource curse-linked recessions to motivate the state to change fiscal policy.

One example comes from when Chile experienced recession again during the Asia/Russia crisis of 1998.[57] The fallout in copper prices from Asia's drop-off in demand was exacerbated by Russia's currency crisis. Chile's continued exposure to market shocks is evident that resource curse factors of boom/bust fiscal mismanagement had persisted, even with CRCF in effect. Chile's central bank responded to the crisis by raising interest rates and selling close to 3BN US$ in reserves on the foreign exchange market in order to keep the currency stable.[58] These actions were taken to stymie capital fleeing the country, as had occurred in the Latin American debt crisis. Nonetheless, businesses, banks, and even some of the public sector did move their assets to safer currencies (although much less capital flight occurred than in 1982), displaying that Chile still needed a solution to boom/bust cycles in commodity markets.

That solution came in the form of new countercyclical fiscal policy to guard against downturns by further restricting the fiscal spending ability of the government in good times and reshaping the copper management institutions again. In 2000, President

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56 Meyer, Chile CRS Report, 9.

57 Caballero, Cowan, and Kearns, *Fear of Sudden Stops: Lessons from Australia and Chile,* 3.

58 Ibid., 4.

Lagos and finance minister Eyzaguirre were instrumental in voluntarily adopting countercyclical fiscal policy that limited spending on new programs to one percent of potential GDP.[59] Chile's countercyclical fiscal rule uses extensive forecasting to account for what future copper prices might bring in terms of future state revenues, by forecasting potential and medium-term copper prices to estimate future fiscal balances.[60] The copper funds of 2006 were enacted as part of the Fiscal Responsibilities Law to further restrict fiscal spending after it became apparent that copper prices were on the rise.[61] Chile's current copper funds grew out of a 2006 reform bill that created the Fiscal Responsibility Law. The goal was to ensure no future government let into temptation and over-spent copper revenues in a booming market. This law took the old Copper Stabilization Fund (CSF) and replaced it with a broader sovereign-wealth-specific Economic and Social Stabilization Fund (ESSF) and created a new Pension Reserve Fund (PRF) plus reinforced the structural balance counter-cyclical fiscal rule with more robust legal framework and set explicit formal mechanism for financing the central bank.[62] Modeled after similar Norwegian funds, Chile's copper funds made legally binding a one percent structural surplus and were instrumental in keeping Chile's economy relatively unscathed during the global financial crisis of 2008.[63] These fiscal regulations and copper funds have been advanced as a cornerstone of Chile's new reputation for robust governmental and financial institutions.

What results have the copper funds brought Chile? From a revenue management perspective, the funds have been instrumental in keeping Chile out of recession. Although Chile did experience negative one percent growth in 2008 due to the global financial crisis (Table 1), it was able to tap into the copper funds for emergency spending that negated a larger crisis. This fund was also drawn from to support rebuilding efforts in the

59 Orihuela, *How do Mineral States Learn?* 143.

60 Ibid., 143.

61 Ibid., 144.

62 Korinek, Jane, *Mineral resource policies for growth and development: good practice examples*, OECD, http://www.oecd.org/tad/events/Chapter%207_Final.pdf, 14.

63 Ibid., 144.

wake of a large earthquake in 2010.[64] The rainy day fund remains an important fiscal tool Chile has to stave off the resource curse.

Chile's fiscal management has also become much more robust because of the funds, and both transparency and stability have increased over time. Important reforms to the taxation and revenue management powers of the government helped to stabilize the Chilean economy against the boom/bust cycles of the past.

D. RECENT DEVELOPMENTS AND FORECASTS

This chapter employed a state-sector institutional approach combined with a value chain framework to analyze the evolution of Chile's resource rent institution in order to explore causal factors of the resource curse. Chile represents a good case study for what specific policy developing nations can build into their fiscal and resource rent institutions in order to minimize negative resource curse factors.

If, as this chapter explains, Chile has come a long way in consolidating its copper rentier state institutions; what challenges remain? One must remember that Chile's re-democratization was relatively recent, and there are still problems associated with the old regime. The 2011 student protests in Chile illuminated grievances dating back to the military dictatorship. Initially, the protests were against the rising cost of private education in Chile. However, they soon blossomed into a sizeable social movement for change on many levels. Quiet, progressive Chile was racked with protests not seen since the dictatorship days. In June and July of 2011 a somewhat shocked world watched as hundreds of thousands of Chilean students and citizens mobilized and marched through the streets.[65] The social movement in Chile expanded as the students and others found more fuel for their cause in underlying problems with the state. The Chilean Winter movement expanded from education reform to include larger state-centric problems with inequality (Chile's GINI coefficient, at .51, is the worst in the OECD, according to the World Bank Databank) and perceived problems with Chile's neoliberal structural roots.

[64] Meyer, Chile CRS report, 10.

[65] Scorpio, "What Caused the Chilean Winter?," 2.

Further research into the structural legacy from Pinochet's regime could unfold specific problems that contribute to Chile's socioeconomic problems.

A further paradigm in the socioeconomic mix is the future of military spending. At the creation of CODELCO the military dictatorship enacted legislation so that, by law, 10 percent of all state-owned CODELCO gross revenue would go to the armed forces.[66] The so-called "copper law" guaranteed a high military budget through an opaque rent-gathering mechanism. This allocation mechanism is not subject to parliamentary oversight nor is it subject to transparency laws that apply to the public sector.[67] The copper law, then, represents a resource curse factor of rent seeking that the military dictatorship utilized to control and perpetuate rents from the copper sector. Some argue that the reason the copper law has perpetuated for so long is CODELCO itself: "The explanation for [CODELCO's] survival under neoliberalism is that 10 percent of its sales go directly to the coffers of the military under the *Ley Reservada del Cobra.*"[68] This claim does fall in line with resource curse theory in that rent-seeking institutions tend to perpetuate themselves. Both the military and CODELCO could feed off each other as CODELCO would gain a powerful ally in state affairs (at least initially) and the military would gain funding without oversight.

From a developmental point of view, the copper law needs to be changed because it hurts the state by damaging institutions through promoting cronyism, rent-seeking behavior, and corrupt practices. Or, as one article says, "Until the [copper] fund is fully under parliamentary oversight, opposition critics say, Chile cannot call itself a true democracy."[69] The current administration has attempted to scrap the copper law, and the

66 Matei and Robledo, *Democratic Civilian Control and Military Effectiveness—Chile*, 284.

67 Solimano, Andrés, *Chile and the neoliberal trap: the post-Pinochet era*, Cambridge University Press, 2012.

68 Haarstad, Håvard, ed, *New political spaces in Latin American natural resource governance*. Palgrave Macmillan, 2012, 111.

69 Haarstad, *New political spaces in Latin American natural resource governance*, 111.

lower house voted unanimously to do just that on June 16th, 2012.[70] As of yet, it is unclear where the legislative process is in rescinding this law.

As far as the resource curse is concerned, Chile's past presents a good example for developing states to study in order to avoid resource curse pitfalls, particularly fiscal policy tools to guard against market shocks. Yet each state must take into account their own culture and context; there is no one size fits all solution to growth and other socioeconomic problems. For Chile, the evolution of state institutions around copper rents has created a mechanism that enabled stability by having funds made available for a rainy day. However, as the recent protests demonstrate there are public pressures upon the Chilean government to increase spending from the copper funds in order to improve education, lower inequality, and increase social goods. From a resource curse perspective, the pressure to spend today may result in problems tomorrow.

[70] Sadurni, Sumy, 'Chilean Lower House Votes Unanimously to end "Copper Law"that finances the military,' *The Santiago Times*, 16 June 2014, http://en.mercopress.com/2012/06/16/chilean-lower-house-votes-unanimously-to-end-copper-law-that-finances-the-military.

III. AUSTRALIA CASE STUDY

A. AUSTRALIA AND THE RESOURCE CURSE

Australia does not jump out as an obviously resource-dependent country. It is a developed country that has followed an evolution away from mineral dependence and mining currently adds only 7 percent to GDP.[71] Mining does play an interesting role in Australia's contemporary political economy, however, because rents from the mining sector increased 700 percent in the past decade. Figure 2 illustrates this trend by mapping the share of mining rents in GDP since 1971.

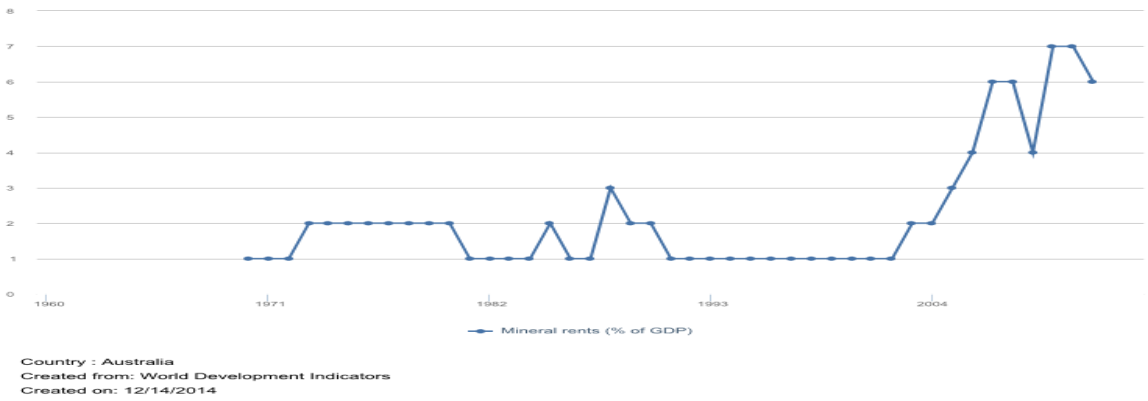

Figure 2. Australia Mineral Rents as a Percent of GDP 1971–2013[72]

This chapter examines the Australian economy for evidence of causal resource curse factors leading to undesirable economic outcomes. Australia's economic exposure to the resource curse is examined by analyzing key developmental factors of institutional quality and its resource rent capture scheme together with intervening variables of market fluctuations and exchange rates to help explain dependent variables of economic development and Dutch disease. There are three parts to this chapter: 1) Developmental

[71] The Worldbank Databank, "Mineral rents (% of GDP)," Australia, 1971–2013.

[72] Ibid.

factors of institutional quality, economic management, and resource rents; 2) Australian Reserve Bank monetary policy in regards to market shocks and responses through exchange rates and currency derivatives; and 3) Resource curse factors of Dutch disease and implications for the Australian economy from the current mining boom.

The mining sector in Australia is significantly large in terms of foreign and domestic investment, wages, output, and share of exports. Australia presents a good case for examining a developed country with a large mining sector that dominates exports. The goal of this chapter is to present historical, societal, and current examples about how countries can develop their resource sectors in order to avoid negative cyclical factors from commodity market swings, and give insight into how even developed countries must take heed of resource curse factors that can affect their overall economy. Many scholarly works have produced evidence that countries dependent on limited resources versus those that have diversified will be worse off economically in the long term.[73] If not carefully managed, Australia could suffer negative consequences from the current mining boom—particularly now as the mining industry shifts from investment to full-scale production.

Australia has the world's largest economic resources of brown coal, mineral sands, nickel, silver, uranium, zinc and lead. It is the second-highest holder of bauxite, copper, gold, iron ore, niobium, tantalum, and manganese ore.[74] Australia has made good use of its resource base; the mineral sector accounts for over 50 percent of total exports—namely iron ore and coal.[75] The recent mining boom has caused much controversy within Australia, and this thesis explores large facets of the Australian economy to see how the mining boom affects the current structure of the Australian economy.

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[73] Gelb, Alan, "Economic Diversification in Resource Rich Countries," IMF 2010, http://www.imf.org/external/np/seminars/eng/2010/afrfin/pdf/gelb2.pdf.

[74] Geoscience Australia, Australia's Identified Mineral Resources 2012, http://www.ga.gov.au/data-pubs/data-and-publications-search/publications/aimr/execuite-summary.

[75] "Learn more about trade in Australia," Observatory of Economic Complexity, http://atlas.media.mit.edu/profile/country/aus/.

B. AUSTRALIAN DEVELOPMENTAL FACTORS AND THE RESOURCE CURSE

1. Institutional Quality

Of interest are the political agenda and policy decisions that impacted the economy; hence this section explores the history of Australia's governmental mining policy. In particular, the structure and output of institutions matter. By institutions I mean the mining sector and its health/competitiveness vs. other international mining sectors; the government and its policy towards the mining sector; transparency in terms of resource rents; and fiscal policy combined with the preferences of leaders. Also examined is mining sector's effects upon exchange rates, non-mining sectors, and the overall economy. The quality of institutions depends on the scope and point of view. For understanding the evolution of the Australian mining institution, one must take into account both sociological and historical institutionalism. The new institutionalism is an apt framework from which to build such a perspective.

Historical institutionalism focuses on trends of consistent behavior over time, or "punctuated equilibrium," until a critical juncture occurs that enables a fundamental shift away from old ways and establishes new norms.[76] Sociological institutionalism takes a more nuanced approach, and attempts to explain institutional preference through contextual societal changes that affect the evolution of the state. As opposed to rational choice institutionalism, sociological institutionalism explains that certain social structures may create norms through diffusion, imitation, or coercion rather than by rational choices of political elites.[77]

Another factor to consider for institutional character is path dependence. The manner in which the state, financial, and mining institution was founded and evolved matters significantly. Path dependence can help to explain certain trends and strengths, such as Australia's relative economic "head start" due to the fact that its economy and

[76] Orihuela, *How do Mineral States Learn?*,140.

[77] Ibid., 141.

government were modeled on those of the UK. Early Australia not only benefited from a very robust trade partner in the UK, but also was able to adopt their stable bi-cameral parliamentary system with an independent judiciary and hence build a strong state. This framework and strong governance policy enabled Australia to develop sound legal, banking, financial, and labor sectors required for sustained growth.[78] The country also enjoyed easy access to London's capital markets that allowed for favorable borrowing at low interest and long maturities.[79] Australia's early history as a commodity powerhouse is similar to Argentina's—prior to the 1890s recession Australian GDP per capita was around 40 percent higher than that of the US.[80] However, multiple shocks in commodity markets plagued Australia's economy in the twentieth century, and it took a long time to learn from these booms and busts.

The final factor explaining institutional quality is choice. Historical and sociological context and path dependence only situate a possible policy agenda; they do not outright determine choice. Institutional choice here is explained through the preference of political elites, their agenda, and their analysis of economic issues. The recent political turmoil in Australia is a good example of political elites' choices that affected overall governance negatively. Australia's once optimistic outlook has been overshadowed by poor leadership choices from the Australian Labor Party (ALP). Policy errors by the ALP created many governance problems within Australia, chiefly those related to mining governance and taxation. Two attempted and failed mineral taxation schemes lay at the center of Australia's recent governance problem—the Resource Super Profit Tax and its replacement the Mineral Resource Rent Tax. Both of these taxation schemes, the controversy therein, and their relationship to resource curse factors are discussed in a future section. Both taxation schemes are attempts by the Australian federal government to gain access to increased rents from mining, and regardless of their desired economic end states, both represent negative factors of the resource curse in their failures and the uncertainty and government infighting they caused.

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78 Caballero, Cowan, and Kearns, *Fear of Sudden Stops: Lessons from Australia and Chile*, 44.

79 Norman, Neville, *Australia: Economy*, Routledge, 2014, 3.

80 Ibid., 32.

2. Economic Management

How have long-term governmental policy decisions impacted the mining sector and the overall economy?

Australia seems to be managing its macroeconomic policy well—having recorded its 21st consecutive recession-free year in 2013.[81] Australia has historically had an open economy that displayed a large dependence on primary exports. At federation in 1901, exports accounted for around 25 percent of GDP, and experienced their highest boom by supplying the U.S. in the 1950s Korean War. As the graph below displays, exports have remained an important part of Australia's economy, and today account for over 20 percent of GDP. (See Figures 3 and 4).

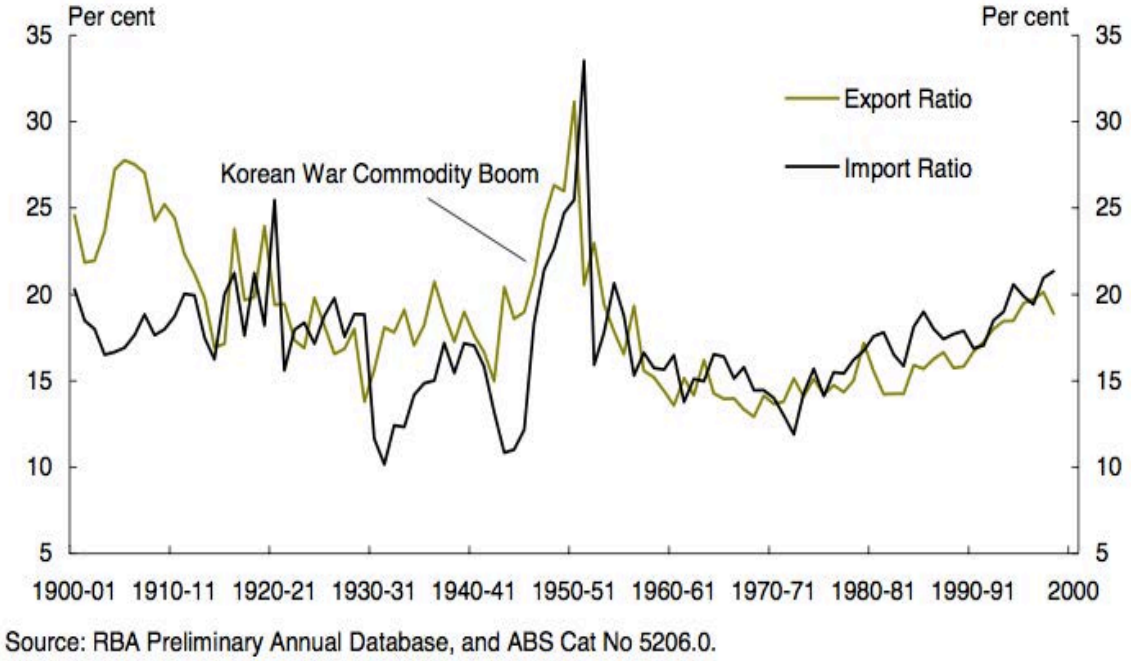

Figure 3. Australia Exports/Imports percent of GDP 1900–2000

81 Norman, *Australia: Economy*, 5.

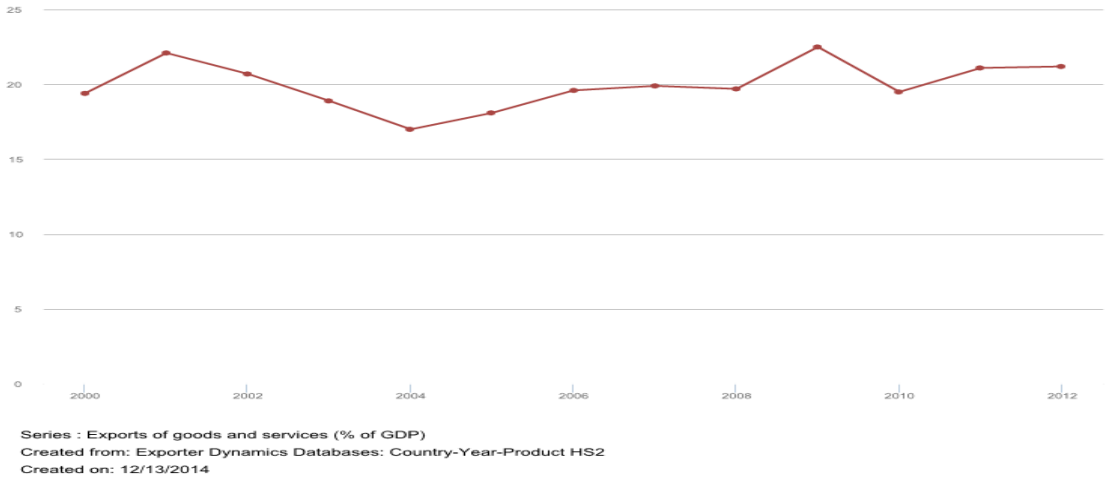

Figure 4. Australia Exports percent GDP 2000–2012[82]

Mining has recently undergone a large boom period tied to the growth of China, and is currently Australia's second largest contributor industry to GDP.[83] At the start of the boom in the early 2000's, private investment in mining was actually a greater contributor to GDP than the exports it supported. Those investments have since paid off, and capacity has increased so that exports now make up the bulk contribution to GDP.[84] Despite the robustness of the mining sector, or perhaps because of it, other sectors of the economy have not fared so well. The strength of the Australian dollar coupled with strong demand for commodities did bring record mining profits and rents, yet some blame the mining sector for driving prices too high and squeezing out other sectors of the economy. Due to this phenomenon—commonly known as Dutch disease, which will be discussed in a later section—the end result was corporate failings in airlines, automobiles, telecommunications, and insurance. Some claim these failures to be normal structural dynamics of a modern economy, yet others see the resource curse calling.

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[82] The Worldbank Databank, "Exports of goods and services (% of GDP)" Australia, 2000–2012, accessed 13 December 2014.

[83] Jericho, Greg, *Australia's Dreadful GDP Figures, The Guardian*, 3 December 2014, http://www.theguardian.com/business/grogonomics/2014/dec/04/australias-dreadful-gdp-figures-six-things-you-need-to-know.

[84] Jericho, *Australia's Dreadful GDP Figures.*

Further cause for concern for some was the development of an apparent dependency on foreign markets as the nation's current account deficit on the balance of payments more than doubled from 2001 to 2013. This deficit in the current account was most likely the result of normal free trade practices of a developed economy. As Figure 5 below explains, the deficit did come down somewhat after 2008 before rising again, demonstrating that Australia's strong export growth and strengthening currency after the global financial crisis did play a factor.

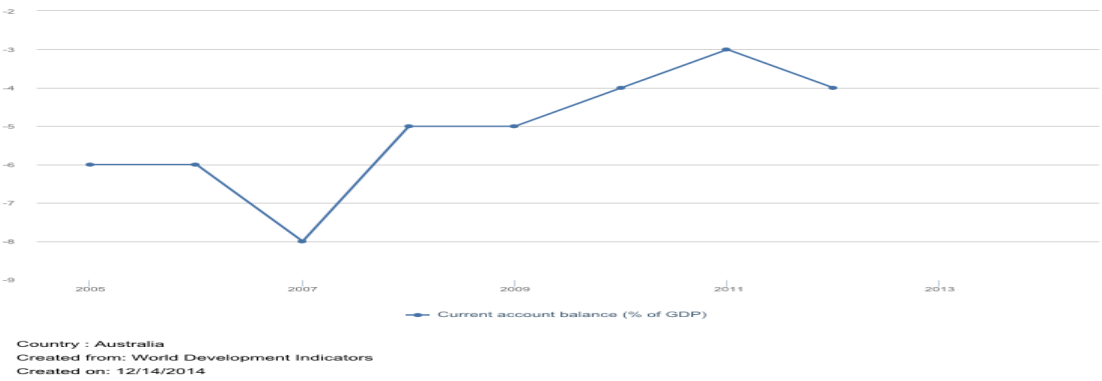

Figure 5. Australia Current Account Deficit 2005–2012[85]

Unfortunately, and possibly because of the deficit, mistakes were made with monetary policy—namely seven separate interest rate increases of 2009 and 2010 that were miscalculated and immediately reversed. After 2007, confused investors watched the Australian official cash rate drop from 7.5 percent to 3.0 percent then rise back to 7.0 percent, only to drop again back to 3.0 percent.[86] The decisions to raise rates in the middle of a recovery were premature and hurt consumer confidence in Australia's economic governance.

As ill-fated as these decisions made by the reserve bank were, it must not be forgotten that they were made in the context of a minerals boom, a global financial crisis, and a crisis in government. Had the crises not occurred, the mining boom would have

[85] The World Bank DataBank, "Current account balance (% of GDP)," Australia, 2005–2013, accessed 14 December 2014.

[86] Norman, *Australia: Economy*, 9.

played an even larger effect as the central bank likely would have been compelled to make higher rate increases to try to stave off inflation, which is its number one goal.

3. Resource Rents

Barma et al. describe a "rent-capture regime" as the institutional model of ownership, contracts, and fiscal regimes under which decisions pertaining to natural resources exploration, extraction, and taxation pertain.[87]Australia has a long history of free access to markets and strong property rights; the mining sector is no exception. Rents from resource exports are garnished through state royalties and commonwealth government taxes. Each state has special mining provisions for the royalties mining companies must pay. As there are far too many legislative rules per state to discuss here, a few will be highlighted in order to build an overall picture of Australia's resource rent-capture regime.

The resource rent-capture regime incorporates corporate use of public resources for private gain, and looks at how much of that gain goes back to society through taxes and royalties. Rent is what falls between that which consumers are willing to pay (price) and that which firms can supply (costs). Part of this rent is returned to the firm as profit. Profit can be further defined in commodity markets as normal and excessive, or super profit.[88] Super profit is the return to the firm from extraordinary price jumps in the commodity they sell. Given a set taxation or royalty scheme, because of this price boom, the relatively few firms inherent to mining can gain very high profits with relatively little given back to society because the royalties were set before the boom. Super profit, then, is the difference in price between what the market demand would normally set and what the booming demand sets. This is important for Australia in that the Labor party has repeatedly attempted to levy new taxes upon this super profit, as discussed above in

87 Barma, Kaiser, Le, and Vinuela, *Rents to Riches?*, 79.

88 Guj, Pietro, *Mineral Royalties and Other Mining-Specific Taxes*, International Mining for Development Centre, Mining for Development: Guide to Australian Practice, IM4DC 2012, http://im4dc.org/wp-content/uploads/2012/01/UWA_1698_Paper-01_-Mineral-royalties-other-mining-specific-taxes1.pdf.

section B.1. Further analysis of both laws and how they differed in their approach to resource curse mitigation follows the next section detailing tax schemes.

A historical state-centered approach of different resource extraction regimes helps to explain how the proposals for MRRT and RSPT came about, by emphasizing that Australia's mining boom has been a relatively recent phenomenon. For instance, Australians were unaware that significant mineral deposits existed in their country until the geological surveys of the 1980s revealed just how vast the mining potential was.[89] After gold was discovered in New South Wales in 1823, Australia experienced its first mining boom and has had a robust mining industry ever since. The resource boom of the 1960s fueled the contemporary mining environment. Prior to 1960, the general consensus was that Australia lacked the resource base of iron ore for domestic consumption let alone export.[90] Huge discoveries in Western Australia changed all that, and Australia now is the largest exporter of iron ore in the world.

Mining operations in Australia form a complex legislative web in terms of jurisdiction. Private property owners do not have a claim to what is under their property, and only enjoy limited rights to surface minerals, exploration, and mining operations. Mining operations are usually carried out then via state-corporation agreements on public lands. The states own all the resources within their borders and each has its own royalty scheme therein; the commonwealth government owns the resources of the surrounding territorial waters and economic exclusion zones, plus legislates and enforces laws for the collection of corporate income taxes for mining operations.[91] As a consequence of this mineral jurisdiction, each state legislates and enforces a different rent-capture regime, overviews of which are discussed below.

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89 McKay, Bill and Ian Lambert and Shige Miyazaki, "Special Article - The Australian Mining Industry: From Settlement to 2000," Australian Bureau of Statistics, Oct, 2000 http://www.abs.gov.au/ausstats/abs@.nsf/94713ad445ff1425ca25682000192af2/93136e734ff62aa2ca2569de00271b10!OpenDocument.

90 Davies, Mel, *Australia's Mining History,* Australia Mining History Association, http://www.mininghistory.asn.au/mining-history/.

91 *Australian state and federal regimes,* http://im4dc.org/wp-content/uploads/2012/01/UWA_1698_Paper-01_-Mineral-royalties-other-mining-specific-taxes1.pdf.

The largest mineral producing states are Western Australia, Queensland, and the Northern Territory, and their rental capture regimes differ significantly. Western Australia uses a system of specific and ad valorem royalties; Queensland uses a progressive, hybrid royalty system that applies different rents based on the prices of minerals extracted; and the Northern Territory uses an accounting profit based system.[92]

Western Australia (WA) has two general royalty systems. The 1978 Mining Act and the related 1981 Mining Regulations specify that low-value, bulk, non-metallic minerals have a specific royalty of A$.62 per ton (construction use)/ A$1.00 per ton (metallurgy use) with an annual adjusted rate for coal.[93] Higher value, metallic minerals use an ad valorem royalty system that is tiered in order to attract refining operations to the state. For example, bulk minerals are taxed at 7.5 percent whereas refined metals are taxed only 2.5 percent.[94] Included in the mining regulations are specific fees per metal. For instance, gold is charged 2.5 percent of spot market price at time of sale, whereas fine-scale iron ores are charged 5.625 percent.[95] The most economically important minerals have specific legislated regulations that can only be changed if both the government and corporation agree. Problems with the current system include lag time and perceived excessive profit taking. Lag time speaks to the adjustment necessary in legislature due to mineral price changes. The current system allows for the rebase royalty rates from problems due to market shocks or recapitalization must be negotiated and then legislated, which can be a lengthily process. If on the other hand the commodity booms, then the state gets some higher revenue due to higher prices, but the corporation gets significantly higher profits from the remaining revenue. There have been many proposals to tax this "super profit" and the Gillard government passed legislation to do so, but the new Abbott government has since rescinded it.

Queensland enacted legislation in 2003 for specific mineral royalties of A$.50 – A$1.80 per ton depending on the type of mineral, and ad valorem for some minerals such

92 Guj, *Mineral Royalties and Other Mining-Specific Taxes*, 3.

93 Ibid., 5.

94 Ibid., 5.

95 Ibid., 5.

as gemstones, plus an adjustable ad valorem rate that takes account for market conditions for more economically important minerals.[96] Queensland also includes more flexible price-adjusted royalties and concessions to mining corporations, such as lower royalty fees for smaller corporations and processed minerals (metals) plus various deductions for marine transport and insurance. Queensland's scheme is dominated by coal, which gives the other mineral royalties somewhat more flexibility than other states as they have less a presence.[97]

The Northern Territory has the least amount of mineral resource extraction from the three examples. Total 2013 Northern Territory mineral production was just over A$30 billion, versus A$100 billion and A$120 billion for Western Australia and Queensland, respectively.[98] Possibly due to the small mining presence in Northern Territory, it uses a more economically efficient accounting-based system to levy royalties. A complex formula is used to find a net value of specific mining operations, and then a flat tax of 18 percent is applied to this value. The idea is that small mines or less successful mines will not be punished with higher across-the-board rates, thus incentivizing new start-ups and activity. The down side of such a system is the complex charging of rates, namely that each royalty is levied on a case-by-case basis, which requires a large admin staff and increased cost to the state.

Australians have debated the merits and fairness of the above rent-capture regimes for many years. At the heart of the debate is the perception that mining companies' win out from high commodity prices generating huge profits. Many of these profits go to foreign shores as well because, due to the nature of mineral extraction, many of the firms are large multinational corporations. Furthermore, state royalty collections do not rise proportionally because they operate under traditional specific or ad valorem collection schemes. Therefore, the community and government miss out on their fair share of what should be a national public resource. Such perceptions can drive emotional short-term thinking that instigates reactionary un-business-friendly policy—such as the

96 Ibid., 11.

97 Guj, *Mineral Royalties and Other Mining-Specific Taxes*, 12.

98 Ibid., 11–13.

controversial RSPT and MRRT. These unpopular taxes factored into the removal of two Prime Ministers, impaired governance, and created uncertainty. In so doing they represent negative outcomes of the resource curse.

4. The RSPT and MRRT

The Resource Super Profit Tax and the subsequent Mineral Resource Rent Tax both represent efforts taken by the Australian federal government to access new rents from mining. This rent seeking behavior is not necessarily a bad thing, as Australia's government is not lacking in institutional strength, transparency, and rule of law. For instance, Australia has historically ranked in the top ten countries for governance by transparency international in their Corruption Perception Index. Regardless of Australia's institutional quality and transparency, the failed RSPT and MRRT represent negative outcomes of the resource curse by the governance problems they caused. Below is a brief summary of both.

The RSPT was introduced in 2010 as a 40 percent tax on mining corporations with revenues in excess of 75 million dollars. The Rudd government did not see the RSPT as a roadblock against mining investment. They argued that less competitive, smaller mines could invest more due to them not making super-profits, plus overall business would benefit, as the revenue gained from RSPT would fund an overall corporate tax cut, fostering growth.[99] The government also saw the RSPT as a more fair taxation scheme that allowed all Australians to benefit from mining, not just the large mining corporations. From a resource curse perspective, there is some validity to distributing resource rents so that more of the population benefits. The Australian mining taxation scheme was outdated. For instance, federal taxes paid by mining corporations were a flat rate, and effectively dropped from 33 cents per dollar in 2000 to just 14 cents per dollar in 2010 due to taxes not changing to the context of the boom.[100] Economically speaking improving the tax scheme would have benefited other sectors against crowding

[99] Bell, Stephen, and Andrew Hindmoor. "The structural power of business and the power of ideas: The strange case of the Australian mining tax." *New Political Economy* 19, no. 3 (2014): 470–486.

[100] Ibid., 475.

out from the mining sector. Dutch disease effects may have lessened as well from a lower corporate tax, making Australian goods more competitive. However, the government underestimated the effect a 40 percent tax would have on new investment projects by large mining corporations, like those that were driving the mining boom.

The mineral council of Australia and large mining corporations believed the new tax would not only hurt investment, but cost jobs and hamper economic growth.[101] Spurred by numerous corporations announcing that they were cutting investment plans and outlooks due to the RSPT, opposition to the tax grew steadfast. Soon the anti-RSPT coalition included not only big mining and the Liberal opposition party, but the Business Council of Australia, the Australian Chamber of Commerce and Industry, and the Premiers of both Western Australia and Queensland. This coalition brought about the demise of RSPT and Kevin Rudd. Even though Julia Gillard was able to pass a watered down version of the RSPT as the MRRT, it was short lived. From a resource curse perspective, the RSPT was a poorly instigated attempt to gain access to more resource rents, even though it may have benefited more Australians through redistribution and lower corporate taxes, it failed to properly consult and work with the large mining corporations that were driving the mining boom. The MRRT that followed was a better compromise with big mining, but politics appeared to have derailed that as well because the Liberal party was able to get elected on promises to rescind it, which it did in 2013. The MRRT was also victim to global economics, as slowing demand in China effectively ended the mining boom and the MRRT actually brought in very little revenues for the state. Overall governance was hurt by both taxation schemes, as the influential political commentator Paul Kelly wrote, the "decline of Australian public policy" came about because "the first mining tax was far too antagonistic to the industry . . . the second is far too ineffectual."[102]

It is safe to argue that the RSPT and MRRT hurt the Australian economy. Certainly it hurt the government and party in power at its creation. The uncertainty it

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101 Bell and Hindmoor, "Structural power of business and the Australian mining tax," 471.

102 Kelly, Paul, "Deep hole of her own making," *The Australian*, 13 Feb 2013, http://www.theaustralian.com.au/opinion/columnists/deep-hole-of-her-own-making/story-e6frg74x-1226576514638.

created undermined economic growth because it damaged consumer confidence in governmental management of the economy. The Reserve Bank of Australia also made several adverse assessments around the same time RSPT and MRRT came into effect.[103] As both RSPT and MRRT were directly related to resource rents, it is apparent that this negative outcome came about due to strong performance in the mining sector prompting reactionary knee-jerk policy in an attempt to garnish further rents. The context of the Global Financial Crisis must be taken into account, for obvious reasons. Yet scholars have argued that, from 2008 to 2013, "many of the issues that the Australian economy confronted were of a domestic origin and were not caused by the global financial crisis."[104]

The challenge for Australia policy makers will be to come up with a fair and balanced resource rent taxation scheme that takes into account commodity prices, mining corporation costs, and political pressures to public perception of mining profits. Perhaps a modified model of Northern Territories accounting-based system should be adopted utilizing automation for as much of the process as possible in order to aid in transparency and fairness. Like a stock market, a mining resource rent market could be established wherein any citizen could look and see what revenues natural resource extraction is bringing to his or her state and how those funds are being used in the budget process. Being able to see what specific benefit mining brings to the state allows for greater transparency, citizen knowledge, and interaction. This transparency would make the state and the mining business accountable to the citizens of Australia and empower the citizens to know how their resources are being used. Proper modeling of resource-based decision forecasts is also essential to setting the right royalty targets to sustain business and support government. Unfortunately the result will only be as good as the model used, and modeling is "an administrative area fraught with great complexity, uncertainty, lack of transparency and which may be open to abuse."[105]

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[103] Norman, *Australia: Economy*, 7.

[104] Ibid., 5.

[105] Guj, *Mineral Royalties*, 13.

C. ATTEMPTS TO MITIGATE THE RESOURCE CURSE

1. Australia Reserve Bank and Currency Derivative Markets

The reserve bank of Australia operates in a similar function to other central banks of OECD countries. The main goal of monetary policy is to keep inflation in check, which has been somewhat high in Australia due to commodity booms. It is plausible to argue that poor planning and policy around these booms caused higher inflation. Periods of high inflation following commodity booms therefore signify the resource curse dependent variable of undesirable economic outcomes. Figure 6 below displays inflation (CPI) and interest rates over time. One possible explanation is that the mining boom of the late 1990s caused inflation (CPI) to rise, and that the Australia Reserve Bank responded by lowering interest rates to keep inflation in check.

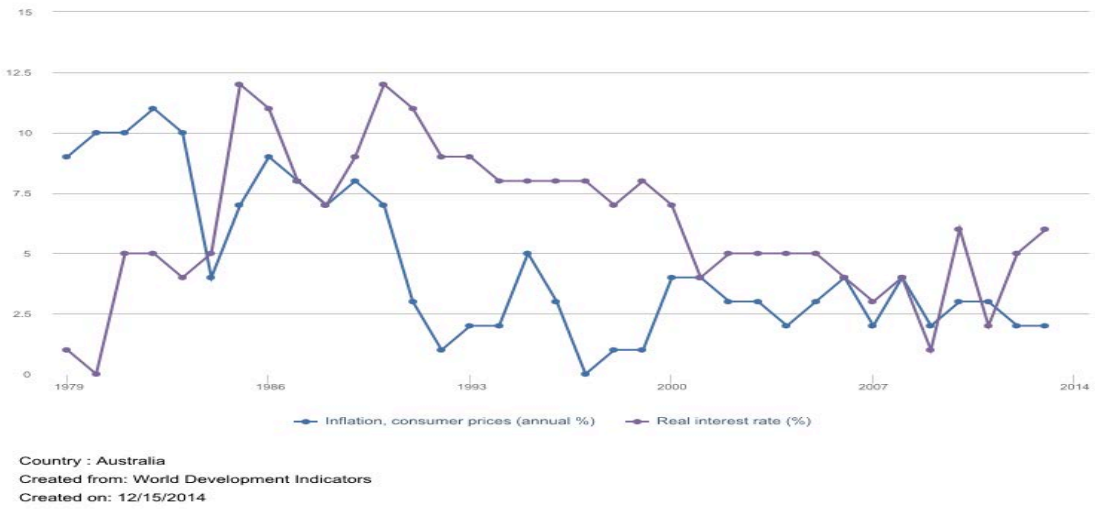

Figure 6. Australia Inflation (CPI) and Interest Rates[106]

Every economy experiences downturns and recessions, but there are some financial tools developed countries enjoy that help stave off crisis. Australia has many tools beyond monetary and fiscal policy that help avoid crisis. A good example is the development of strong currency market tools, such as the ability to finance debt in the

[106] World Bank Databank, "Inflation, Consumer prices (annual %), Real interest rate (%)," Australia, 1979–2014, accessed 23 March 2015.

face of falling currency levels via access to foreign debt markets. Australians have been able to do this because they have a well-established currency derivative market.

Access to foreign currency markets allows Australians to finance capital that their domestic economy would not otherwise be able to support. This is one of the advantages of global markets, as smaller countries can enjoy higher access to capital, money, and thus growth than if they were isolated. Access to global markets is just the first stepping-stone. Any country wishing to use foreign markets to generate capital flows must also have credibility on said markets to do so. Foreign markets have to trust that their loans will be repaid, and being a stable country with a stable currency goes a long way towards opening doors to foreign financing.[107] An example of Australia using foreign markets to finance their way out of a downturn can be seen from the late 1990s Asian-Russian crisis.

Australia was faced with a significant slowdown, which meant that overall national income might fall and even a recession might occur. Australia was able to finance their way out of the drop by increasing foreign borrowing.[108] This increase in foreign borrowing doubled the current account deficit from 3 to 6 percent in 1997–1998, and kept the economy growing strongly by financing capital for projects at home that drove household income higher. So is the solution to market shocks just to borrow your way out of them? As explained above, and situation dependent of course, foreign borrowing did keep Australia on the "right track" because foreign markets were confident in the past history and stability of the Australian people, economy, and currency.

Another method Australia has to minimize risk in foreign debt markets is their highly developed currency derivative market. The Australian currency derivative market is what banks use to intermediate capital inflows from foreign loans.[109] Australian banks minimize their customers' exposure to exchange rate risks through derivatives. Essentially Australia has relied on foreign market hedging if their currency falls. That is

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[107] Ricardo, Cowan, and Kearns, *Fear of Sudden Stops*, 1–3.

[108] Ibid., 3.

[109] Ibid., 20.

why, even by developed standards, Australia has one of the largest derivative markets in the world.[110]

2. Attempts to Fight Dutch Disease

Perhaps the largest remaining concern of possible adverse effects from Australia's mining boom seems to be Dutch disease. The Netherlands experienced a natural gas boom in the 1960s that drove up the real exchange rate, which squeezed, and unfortunately resulted in the deindustrialization of other sectors (particularly manufacturing).[111] The stronger Dutch currency made some sectors unable to compete and many firms went under. As mentioned earlier, there is a fear that the same process is underway in Australia, and there have already been failures in airlines, automobiles, shipbuilding, telecommunications, and insurance. Unfortunately, the problem is likely to get worse. During the boom's investment phase manufacturing-related jobs were supported by rising incomes and expenditures that helped to offset the rising real exchange rate. Now that the production phase has begun, the demand for manufacturing and other mining-related sectors will drop off because the investment phase has dropped off. Unfortunately real exchange rates are still relatively high, and prices are higher still. A recent Reserve Bank of Australia study estimated that by 2016, manufacturing output will be 13 percent lower, and this is "an effect that will increase over time."112 The good news is, ironically, that China's demand is slowing. This is good news for non-mining related sectors of the Australian economy as the real exchange rate will most likely drop as well and their products will become more competitive on global markets.

3. Lessons Learned from Resource Curse Factors

As explained above, Australia has adopted policies to protect other sectors against the resource curse through exchange rate mechanisms, access to foreign capital, and transparent rental royalty schemes. In addition, the state has pursued high minimum

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110 Ibid., 21.

111 Corden, Warner Max. "Booming sector and Dutch disease economics: survey and consolidation." *oxford economic Papers* (1984): 359.

112 Downes, Peter, Kevin Hanslow, and Peter Tulip, *The Effect of the Mining Boom on the Australian Economy*, Research Discussion Paper 2014–08, Reserve Bank of Australia, 25.

wages, and invested in education, health, and welfare programs to support the socioeconomic base. However, the crowding out of non-mining sectors has occurred nonetheless, such as the recent demise of the Australian automotive industry among others. Non-mining sectors have suffered while at the same time the strong Australian dollar, driven by mineral exports, has driven up prices in domestic markets such as real estate. As the Sydney Herald has printed, "the mining sector has crowded out almost all other sectors of the economy and also funneled credit and liquidity into a housing bubble in the real estate sector."[113] Further hampering growth is that mining is capital-intensive with relatively few jobs, thus disproportionate income distribution is possible and inequality may result. The leftist party in Australia, the Greens, wants to nationalize the mining industry because of inequality and many other disproportionate issues. The Greens claim that mining profits have rising 540 percent, yet the taxes and royalties have decreased.[114] Such prerogatives may serve political motives to sensationalize mining in order to pursue a leftist agenda, but there is some validity. According to Australia's Bureau of Statistics, inequality (GINI Coefficient) did rise from .305 in 2006 to .338 in 2008, but it has since dropped back down. Perhaps inequality is not as bad as the Greens claim.

Another area for further study is the issue of foreign corporate ownership in the mineral sector. As explained above, the investment side of the mining boom appears finished, and sites are moving on to ramping up production. Given the current nature of globalization and Australia's embracement of free trade, it is difficult to gauge foreign ownership in the mining sector. One 2011 survey found that almost 80 percent of the mining sector belonged to foreign or multinational corporations.[115] Accounting for how much of the profits from future production will stay in Australia vs. those that may go overseas will add insight into future contributions to Australia's GDP, GDP growth, and income. If most mining production profits go overseas then there will be less domestic gain from future mining operations. However, any model must also take into

[113] Martin, "Warning: After Boom it'll be Dutch and go," 1.

[114] Wainwright, Sam, "Take Back the Wealth, Five Reasons to Nationalize the Mines," The *GreenLeft Weekly*, issue 978, Aug 17 2013, https://www.greenleft.org.au/node/54776.

[115] Corden, Warner, "Booming sector and Dutch disease," 17.

consideration whatever mining operations that Australian corporations own abroad, and what rents will come back from them. Hopefully the ownership imbalance will not be very severe.

Future considerations for Australia's economy must also include analysis of China's economy, which is slowing down. Some reports say that the China-induced resource boom is finished, and that Australia must restructure its economy in order to stave off a recession.[116] The Reserve Bank of Australia has noted that key commodity prices have fallen as well, which could hurt overall growth.[117] The Reserve Bank of Australia is keeping track of these and multitudes of other measures, so the Australian economy appears in capable hands. Yet, the recent political turmoil combined with some of the disparities from the mining boom explained above could turn growth into recession.

As the resource curse is not a linear animal—it can strike any time poor policy coincides with a resources boom—time will tell if Australia keeps their recession-free record or not.

D. RECENT DEVELOPMENTS AND FORECASTS FOR AUSTRALIA

It may turn out to be unfortunate timing for Australia that China's demand, and with it the spike in global demand for commodities such as iron ore products, has recently cooled off. The mining industry in Australia has just come through a decade-long expansionary investment period, and now that they have shifted to a production phase companies have to deal with global demand that will be less robust than previously expected. The result will be lower profit, which most likely will have follow-on effects for the overall Australian economy through less fiscal revenue, less wage growth, less jobs, and less overall growth.

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116 Zhang, Moran, "Australia Rebalancing its Economy Amid China Slowdown," *International Business Times*, 14 December 2014, http://www.ibtimes.com/australia-rebalancing-its-economy-amid-china-slowdown-1567258, accessed 14 December 2014.

117 Stevens, Glenn, Media Release, Statement by Glenn Stevens, Governor: Monetary Policy Decision, The Reserve Bank of Australia, 2 Dec 2014, http://www.rba.gov.au/media-releases/2014/mr-14-21.html, Accessed 6 Dec 2014.

Australia is not in any immediate danger of falling off an economic cliff. True, public debt is about triple that of before the financial crisis due to recent large deficit spending.[118] The deficit for 2013 amounted to 48.5 billion AUD, or about 3 percent of GDP—about the same as the annual deficits of 2008–2012.[119] Australia's total public gross debt is approximately 30 percent of GDP, which is much lower than many other developed countries (Japan 220 percent, USA 106 percent, UK 104 percent, Italy 140 percent, OECD average for 2012 was 109 percent).[120] So in terms of public debt and fiscal deficit Australia is well positioned, just not as well positioned as before the financial crisis when strong mineral demand brought habitual fiscal surpluses and booming mining profits. Yet there are some structural issues that could translate into future debt problems. Australia's government needs to change the mindset developed under the mining boom and recognize that future fiscal revenue cannot rely on the large incomes generated from the mining boom, such as increased revenues from resource rents, mining investment, and mining-related infrastructure. Another structural problem for the overall economy will be the impact of the transition from mining investment to mining production amidst a period of lower demand for mining products. This section offers analysis of forecasts and concerns of what challenges Australia may face for the future.

Australia continues to struggle with one of the key explanatory factors of the resource curse: institutional instability and infighting over access to resource rents, or lack thereof. Voting in a new party has not seemed to helped matters, with PM Tony Abbott's Liberal Party losing significant points in the polls following the release of a very unpopular 2013 budget.[121] This budget included a 2 percent tax increase and cuts to education and health care, but still increased the deficit and failed to make structural changes to promote new avenues for growth. No mention was made of exactly how best

118 Trading Economics, Australian Government Debt to GDP, 1989–2015, http://www.tradingeconomics.com/australia/government-debt-to-gdp, accessed 5 March 2015.

119 *Budget*, http://www.budget.gov.au/2013-14/content/fbo/html/01_part_1-01.htm.

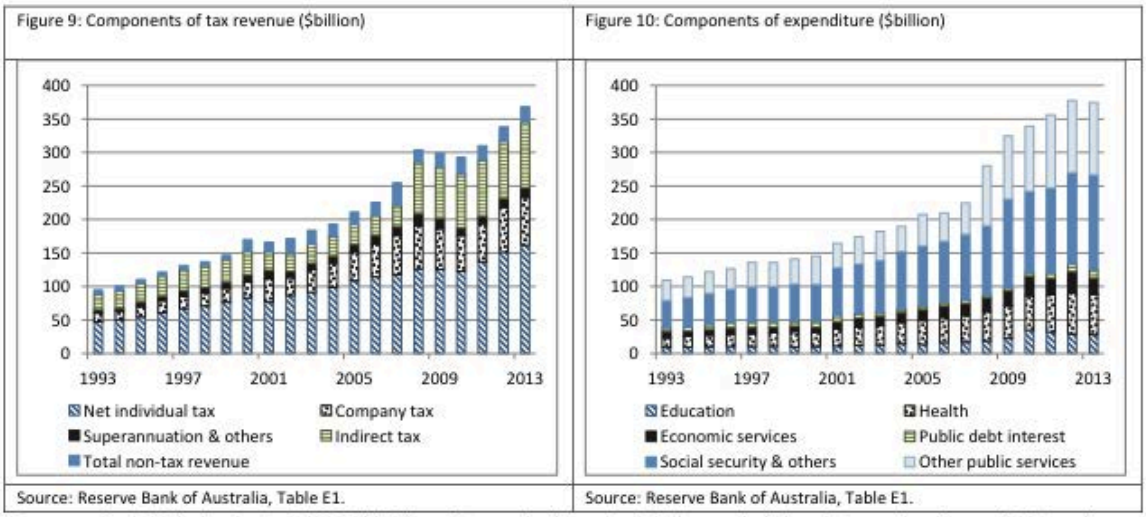
120 Ibid.

121 Murphy, Katherine, "Abbott government suffers significant slump in polls after budget," *The Guardian*, 18 May 2014, http://www.theguardian.com/world/2014/may/19/Abbott-government-suffers-significant-slump-in-polls.

to manage the rents from the mining sector. The governance problem has had a trickle-down effect upon Australian businesses. The head of Australia's Chamber of Commerce and Industry, Kate Carnell, voiced concern about the government's negative impact upon business confidence, saying, "the future of Australia right now is pretty flat, it is a real issue. The government doesn't seem to be able to prosecute the direction that it said it wanted to go down. What business wants? It wants a vision."[122]

Unfortunately the current vision seems to be austerity and tax increases. Australians already pay a lot in taxes (around 45 percent), and increasing the tax rate in an attempt to shrink the deficit would most likely hurt growth. Figure seven displays a visual clue as to how Australia's tax scheme and government spending have increased over the past decade. This increased spending could be associated with the resource curse because the government became somewhat used to increased revenues under resource rents and therefore increased social programs and government spending. The fiscal budget always changes slower than the market and when the resource rent revenue shrank, the government was stuck with the boom-era spending levels. The loss of fiscal revenue from mining created a discrepancy between government revenue and spending, and resulted in pressures to curb spending to match the new lower revenue.

[122] Innis, Michelle, "Australian Prime Minister Tony Abbott survives challenge to leadership," The New York Time, 09 February 2015, http://www.nytimes.com/2015/02/09/world/asia/australian-prime-minister-tony-Abbott-survives-challenge-to-leadership.html?_r=0.



Revenues: Net individual tax is gross PAYG withholding and gross other less refunds; indirect tax includes other taxes, fees, fines and GST; total non-tax revenue includes (i) sales of goods and services, (ii) interest and dividends, and (iii) other. **Expenses**: Social security & others include (i) social security and welfare, (ii) housing and community, and (iii) recreation and culture; other public services include (i) general public services, (ii) general purpose inter-government transactions, (iii) defence, and (iv) other.

Figure 7. Australia Tax Revenue vs. Expenditure[123]

The recent issues that Australia has experienced with the removal of prime ministers and the failure to come to a consensus on a mining tax represent a failing of the institutional process of government, which is a product of the resource curse. Australia's last decade of growth can largely be tied to a robust—almost skyrocketing—period of growth in the mining industry. As we have seen, the mineral rents percentage of GDP rapidly increased from 2001 to 2011 (Figure 2, pg. 25). Keep in mind that this last decade was the investment phase of the mining boom, which means that had the commodities demand not fallen off we would have seen the mineral rents percentage of GDP increase even more. All of this points to an expansionary period of growth that was directly tied to mining. Three factors came about from the last decade that merit attention.

1) Fiscal issues—In the last decade rents from mining brought fiscal windfalls for the state. Now Australia is struggling with budget woes and how to deal with a period of slower growth amidst pressures to decrease the deficit. 2) Structural issues - The mining investment phase channeled economic activity into sectors related to mining, such as

[123] Reserve Bank Australia, "Components of Tax Revenue and Expenditure," 1993–2015, accessed 1 May 2015.

construction, metallurgy, mining research and development, transport, and infrastructure. Those same sectors are struggling along with the mining sector on how to change structure to suit the production phase, which requires less capital and jobs. The global commodity market drop-off in demand further complicates matters. 3) Dutch disease - Many Australian firms have relocated and some industry sectors ceased to be competitive because of exchange rate pressures. The automotive industry is not the only casualty; manufacturing percentage of GDP has shrunk from 15 percent in 1990 to 7 percent in 2013.124 The manufacturing sector itself has shrunk from 20 percent in 1980 to less than 10 percent of the workforce in 2013.125

Australia's economy is in transition away from the mining boom and into the next cycle. This does not mean that mining will cease to be important; natural resources will continue to bring revenue to state and commonwealth coffers, just not as much as before. Economic pivot to Asia

As Australia moves on from the mining boom, there will be a period of declining terms of trade, which will most likely drive substantial real depreciation. Many economists predict that short-term growth will slow to stagnant levels, and that real income for Australians will also stagnate or fall (Garnaut 2011, Gregory and Sheehan 2013).126 The long-term solution to growth is to diversify the economy into new growth areas in services and innovative entrepreneurship.127 Australia will have to develop policies to deal with continuation effects from Dutch disease and institutional problems with governance, as discussed in the body of this thesis.

While governmental structural changes can foster better growth by leading the way towards balanced diversification, it is the private sector that must bear the brunt of

124 The World Bank DataBank, "Manufacturing value added % GDP," Australia 1990–2013, accessed 23 March 2015, http://databank.worldbank.org/data/views/reports/chart.aspx#.

125 Australian Bureau of Statistics, Labour Force, ABS Catalogue 6203.0, accessed 2 May 2015, http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/6202.0Explanatory%20Notes1Sep%202013.

126 Garnaut, Ross, "Australia and resources in the Asian century," *Australian Journal of Agricultural and Resource Economics*, 58, no. 3 (2014): 301–313.

127 Sheehan, Peter, and Robert G. Gregory. "The resources boom and economic policy in the long run," *Australian Economic Review* 46, no. 2 (2013): 121–139.

the changes required in productivity of the services sector.[128] Increasing productivity and molding a model specific to Asia's needs will help to make up for the lost income from decreasing export prices. If private sector efficiencies can be increased, then Australia will become more competitive and this should help drive new areas of growth.

If Australia can model its service sector to fit a complementary need in the production side of her Asian partners, then Australia will have developed a nice sustainable method to replace the lost revenue from the mining boom.

[128] Westland, Tom, *Australia's Post Mining Boom Future Still Tied To Asia*, The East Asia Forum Vol 7 No. 1, 5 February 2015, http://www.eastasiaforum.org/2015/02/05/australias-post-mining-boom-future-still-tied-to-asia/, 16.

IV. CONCLUSIONS

This work has explored resource curse factors in the political economy of Australia versus that of Chile. Examining the path dependence of institutional development, growth, and policy has identified not only how each country attempts to avoid the resource curse but also how each may still be privy to negative factors of the resource curse. Be it Dutch disease in Australia or fiscal dependence on copper in Chile, how a country manages its natural resources will always establish whether they become a blessing or a curse.

The main goal of this work is to expose that the management of natural resources can and does present real consequences to the economic and political situation of any state. Developed or not, the mismanagement of natural resources will have dire consequences both politically and economically. By shifting the traditional resource curse lens from less-developed, oil-dependent states to more-developed mineral-rich states such as Australia and Chile, one can decipher the evolution of each country's political economy and expunge methods other states may refer to when it comes to managing their natural resources. As we have seen, the major resource curse mechanisms differ significantly between Australia and Chile, even though their economies can be characterized as relatively similar in other respects—they are both small Pacific-oriented countries with dominant mineral export sectors.

Chile has been extracting and selling copper on global markets longer than Australia has, and has experienced a much more tumultuous economic growth trajectory than Australia. Chile's path towards mineral governance has centered around the question of political infighting for control of the resource rents; particularly the nationalization of Chile's mines and the subsequent military control over the revenue hampered Chile through misappropriation of funds, crony capitalism, and opaqueness of resource rents. It was not until democracy returned to Chile that some mining interests were re-privatized, even though the largest mining entity by far was and remains the state-owned CODELCO. CODELCO continues to bring revenue to the state, but the state has taken

numerous reform measures to increase transparency and redirect copper revenues towards more sustainable economic tools and public goods.

From a governance standpoint, Chile had to undergo some painful periods in order to foster the change required to build tools that help stabilize the economy. For instance, the massive recessions of 1999 and 2009 prompted Chile to turn to the World Bank for aid, which enabled new recommendations and policies that built the foundation for the mining-related laws Chile has today. The evolution of counter-cyclical fiscal policy and the creation of the copper funds helped Chile to better weather global financial crises and have the state a savings account from which to support their currency and promote investment. Chile's government also underwent numerous reforms in the past three decades, enabling better transparency for mining and rescinding the military-backed copper law. Chile's biggest struggle ahead is how to promote new areas of growth amidst a period of lower than expected copper revenues.

Australia has followed a different path in its mineral development, one that probably more closely resembles the Netherlands after its discovery of natural gas fields in the 1970s. Australia experienced a mining boom following the 1980s discovery of vast deposits of coal, iron ore, and other ferrous metals in the outback. Australia, unlike Chile, had already diversified its economy and modernized by this point. The added mining revenue of the late 1990s until the present was therefore somewhat unexpected and unplanned for. The result has been unprecedented growth in Australia's mining sector; somewhat to the detriment of other sectors not related to mining. That Australia has undergone Dutch disease may be a point of contention, but clearly the mining-backed rising Australian dollar hurt exports in the agriculture and manufacturing sectors. In addition, high mining wages probably prompted the government to set a high minimum wage, which made Australian labor uncompetitive globally—hence, the disappearance of certain sectors, such as the automotive and shipbuilding industries. Australia also has the benefit of numerous economic tools available to manage a downturn, such as financial derivatives and robust monetary policy.

To date, Australia does not need an innovation such as counter cyclical fiscal policy or mining funds (although this, too, is debatable). The single largest negative

component of the resource curse related to Australia is that of governance. The question of how to appropriately distribute mining rents caused much turmoil, and the proposed RSPT and MRRT served to only demonstrate how divided the government was and is on how to solve the problem of mining taxation and redistribution. Australians are fed up with the "buffoonery" in their government, and no real consensus has been reached on how to manage mining. The opportunity may have come and gone, however, as the mining boom appears to be waning amid lower commodity prices and the change from investment to production. Mining will continue to play an important role for Australia however, and a way forward should be carefully considered. Perhaps the recent governance issues have created a turning point where Australia's political elite recognizes that political strife is too costly, and a consensus may be reached.

The implications of the research presented in this thesis are that similar states may evolve very different methods in dealing with their mining sectors. From a historical institutionalist perspective, both Australia and Chile have experienced critical junctures in their mining governance that brought them to where they are today. For Chile, it was the 1980s Latin America debt crisis that helped to unseat Pinochet and brought back privatization in the mining sector. The subsequent recessions of the late 1990s and late 2000's also enabled new legislation to better manage the economy through copper funds and counter-cyclical fiscal policy. Australia has experienced a critical juncture through the governance issue of how to properly manage taxation from mining. Two, and possibly three, prime ministers will have lost their seats because of failing to solve the fiscal issues related to mining. These events imply that negative resource curse outcomes emerge from political instability, failure to anticipate commodity downturns, failure to redistribute resource rents correctly, and failure of institutions to promote and enforce mining transparency and accountability.

Times of crisis require economic and most importantly political stability. The government in power must have a vision and a plan to take the country out of the crisis, and prudent planning should also help anticipate rainy days. Chile has institutionalized fiscal planning based on the forecasting of copper prices. Other natural-resource dependent countries may adopt a similar system of planning to their situation. Australia

has benefited by economic diversification, and even though it did not have a mining fund or tax before the global financial crisis, the strength of the banking system, monetary policy, and access to a large financial derivatives market helped keep the economy out of recession.

In order to avoid the resource curse, other avenues of revenue must be made available and the rents from the resource extraction must be fairly distributed. Even though Australia is a developed economy and has grown well for over twenty years, the disagreement with just how to manage resource rents and taxes therefrom caused the downfall of both the Rudd and Gillard governments and arguably hurt the country economically as well. Chile is also currently struggling with how to meet public demand for better education and health and the relationship this demand has to mining revenue. Chile's government will have to carefully weigh decisions in the weaker commodity revenue period ahead, while still bringing better opportunities to Chileans.

Institutions really do matter. As Chile's transition from dictatorship to democracy signifies, there was a lot of uncertainty and opaqueness with just how institutions were set up and how they used rents from copper. The military dictatorship established for itself a long-lasting source of security and revenue through appropriating part of the copper rents. While this move helped the military, it most likely hurt the state by hampering transition to free and functioning democracy and taking away funds that could have been better used to promote economic growth through things like education, welfare, health, or infrastructure. Australia's institutions also play a huge role in mining. The mining boom in Australia demonstrates that institutions are slow and hard to change, in that the question still remains after years of debate into how to manage resource rents.

An avenue for further research could be how Chile's and Australia's support for free trade has impacted their propensity to experience different elements of the resource curse. Specifically, researchers could explore tariffs and treaty agreements surrounding Chilean and Australian mining exports to see if there is a correlation or causation between governmental trade agreements and resource rents. Perhaps governments that receive higher rents from a dominant commodity, such as copper or iron, have a motivation to keep tariffs in place on said commodity in order to gain higher rents.

Either way, copper in Chile and iron ore in Australia will continue to play important roles in the economies of both countries. Thus, the politicians of both countries will continue to legislate for how those commodities are controlled—hopefully, to the benefit of their citizens.

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