Spring 2020

Causes of Chaos: Understanding Economic Crises in Latin America

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Abstract

I. This paper is an attempt at identifying the causes and commonalities of financial crises in Latin America over the past fifty years. This identification is carried out through an extensive review and analysis of the literature on causes of twelve major financial crises spanning over six major nations in Latin America. In addition, we conduct a Logit Binary Regression on commodity, interest rate and currency indexes to determine how closely related shifts in prices of the underlying asset are to times of financial crises. Through the literature review, we find the following major commonalities among the Latin American financial crises: over-dependence on commodities, poor macro and currency policies and overall political instability. Our quantitative analysis confirm that these crises are associated with significant shifts in the price and value of various commodities, currency and interest rate indices.

I. Introduction

Latin America is a culturally interesting and diverse region in the Western Hemisphere that stretches from the tip of South America to the borders of the United States. The region is comprised of all countries that were influenced by European powers, with languages derived from Latin after the Spanish discovery of the Americas by Christopher Columbus in 1492. Since then the region's constituents have had varied histories with many being marred by political and social unrest and numerous ideological shifts in the ruling power. This has caused their economic and financial growth to vary drastically throughout the past 120 years.

This paper will focus on the drastic downturns in economic growth and financial conditions throughout the different countries of Latin America, generally labeled as Economic or Financial Crises. Following Kindelberger and Aliber (2005), we define a Financial Crisis a as any situation in which some or all financial assets suddenly lose a large part of their nominal value [1]. Throughout Latin America and the world, most financial crises are associated with banking panics or other large-scale recessions, and these recessions and panics have gotten significantly more global as the world becomes more and more interconnected. Due to data restraints our study will focus predominantly on the past 50 years, covering twelve noteworthy financial panics throughout Latin America, starting with the Latin American Debt Crisis of the 1980's and continue to today's ongoing Venezuelan Crisis that began in the early 2010's.

This study intends to determine major commonalities across the twelve different crises as well as quickly analyze how the region is positioned in terms of those commonalities. The motivation for the study is derived from the author's interest in financial crises and a lack of perceived knowledge of foreign market signals such as the US Treasury Yield Curve in the United States for emerging markets. Growing up in a town heavily influenced by Latin American immigrants and constantly hearing from friends' parents about the drastic difference between the US economy and their home countries' economic issues was a large factor in focusing on Latin American Crises. The ever-developing complexity of the Latin American economies and the seemingly never-ending crises or defaults were also significant factors in the study. The study aims to differentiate itself by not only providing a general understanding of what causes financial crises in emerging markets, specifically Latin America, but also by identifying commonalities between the Crises, highlighting the regions current economic and financial stability in terms of those commonalities, as well as testing for procyclical crises signals in Latin America.

Latin America's many financial struggles can be traced far back into the time of imperialism and colonial rule. However, this paper will trace the struggles back to the Latin

1 Charles P. Kindleberger and Robert Aliber (2005), Manias, Panics, and Crashes: A History of Financial Crises, 5th ed. Wiley, ISBN 0-471-46714-6

American Debt Crisis of the 1980's. This crisis was region wide and effected almost every country within Latin America and would later come to be known as La Década Perdida, or the Lost Decade. It was kicked off by Mexico announcing that it could not meet its foreign debt payment obligations in 1982[2]. This in turn discredited most Latin American economies throughout the decade, leading to the popular Lost Decade name. Since the 1980's, there have been eleven more financial crises, directly effecting eight of the largest economies in Latin America with Venezuela being the most heavily effected country over this period. The financial crises that will be explored throughout this paper are as follows: the Latin American Debt Crisis, the Chilean Crisis of 1982, Special Period in Cuba, Mexican Peso Crisis, Venezuelan banking crisis of 1994, 1998-99 Ecuadorian financial crisis, the Argentinian Great Depression, the Samba effect, the 2002 Uruguay banking crisis, the Venezuelan general strike of 2002-03, the Venezuelan banking crisis of 2009-10, the 2014 Brazilian economic crisis, and the ongoing Venezuelan crisis.

II. An Overview of the Crises

The financial crisis that initiated the recent spree of crises in Latin America is largely agreed to have been the Latin American Debt Crisis of the 1980's which was later commonly referred to as "The Lost Decade" due to the lost economic growth during that decade. Most experts agree, with few but notable exceptions, that the crisis was caused by the excess debt taken on by Latin American countries in the prior two decades. At the time, most Latin American economies were soaring, especially after the oil price increase in the mid to late 1970's. Countries borrowed initially through public routes such as the World Bank and later through private banks and would borrow against their future oil revenues, using the capital to finance

2 Hershberg, Eric, and Fred Rosen, eds. Latin America after Neoliberalism. New York: North American Congress on Latin America, 2006. Print.

infrastructure programs and other industrialization needs. Mexico was one of the largest culprits as they borrowed against their future oil production, valued in US dollars. As interest rates increased in the late 70’s the payments on the Latin American countries’ sovereign debts increased, and the crisis

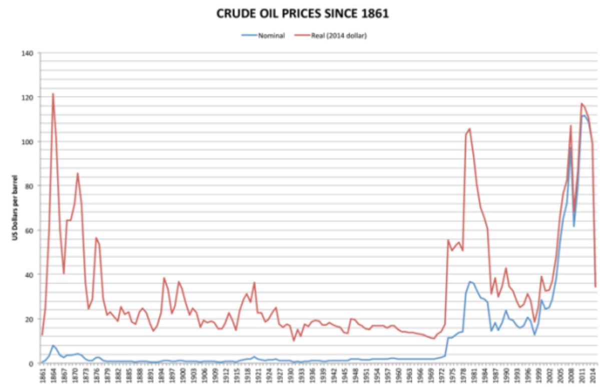

Figure 1: Mexican Crude Oil Prices

ultimately culminated when world trade contracted in 1981 and crude oil prices dropped precipitously. On August of 1982, the Mexican Finance minister announced that they would not be able to service its debt due to the sharp decreases in oil prices, as seen in Figure 1 showing over 100 years of Mexican crude oil prices via Bloomberg to the right, without renegotiating payment periods and new loans[3]. This made creditors aware of the inherent risks with Latin American Sovereign debt and essentially froze Latin America’s ability to borrow more capital. This caused Latin American countries to not be able to refinance their short-term debt loads they could not pay as they had exceeded their earnings power and causing them to default.

The debt crisis was the most serious the region of Latin America has seen and caused many countries to be forced to work with the International Monetary Fund as well as accept very strict covenants on their reissued debt. These covenants forced countries to halt spending on social initiatives and push all revenue to the repayment of debt. Income and imports were heavily affected as economic growth stagnated for years and unemployment reached recessionary highs. In the ten years following 1980, real wages dropped between 20 and 40 percent in many urban areas of Latin America[4]. The intervention by the IMF and the heavy austerity measures put on

3 “Crude Oil Prices from 1861.” Quandl.com, British Petroleum, 19 Aug. 2019, www.quandl.com/data/BP/CRUDE_OIL_PRICES-Crude-Oil-Prices-from-1861.

4 Felix, David (Fall 1990). "Latin America's Debt Crisis". World Policy Journal. 7 (4): 733–71.

the countries in order to prevent panic caused domestic unrest as they forced countries to cut social programs which has been argued to have pushed citizens to drug trade, prostitution and terrorism and continued social unrest for decades. The crisis is largely attributed to enticing many Latin American countries to abandon their import substitution industrialization models for an export-oriented industrialization that saw them halt the attempt to limit foreign dependence through local production in favor of exporting what they had a comparative advantage in and importing everything else, normally following the neoliberal economic model strategy that includes privatization, globalization, free trade and austerity.

The shift away from neoliberal economic policies is thought to be one of the driving factors for the Chilean crisis of 1982. Occurring just about at the same time as the Latin American Debt Crisis and sometimes thought of as an extension of that Crisis, the Chilean crisis of 1982 was the worst economic crisis for Chile since the Great Depression of the 1930's. The Chilean crisis of 1982 is what popularized the Chicago Boys of the 70's and 80's as their Neoliberal economic strategies were largely adopted in many Latin American countries and led to years of prosperity until the pegging of the Chilean peso to the US dollar marked a deviation from these policies had disastrous results. However, those who argue against neoliberal economic policies are quick to argue that they were in fact the cause of the Chilean Crisis as they led to bank collapses and subsequent bailouts by the government throughout the two years leading up to the crisis and believe it is an inherent flaw of the model[5]. In reality the Crisis was most likely brought on by the regional debt crisis unfolding throughout the decade as well as the pegging of their currency which caused their currency to be significantly overvalued and hampered investment into the country while also being burdened with a heavy debt load.

5 *Historia contemporánea de Chile III. La economía: mercados empresarios y trabajadores*. 2002. Gabriel Salazarand Julio Pinto. pp. 49–-62.

The Special Period in Cuba between 1991 and 2000 was drastically different in causes and in repercussions to the country then both of the previous crises. While all three crises were significant stagnations for each countries' economy, the Special Period in Cuba was brought on by an extreme shortage of sugar as well as the collapse of the Soviet Union which made up roughly 80% of Cuba's imports and exports[6]. This drastic reduction in imports and exports caused a roughly 34% decline in GDP over the nine-year period and reshaped Cuban life as many citizens were required to live without goods they had for decades prior. Oil imports dropped to 10% of what they had been pre-crisis and the crisis kicked off a self-dependency movement throughout their society. The decrease in Soviet oil caused most other major industries to grind to a halt as they depended on the black gold for energy. The societal impacts were drastic as waiting for a bus could take three hours, power outages could last up to sixteen hours and the average Cuban lost about twenty pounds[7]. The Special Period in Cuba could be considered an outlier in terms of Latin American financial crises as it was brought on by an overdependence on an outside country due to political ideologies and global allies being few and far between for the small communist regime.

The Mexican Peso Crisis was another example of currency induced crisis however it had its differences from the Chilean Crisis in the early 1980's. In short, the crisis was caused by the sudden devaluation of the peso against the U.S. dollar in late 1994 largely due to extreme capital flight out of Mexico. The Mexican central bank decided to issue short-term debt in Pesos with the promise of repayment in US Dollars which invited increases in international capital. This couple with Mexico's signing of the North American Free Trade Act(NAFTA) caused investors

6 Carmen Diana Deere (July–August 1991). "Cuba's struggle for self-sufficiency - aftermath of the collapse of Cuba's special economic relations with Eastern Europe". Monthly Review. Archived from the original on 2007-10-07. Retrieved 2020-05-18.

7 Donovan, Sandy; Rao, Sujay; Sandmann, Alexa L. (2008). Teens in Cuba. Capstone. p. 26. ISBN 9780756538514. Retrieved 18 April 2020.

to have renewed confidence in the Latin American country until political unrest during the 1994 election caused investors to implement higher risk premium on Mexican assets.
The Mexican Central Bank then implemented a series of moves with the intention of maintaining the Pesos peg to the Dollar, however this caused investors to recognize an overvalued peso and flee Mexican assets causing increased downward pressure on the Peso. The Central Bank's reserves were quickly depleted as they attempted to keep the Peso pegged and soon, they were unable to sell new issues of public debt or purchase dollars with the severely devalued Peso and they were forced to let the Peso float freely causing even more depreciation. Eventually Mexico accepted a $50 billion bailout from the United States and the International Monetary Fund.

The economic and financial repercussions were severe as Mexico GDP declined by roughly 6% and many banks collapsed revealing low-quality assets. As interest rates rose to keep up with the devaluing currency, citizens struggled to keep up with mortgage payments and many more defaulted as they were unable to afford regular goods due to the 52% inflation rate Mexico was experiencing. Scholars largely agree that one of the main problems with Mexico was its attempt to beat the Impossible Trinity in international economics by tampering with their monetary policy as they already had a fixed exchange rate and free flow of financial capital[8]. Other scholars argue that the crisis exposed further flaws with the Washington consensus for emerging market economies as a privatized banking sector with a liberalized and internationally subordinate economy is dependent on foreign inflows of capital to succeed economically[9]. There is no arguing that the Peso Crisis had large impacts on the rest of Latin America as many other countries experienced capital outflows after renewed loss of confidence in emerging markets

8 Mankiw, N. Gregory (2013). Macroeconomics, 8th Edition. New York, NY: Worth Publishers. ISBN 978-1-42-924002-4.

9 Marois, Thomas (2012). States, Banks and Crisis: Emerging Finance Capitalism in Mexico and Turkey. Cheltenham: Edward Elgar. ISBN 9780857938572.

which would come to be known as the Tequila Effect, something that would happen again with another Latin American economy in the coming decade.

In the same year as the Mexican Peso Crisis, another financial crisis was unfolding in Venezuela, their first of three we will be exploring from this country. The 1994 Venezuelan banking crisis can largely be attributed to financial liberalization, lax banking supervision and downright fraud. By the end of the crisis, the Venezuelan government had bailed out ten Venezuelan banks after 17 of 49 commercial banks failed representing over 50% or the systems assets[10]. This crisis looked somewhat similar to the housing collapse of 2008 in the United States as Venezuelan banks were forced to make riskier and riskier loans to keep up with their deposits dropping significantly. This coupled with poor oversight and some banks pledging the same cash for different loans and accepting the same collateral for multiple loans all were uncovered after the drastic drop in oil prices resulted in decreased consumer and governmental spending. This crisis was largely attributable to poor regulation and even poorer decision making throughout the financial crisis but also shared a trigger of decreased commodity pricing being the catalyst.

Fast forward four more years and the next financial crisis in Latin America was unfolding, this time in Ecuador. What was unfolding in Ecuador at this time was nothing short of a perfect storm for the country as they experienced a banking crisis, currency crisis, sovereign debt and political crisis all at roughly the same time. The country had undergone significant financial sector liberalization throughout the 90’s which had the same effect as they had in Venezuela, riskier loans backed by the belief that well connected recipients would be bailed out by their government connections. The liberalization did allow easier access to international capital which banks then began engaging in US dollar denominated banking which left the

10 Molina, C.A. (2002), "Predicting bank failures using a hazard model: the Venezuelan banking crisis", Emerging Markets Review, Volume 3, Issue 1, 10 April 2020

country susceptible to exchange rate fluctuations. The shocks that ultimately tested these weaknesses were a sharp decrease in oil prices, strain on the agricultural sector due to an unusually strong El Niño which caused defaults totaling close to 13% of the country's GDP. The two drastic decreases in commodity revenue caused further defaults and runs on the national banks causing further strain on the banking sector[11]. A capital flight from emerging markets due to the political and financial strain on Ecuador and other emerging markets lead to tighter lending to the country and the Ecuadorian Sucre to depreciate heavily against the dollar. The government eventually bankrupted on their sovereign debt as they struggled to support deposit guarantees and the central banks expansionary policies. The catalysts for the crisis was very similar to the previous five crises however, the exact causes were a mix of similar and very different causes as this is the first one to be largely caused by a strengthening weather pattern but shares the financial corruption and currency manipulation causes which left Ecuador in a recession for the better half of two years.

The late 1990's and early 2000's would shape up to be a tumultuous few years for Latin American financial systems as Ecuador would soon be followed by Argentine, Uruguay and Brazil all in somewhat of a financial contagion. Argentina was the next economy to succumb to the struggles as the Argentinian Great Depression of 1998-2002 kicked off in the third quarter of 1998. Argentina had struggled over the previous two decades since the aforementioned Latin American Debt Crisis of the 1980's to stabilize their economy and regularly dealt with extreme hyperinflation. The widely cited three main contributors to the financial crisis in Argentina were the fixed exchange rate between Argentine peso and the US dollar, large amounts of borrowing

[11] "Ecuador and the IMF -- Address by Stanley Fischer". www.imf.org. Retrieved 2020-04-17.

by the government, and reduced tax revenues due to the decrease in oil prices[12]. Other reasons largely cited are the lack of fiscal discipline my the government as well as financial contagion as the flight from emerging markets due to the crisis in other Latin American economies, Russia, and Asia all put pressure on the Argentinian Peso further crippling the government's ability to pay down their sovereign debt. The pegging and unpegging of the Argentinian Peso also added significant stress to the exchange rate during the crisis that is wildly cited as uneducated and unnecessary strain to the economy. Overall, Argentina's continued economic troubles all convened at an inconvenient time and crippled the economy.

The crisis in Argentina quickly spilled over into Uruguay as they suffered a large banking crisis in 2002. The crisis was largely attributed to the run on depositors largely from foreign investors, specifically from Argentina as their currency problems deepened. The crisis showed the country's overdependence on Argentina which caused a deep contraction in their economy. Approximately 33% of the country's deposits were taken out of the financial system and five financial institutions were left insolvent[13]. Uruguay was largely criticized for their response as it was deemed inadequate and slow and could have lessened the financial strain on the system. The crisis left many depositors in Uruguay and neighboring Argentina and Brazil in dire economic conditions as Uruguay did not have adequate depositors' insurance at the time. This crisis was built off other regional crises at the time and helped deepen others during the same period.

The final crisis of the late 90's and early 2000's was what would later be known as the Samba Effect in Brazil. Much like the Tequila Effect explored earlier during the Mexican Peso Crisis of the early 1990's, the Samba effect was a large drop in the value of the Brazilian Real

12 Luna, Daniel (20 December 2001). "Argentina's Crisis Explained". TIME. Archived from the original on 1 September 2012. Retrieved 19 April 2020.
13 Atchugarry, ten years after the crisis

due to capital outflows from the region beginning in 1999. These outflows are largely attributed to the other crises unfolding in Asia and Russia and the increasing of US interest rates. All these caused foreign investors to put increased premiums on Brazilian and in turn Latin American asset return rates. Brazils stance as the largest economy in South America and Latin America showed how dependent other countries were on Brazil. During the crisis Brazil also tried to increase interest rates and cut spending and tax increases in an attempt to maintain the value of its currency, however this would prove to fail as it went against the impossible trinity of macroeconomic policy[14]. Fears that the other emerging market crisis would quickly spread to Latin America lead Brazil to adopt austerity measures and accept a $40 billion bailout from the IMF. The Samba Effect is largely regarded to have dissipated by the turn of the new millennia, as had many of the contagious financial crisis of the 1990's.

After the contagion crises of the 1990's and early 2000's, Venezuela began to take center stage again beginning with their general strike of 2002-2003. In response to political unrest and the desire for then President Hugo Chavez to step down, 18,000 state oil employees staged a strike lasting three months. Oil, much like in other Latin American countries, plays a main role in Venezuela's economy and strike cost the oil industry $13 billion and the country's GDP fell 27% in the start of 2003[15]. The lockout had other economic and financial implications as unemployment neared 20% and Venezuela defaulted on their oil contracts for the first time ever. Luckily this crisis was short lived and did not have the far-reaching implications the last few had. It still shows a perfect example how dependence on commodities and poor political stability has been an overarching theme throughout Latin America's financial and economic history.

14 "Bearing the Burden: The Impact of Global Financial Crisis on Workers and Alternative Agendas for the IMF and Other Institutions", Institute for Policy Studies, April 2000.
15 Jones, Bart (2008), Hugo! The Hugo Chavez Story from Mud Hut to Perpetual Revolution, London: The Bodley Head

The General Strike of 2002-2003 was only the tip of the iceberg for Venezuela as a few years later they would suffer another financial crisis of the banking kind that would persist in some aspects to this day. The Venezuelan banking crisis of 2009-2010 saw the government take over twelve Venezuelan banks totaling over 12% of total deposits[16]. The takeovers were largely due to financial liberalization, corruption and poor oversight within the financial sector. The repercussions from this are largely not totally known as shortly after the current Venezuelan Crisis began that has been affecting the country and economy for an entire decade. It is largely politically driven as the ruling party of Chavez and Maduro have done anything they can to stay in power. The crisis has been likened to a war-time economy and regularly ranks near the bottom of all financial and economic lists; however, the country has stopped releasing data points and all that can be formulated are estimates. The unrest has led to significant pull back in the Venezuelan economy as many foreign firms have pulled out entirely due to safety reasons. Most airlines with the exception of those from Turkey and Russia have pulled out of the country and international capital has all but seized entirely due to capital constraints imposed by foreign governments. This is extremely different than most other crisis we have looked at as the data simply is not there and there is a large humanitarian aspect. However, it largely encompasses the political risk inherent with Latin America over the past four decades that have caused many of the crisis we have explored.

The final financial crisis that will be looked at is also still ongoing, and that is the 2014 Brazilian Economic Crisis. Between 2015 and 2016, Brazil saw their GDP shrink by over 6% due to a number of economic, financial and political reasons. The crisis started when commodity prices for a number of Brazilian exports decreased drastically along with the foreign demand for

16 BusinessWeek, 14 June 2010, Venezuela Seizes Banco Federal for ‘Grave’ Weakness

these commodities specifically from China. The second main factor was internal and had to do with the macroeconomic policies adopted by the new Government who adopted fiscally contractionary policies while still expanding without realizing the expansion was heavily influenced by government stimulation of wages and consumption spending. With less revenue the government needed to cut back on public spending thus decreasing the drivers they had for growth. Experts believe about 30% of the problem was caused externally due to demand and price decreases in exports and the remaining 70% was caused by political instability between new regimes and poor macroeconomic policies[17].

III. Literature Review

There has been a significant amount of papers written on Latin America in terms of both crises and the overall structure of the economy. Reviewing each individual piece of literature would be next to impossible. For this paper, a review of relevant articles pertaining to the causes of Latin American financial crises and the structure of Latin American economics and finance was completed. The works span over thirty years from various points of view in an attempt to capture as wide a range of ideas and studies as possible.

The paper, “Financial Reverberations: The Latin American Banking System During the Mid-1990s” by Walter Thomas Molano was written in 1998 and examines the fiscal and monetary responses to Latin American financial crises throughout the 1990’s. The paper cites liberalization of the banking sector and a surge of capital inflow to a banking system too loosely regulated and susceptible to shocks as the major causes of the volatile 1990’s18. Molano argues that governments that led pro-market policy responses registered the lowest fiscal and macroeconomic costs, while those that pursued non-market responses registered the highest

17 FGV (2016-05-05). A Crise de Crescimento do Brasil (in Portuguese). Elsevier Brasil. ISBN 9788535266382.
18 Molano, Walter Thomas, Financial Reverberations: The Latin American Banking System During the Mid-1990s (August 1997).

costs. The Argentine government implemented a pro-market approach and spread the cost of the bailout across shareholders and depositors it ultimately prevented worse macroeconomic outcomes that would be seen in Mexico and Venezuela due to their non-market approaches.

Tomasz Korol wrote the paper, “Early warning models against bankruptcy risk for Central European and Latin American enterprises”, in 2012 that attempted to forecast the bankruptcy risk of companies in both Europe and Latin America. This paper was helpful in developing a working model for the current study of Latin American economies as it helped explain some of the variables at work in enterprise bankruptcies. The study looked at sixty companies listed in Mexico, Argentina, Peru, Brazil and Chile as well as over one hundred listed in Eastern Europe[19]. The two different regions were used to control for structural differences within economies from various areas of the world. A more statistical and flushed out model was utilized in this study and it isn’t directly applicable to the study of our paper, however it was instrumental in the development of this studies model.

“Banking Crises in Latin America: Experiences and Issues” is a book by Liliana Rojas-Suarez and Steven R. Weisbrod published in 1996. In the book, the authors argue that the financial crises in Latin America are significantly different than in other regions due to regional nuances that create specific circumstances needed for more frequent and severe crises. These differences consist of lower financial intermediation, investors being less willing to commit long-term funds and higher volatility within deposit markets. Additionally, the accounting standards are weak to nonexistent and the legal framework of financial markets is years behind other established regions[20]. The biggest takeaway from the paper is the importance of

[19] Tomasz Korol, Early warning models against bankruptcy risk for Central European and Latin American enterprises, Economic Modelling, Volume 31, 2013, Pages 22-30, ISSN 0264-9993,

[20] Rojas-Suárez Liliana, & Weisbrod, S. R. (1996). Banking crises in Latin America: experience and issues. Washington, D.C.: Inter-American Development Bank, Office of the Chief Economist.

liberalization with regulations and the necessity for Latin American specific solutions to Latin American financial crises.

Ernesto Talvi wrote the article "Thirty-five years of recurring financial crises in Latin America: Toward a new (and better) paradigm?" as an op-ed for Brookings. His article spoke about the rise of the Washington consensus in the early 1980's in Latin America. The Washington Consensus was built on the pillars of "macroeconomic discipline, trade and financial openness of the economy, market deregulation, and privatization of state-owned enterprises"[21]. The article goes on to argue that a pillar has been missing and that there should be an international lender of last resort for emerging market economies because the large flight of capital that comes with minor shocks to the regional economies makes the crises far worse than they need to be. Talvi ends his article stating how the changes to the international finance architecture has allowed Latin America to make giant leaps in terms of their ability to deal with future financial crises and hope that they will be far less prevalent moving forward.

The Currency Game: Exchange Rate Politics in Latin America is a book written in 2002 by Frieden and Stein. The book explores relationship between politics and the economy in Latin America, specifically in terms of currency and interest rate policies. The overall findings in the book are that there are clear patterns between economic stability and currency and interest rate decisions. However, at times elections and special interests play a larger role in these decisions[22]. The authors argue that there needs to be significantly more research to determine the effect of politics on the economy and political economies overall in Latin America. This article helped in

21 Talvi, E. (2016, July 28). Thirty-five years of recurring financial crises in Latin America: Toward a new (and better) paradigm?

22 Frieden, J. A., & Stein, E. (2002). The currency game: exchange rate politics in Latin America. Washington, D.C.: Inter-American Development Bank.

the understanding of how politics at times affects the decision making behind seemingly inappropriate fiscal and monetary policies during and not during crises.

One of the most relatable pieces of literature reviewed for this paper was the article "Commodity Prices and the Business Cycle in Latin America: Living and Dying by Commodities?" written by Camacho and Perez-Quiros in 2014. In the paper they analyze the interactions between commodity prices and GDP growth of the largest Latin American economies. The countries they looked at were Argentina, Brazil, Chile, Colombia, Mexico, Peru, and Venezuela using a Markov-switching impulse response function[23]. One of the interesting things they found was that shocks to commodity prices also tend to lead to regime shifts which add to financial crises. The authors recommend some type of countercyclical stabilization policy to be implemented.

Given the prior literature there appears to be three main causes throughout all thirteen financial crises. The first commonality among the financial crises is the prevalence of unstable governments. The Latin American region is well known for having a tumultuous political history over the past century and the unrest has led to constant financial and economic problems and crises in the region. The instability of the government adds to the second commonality of poor macroeconomic and exchanger rate policy decisions. This can be seen in the Mexican peso crisis among other crises where the central bank and government took steps that inadvertently made the crisis far worse than it needed to be. The final commonality among the studied financial crises was an overdependence on commodity exports among countries. This left many of the countries susceptible to swings in the prices of those commodities that could quickly decimate an unregulated economy.

[23] Maximo Camacho & Gabriel Perez-Quiros (2014) Commodity Prices and the Business Cycle in Latin America: Living and Dying by Commodities?, Emerging Markets Finance and Trade, 50:2, 110-137, DOI: 10.2753/REE1540-496X500207

The remainder of the paper examines the circumstances above on a quantitative basis to establish whether changes in commodities, exchange rates or interest rates effects the likelihood of financial crises.

IV. Methodology and Data

For the quantitative analysis the study used a Logit Binary Regression Model to run a logistic function to model a binary dependent variable. The point of the model is to determine the effect of each independent variable on the control variable of financial crisis. The formula and explanation can be found below:

$$\boldsymbol{ln}(\boldsymbol{Financial\ Crisis}/(\mathbf{1} - \boldsymbol{Financial\ Crisis})) = \boldsymbol{\beta}\mathbf{0} + \boldsymbol{\beta}\mathbf{1}\ \boldsymbol{Crude\ Oil} + \boldsymbol{\beta}\mathbf{2}\ \boldsymbol{Copper} + \boldsymbol{\beta}\mathbf{3}\ \boldsymbol{Iron} + \boldsymbol{\beta}\mathbf{4}\ \boldsymbol{Gold} + \boldsymbol{\beta}\mathbf{5}\ \boldsymbol{Interest\ Rates} + \boldsymbol{\beta}\mathbf{6}\ \boldsymbol{Currency}$$

The model treats financial crises as a yes/no binary choice and each independent variable will produce an odds ratio that shows the percentage change each corresponding percentage change in the variable would increase or decrease the likelihood of a financial crisis. The variables chosen were a mixture of commodities, rates and currency values to capture the bulk of what the qualitative research showed were commonalities between Latin American Financial crises. These variables were chosen as the region is heavily dependent on commodity exports as shown in the research done above. Interest rates and currency exchange rates were chosen as exchange rates are important in commodity-based economies and interest rates are crucial to any economy. The findings from this model will be paired with the qualitative research to present a fuller understanding of what is at work in Latin America.

The study period covered the years 1970-2020. For this period, monthly price data was sourced from a variety of resources including Bloomberg, Federal Reserve Economic Data, and numerous Latin America central banks databases. Bloomberg was important in getting historical prices for Latin American exports in the commodities sector such as the price of gold, iron, copper and crude oil. The Federal Reserve Economic Data was integral in getting currency exchange rates to US dollars. The paper used the largest economies in Latin America and their central bank databases to access the sovereign debt interest rates over the past fifty years. The data for each variable represents the price or percent of each of the underlying assets. These assets were chosen after lengthy qualitative research that aimed to answer the question of what has caused Latin American financial crises in the past. These assets were promising measures of commonalities between crises.

V. Results

The findings of the paper will be split into two sections, the qualitative and quantitative aspects. The qualitative conclusions were found after extensive research of prior literature on each individual crisis as well as the region as a whole. The findings were somewhat predictable but at times surprising. The best explanation for financial crises in Latin America is that they are caused by a mixture of political instability within the region, inept policy makers when it comes to currency and macroeconomic decisions and an overreliance on commodity exports that put the regional economies at risk of financial contagion.

The first commonality amongst Latin American Financial Crises was that of some form of political instability. One would imagine it was more prevalent in the early years of the papers study and has subsided since then but that is not the case as most, if not all, of the recent crises in the past ten years have had some aspect of political instability involved. This instability can be as simple as a democratic shift in the leading party that coincide with another catalyst for chaos or messy coups and oustings of current leaders such as Brazil’s Crisis in the late 2010’s. This observation is somewhat predictable as instability within politics makes foreign investors slow to be willing to increase their exposure in fear of regime changes or drastic shifts in the treatment of foreign investors by the current regime. Venezuela as of late is a perfect example of how political instability without regime changes can have drastic effects on crises within the country.

The second commonality amongst Latin American Financial Crises is a general ineptitude amongst politicians in terms of appropriate macro and currency based economic decisions. The easiest place to see this is in the regions general lack of understanding of what is known as the trilemma of international finance that states it is impossible to have a fixed foreign exchange rate, free capital movement and an independent monetary policy at the same time[24]. The theory was proposed in the late 20th century by John Fleming and Robert Mundell largely based on empirical studies and observations. The Latin American region is a perfect area to see this theory in action as over half of the crises looked at stemmed from poor monetary policy, starting with the Mexican Peso Crisis in the late 1980's as Mexico tried to peg their currency to the U.S. dollar, maintain free capital flow into and out of the country and fend off recessionary signals through independent monetary policy. They ultimately failed bringing much of the confidence investors had for all of Latin American economies with them and every country to try the same since has failed.

The final major commonality found in Latin American Financial Crises was the over-dependence on commodity exports. This is found around almost all third world and emerging market economies and is usually the ultimate shock to the economy that leads to a full-blown crisis. Much of Latin America is resource rich in many high demand commodities such as crude oil, copper, iron and gold with large percentages of each countries' GDP attributed to these industries. This leaves the economies susceptible to sudden decreases in commodity prices which

24 Boughton, James M. (2003). "On the Origins of the Fleming-Mundell Model" (PDF). IMF Staff Papers. 50 (1): 1–3. Retrieved 17 April 2019.

affect the banking and financial systems through loan defaults. In emerging economies, many banks will give loans with future revenue as collateral and as revenue declines so too does the companies' ability to pay back those loans. Almost every financial crisis observed in this paper was either affected by or coincided with a price collapse in commodity prices from the Uruguayan Banking Crisis to the most recent Brazilian Financial Crisis.

The findings from the quantitative analysis, seen below, are consistent with the qualitative research above. The table below is broken up into seven different columns, but the three most important are the variable column, the odds ratio column and the P value column. The variable column is the first column in the table and shows what variable is being tested to give a binary outcome of crisis vs. no crisis as the underlying value of the asset changes. The Odds Ratio is a ratio that shows the percentage increased likeliness of a financial crises given an increase in the

crises	Odds Ratio	Std. Err.	z	P>|z|	[95% Conf.	Interval]
crudeoil	1.041017	.0099549	4.20	0.000	1.021688	1.060713
copper	1.011747	.0022599	5.23	0.000	1.007327	1.016186
iron	.9507642	.0113192	-4.24	0.000	.9288357	.9732103
gold	1.001613	.001037	1.56	0.119	.999583	1.003648
interest	1.086016	.0214634	4.18	0.000	1.044753	1.128909
currency	2.527676	.4023181	5.83	0.000	1.85029	3.453052
_cons	.0000452	.0000556	-8.14	0.000	4.06e-06	.0005033

underlying asset. The P value column shows how accurate the results are in terms of outliers with a P score of 0 being ideal. With this in mind it becomes clear that currency, interest rates and crude oil prices coincide with financial crises better than the other variables tested. What this data shows is that there could be a strong connection between these assets and financial crises in Latin America.

There are a few shortfalls with the model that should be noted with these conclusions. For starters, the paper had no way of distinguishing between correlation and causation on a quantitative basis. Some of this can be cleaned up with the pairing of qualitative research and understanding when prices of certain assets changed in relation to the onset of a financial crisis. Secondly, the databases used were as complete as possible, however they are only as reliable as the sources. Bloomberg and FRED were incredible resources but the Central Bank databases in Latin America were at times incomplete and cumbersome to deal with. Overall, pairing the qualitative and quantitative research together gives a good understanding that Financial Crises in Latin America can be attributed to political instability, inept decision making in terms of macroeconomic policy and over reliance on commodity exports.

VI. Conclusion

After extensive research this paper has put forth the argument that Latin American Financial Crises can be attributed to a large number of causes but share some commonalities between them. Many crises are caused by political upheaval. Whether through regime changes or through military intervention. Crises can also be started or worsened by poor macroeconomic policy decisions, specifically when it comes to a nation's currency and its monetary and fiscal policies. One of the strongest front runners of financial crises in Latin America is the prices of commodities that the region exports such as crude oil. This paper is not trying to claim that these are the sole causes of financial crises but rather that amongst a large population of crises, these causes stood out as repeat offenders.

These findings could be important for a number of reasons. The most obvious one is the ability this knowledge would give someone in understanding the region on a financial and economic level. Being aware of these causes could help foreign investment know when to pull out or lessen exposure to the region with confidence. The knowledge could also help the region themselves understand why it has been plagued with so many crises in the past half century. A strong argument can be made that during these crises, support from outside countries such as the United States doesn't address the underlying issues and just gets the countries out of debt enough to keep going. Latin American financial crises should be fixed with Latin American tailored policy changes such as shifting away from such a heavy dependence on commodity exportation or working to understand the trilemma of international finance and sticking to just two mandates.

In terms of where the region stands now in terms of these commonalities, the answer would be much different if this paper was being written six months ago. As it stands, some commodity prices such as crude oil have taken a nosedive in recent months to almost historic lows while others such as gold have reached historic highs. Political stability in some countries has never been stronger while in some countries such as Venezuela, Chile and Brazil cracks are beginning to form in the regimes and the publics opinions of them. The outbreak of Covid-19 led to an initial flight of capital from emerging markets during the pullback in February and March however, things have seemed to steady at least for now. Latin America stands at the precipitous of either a miraculous turnaround in a few decades in their ability to handle financial crises or slipping back into the same routine and suffering again and again.

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