THE CURRENCY BOARD MONETARY SYSTEM – A SURVEY OF FINANCIAL CRISES

Miloni Madan and Alec Maki

Johns Hopkins Institute for Applied Economics, Global Health, and Study of Business Enterprise
The Currency Board Monetary System – A Survey of Financial Crises

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About the Series

The Studies in Applied Economics series is under the general direction of Prof. Steve H. Hanke, co-director of the Institute for Applied Economics, Global Health, and Study of Business Enterprise (hanke@jhu.edu). This working paper is one in a series on currency boards. The currency board working papers will fill gaps in the history, statistics, and scholarship of the subject. The authors are mainly students at The Johns Hopkins University in Baltimore. Some performed their work as summer research assistants at the Institute.

About the Authors

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Abstract

We survey financial crises in currency board systems to examine potential flaws in these regimes. We examine to what extent currency boards were involved in the lead-up to crises in Argentina, Bermuda, Bulgaria, Estonia, India, Hong Kong, Lithuania, Palestine, the Philippines, and the Straits Settlements (Singapore). Using contemporary accounts and authoritative later analyses, the paper makes conclusions about the root causes and ultimate triggers of these financial crises in relation to currency boards.

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Keywords: Currency board, financial crises, Argentina, Bermuda, Bulgaria, Estonia, India, Hong Kong, Lithuania, Palestine, Philippines, Singapore, Straits Settlements.

JEL codes: G01, N20.
Introduction

Granted that there is only limited research on currency board regimes, detailed research into financial crises in these systems is even rarer. This paper seeks to further knowledge in this area by extracting high quality, after-the-fact analysis from secondary sources, as well as contemporary reporting from primary sources.

By asking a specific set of questions, we are able to best set a framework for analyzing these financial crises and look at them with a common eye. We asked the following questions when researching and investigating these accounts:

1. What fueled the crisis? What was the real trigger and root cause?
2. What was the nature of the crisis? What happened?
3. What aspects of society were affected by the crisis (financial institutions, government finance, etc.)?
4. What was society’s perception of the crisis? Who or what was blamed?
5. What figures, if any, exist to quantify the extent of the crisis?
6. How and when was the crisis resolved?

We apply these questions to eight countries, which we investigate in chronological order. To find cases we examined Reinhart and Rogoff (2009) as well as a number of writings on currency boards. The countries we found seem to be the only ones that have experienced incipient or actual financial crises under currency board or quasi currency board systems, although we welcome suggestions from other researchers of other possibilities to investigate. Some currency boards arose in the aftermath of crises that had affected the previous monetary systems, but here we only discuss episodes arising while the currency boards existed.¹ We have omitted certain cases from this analysis that involve special circumstances; the World War II suspension of payments by the currency board of Malaya when the territory was occupied by Japanese forces is an example in which the currency board was not the subject of the crisis.

We also omit a number of cases in which small financial institutions failed but there was no contagion to other institutions and little or no government intervention occurred. Typically, the small institutions were locally owned, as opposed to being branches of the large British or other international banks that have dominated the banking systems in most territories with currency boards. An example is the runs and failures affecting some small locally owned banks in Nigeria in the early 1950s (Schuler 1992, p. 192, citing Newly and Rowan 1954, pp. 238-239).

¹ There was a run on the Ottoman Bank in Cyprus in 1914, at the start of World War I; it was nearly coincident with the establishment of the government note issue of Cyprus, which later became a currency board but was not one initially because notes were not redeemable on demand. At about the same time, Gibraltar established a government note issue that was or later became a currency board, to alleviate a bank run (Krus and Schuler 2014, pp. 76, 114).
### Summary of Financial Crises in Currency Board Systems
(listed by date of first crisis; continues on following pages)

<table>
<thead>
<tr>
<th>Country</th>
<th>Crisis Dates</th>
<th>Cause</th>
<th>Brief Description</th>
<th>Resolution</th>
</tr>
</thead>
<tbody>
<tr>
<td>India</td>
<td>1907-1908</td>
<td>Crop failures; U.S. financial panic of 1907</td>
<td>Bank runs but no failures; coincided with political turbulence</td>
<td>Government withdrew gold and sold securities; railroad construction fundraising</td>
</tr>
<tr>
<td>The Strait Settlements (Singapore)</td>
<td>1907-1909</td>
<td>Unexpected rise of value of silver; general financial distress of period</td>
<td>Run on gold; issuance of less valuable coins</td>
<td>Remained on sterling exchange rather than pure gold standard</td>
</tr>
<tr>
<td>Argentina</td>
<td>1912-1914</td>
<td>Unsustainable growth; crop failure; panic surrounding start of World War II</td>
<td>Decreased production and trade; closing of international exchanges; runs on private banks</td>
<td>Abandoned of gold-standard; institutional policy changes</td>
</tr>
<tr>
<td></td>
<td>1929</td>
<td>U.S. Great Depression</td>
<td>Capital/gold outflow,</td>
<td>Used gold to service debt obligations; floated currency</td>
</tr>
<tr>
<td></td>
<td>1995</td>
<td>Contagion from Mexico’s Tequila Crisis</td>
<td>Deposit withdrawals; high interest rates</td>
<td>Government closed/privatized poorly managed banks</td>
</tr>
<tr>
<td></td>
<td>2001-2002</td>
<td>Asian, Russian, and Brazilian financial crises; prolonged recession</td>
<td>Falling prices; decrease in trade; more aggressive and involved government; debt trap</td>
<td>New government; general international economic improvement</td>
</tr>
<tr>
<td>The Philippines</td>
<td>1919-1922</td>
<td>End of World War I caused drop in demand for exports; mismanagement by government</td>
<td>Loan defaults; reserves depletion; volatile exchange premiums; draft sale suspensions</td>
<td>Return of exchange rates to parity; revival of export trade</td>
</tr>
<tr>
<td>Palestine</td>
<td>1935-1936</td>
<td>Religious tensions; international political instability</td>
<td>Bank runs; riots and violence</td>
<td>Government instilled confidence; diffusion of anxiety over time</td>
</tr>
<tr>
<td></td>
<td>1940</td>
<td>Panic regarding start of World War II</td>
<td>Bank runs; failure of small financial institutions</td>
<td>Improved economic conditions and demand from World War II; liquidity of banks</td>
</tr>
</tbody>
</table>

(Continued)
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Hong Kong</td>
<td>1941-1945</td>
<td>Japanese occupation</td>
<td>“Duress notes” issued by Japanese</td>
<td>End of World War II; reinstitution of currency board by British</td>
</tr>
<tr>
<td></td>
<td>1961</td>
<td>Rapid expansion of banking sector; rising property prices</td>
<td>Near failure of Liu Chong Hing Bank</td>
<td>Support from HSBC and Chartered Bank</td>
</tr>
<tr>
<td></td>
<td>1965</td>
<td>Falling property prices; Hang Seng Bank rumors</td>
<td>Runs and bank failures</td>
<td>Support from HSBC and Chartered Bank; HSBC took control of Hang Seng</td>
</tr>
<tr>
<td></td>
<td>1987</td>
<td>Stock market crash of 1987</td>
<td>Collapse of Hang Seng Index; suspension of trading</td>
<td>Support from HSBC and Chartered Bank; quick international recovery</td>
</tr>
<tr>
<td></td>
<td>1991</td>
<td>Scrutiny of BCCI; false rumors</td>
<td>Closing of BCCI in Hong Kong; runs on major banks</td>
<td>Dissipation of rumors; government reform</td>
</tr>
<tr>
<td></td>
<td>1997-1998</td>
<td>Asian Financial Crisis</td>
<td>Movements in HK$; bank and business runs; collapse of Hang Seng Index</td>
<td>Government active on Hang Seng Index; limitations on interbank liquidity</td>
</tr>
<tr>
<td></td>
<td>2008</td>
<td>Global financial crisis</td>
<td>Run on Bank of East Asia</td>
<td>Hong Kong Monetary Authority issued statement in support</td>
</tr>
<tr>
<td>Bermuda</td>
<td>1975</td>
<td>Regulators observed problems at Bermuda Provident Bank</td>
<td>Government took over Bermuda Provident Bank</td>
<td>Creditors received 75 cents on the dollar</td>
</tr>
<tr>
<td></td>
<td>1979</td>
<td>Regulators observed problems at Rego Trust and Savings Ltd.</td>
<td>Run on Rego Trust and Savings Ltd.</td>
<td>Bermuda Monetary Authority withdrew operating license and took over administration</td>
</tr>
<tr>
<td>Estonia</td>
<td>1992</td>
<td>Underdeveloped system; asset freezes from Moscow</td>
<td>High inflation; falling GDP per capita; failure of three major banks</td>
<td>Eesti Pank rescued and reorganized banks; other banks filled market gaps</td>
</tr>
<tr>
<td></td>
<td>1997</td>
<td>Asian Financial Crisis; speculative attack on kroon</td>
<td>Decreased investment; banking panic</td>
<td>Liquidity dried up; widened forward interest rate spreads widened</td>
</tr>
<tr>
<td></td>
<td>1998</td>
<td>Asian Financial Crisis; Russian financial crisis</td>
<td>Decreased exports; high interest rates</td>
<td>Eesti Pank purchased and consolidated banks; general growth of European economy</td>
</tr>
</tbody>
</table>

(Continued)
<table>
<thead>
<tr>
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<th>Cause</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Lithuania</td>
<td>1995</td>
<td>Adjustment of banking system to capitalist economy</td>
<td>Failure of six banks; bank mergers</td>
<td>Bank of Lithuania provided some liquidity; government reform</td>
</tr>
<tr>
<td></td>
<td>1998-2000</td>
<td>Asian Financial Crisis; Russian financial crisis</td>
<td>Decreased trade; volatile interest rates; general economic recession</td>
<td>Crisis dissipated; lower reserve requirements</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>2015</td>
<td>Rapid growth of fourth-largest bank, Corpbank</td>
<td>Run on Corpbank</td>
<td>Corpbank failed</td>
</tr>
</tbody>
</table>
1. India (1907-1908)

The British colonial administration established the Paper Currency Department in India on March 1, 1862 to be the monopoly issuer of the notes for British India (today India, Pakistan, Bangladesh, and Myanmar [Burma]). The Paper Currency Department existed until April 1, 1935, when the Reserve Bank of India replaced it. During most of the existence of the Paper Currency Department, coins, notably the silver rupee, far exceeded notes in circulation. India had a number of banks, but they only served a small and relatively wealthy portion of the population.

The Paper Currency Department operated as a quasi-currency board during two periods. From January 1872 to June 25, 1893 the value of the rupee was fixed at 1 rupee = 165 fine troy grains of silver. After an interlude of floating, from January 1898 to December 19, 1916 the value of the rupee was fixed at 1 rupee = 1 shilling 4 pence sterling, or 1 rupee = 7.53344 troy grains gold (Weintraub and Schuler 2013, pp. 5, 7, 14, 17). During the latter period India experienced a financial crisis.

1907-1908. In mid-1907, prices of jute, an Indian fiber used to produce rope and other threads, collapsed, negatively impacting the sale of Council bills (short-term Indian government securities) in London and pulling India into a recession (Conant 1909, p. 710). In October 1907, the United States experienced a three-week long financial crisis, aggravating a recession that had begun earlier in the year. During the crisis period, the New York Stock Exchange was down almost 50 percent from the prior year resulting in several runs on banks and trust companies (Conant 1909, p. 711). American depositors panicked, withdrew their money in gold, and hoarded it. During this same period, the Bank of England increased its discount rate to 7 percent, a very high level for the era, which made it nearly impossible to meet the exchange demands of the Indian government (Supplement to the Gazette of India, March, 21, 1908, p. 709, cited by Conant 1909, p. 710). The combination of these adverse changes made Council bills almost impossible to sell, causing a sharp depreciation of the exchange rate. In response, the government ceased paying out gold in exchange for silver rupees (Weintraub and Schuler 2013, p. 7). Furthermore, to support the exchange rate, the government released significant amounts of gold held in London on several occasions: the value of the Indian Branch of the Gold Standard Reserve fell from 24 crores of rupees (240 million) in October of 1907 to 17.5 crores of rupees (175 million) in March of 1908 (Abrahams 1914, p. 40). (The Gold Standard Reserve was a fund to assure convertibility into gold, including for silver rupee coins; it was separate from the reserves of the Paper Currency Department.) Though these actions did absorb the effects of the temporary crisis, India met further distress in the following months.

In April of 1908, India experienced a full-blown crisis resulting from a large wheat crop failure, which greatly reduced exports, lowered India’s creditworthiness, and caused a degree of famine. As a result, Indian merchants incurred an excess of debt resulting from purchases in Europe that they could not afford to pay off. Additionally, during this
period, India was not only placed under economic stress, but experienced political turbulence as the Indian Nationalist Party displayed resistance to the British government; for example, several British citizens were killed in the bombing of the northern city of Muzaffarpur in April of 1908 (Chopra 1979). The combination of political and economic uncertainty only served to exacerbate the situation. Although there were no bank failures during this period, these circumstances caused significant panic among the Indian people, whose actions severely threatened financial institutions: deposit withdrawals amounted to £1.1 million, which represented a large proportion of total deposits (Abrahams 1914, p. 40).

To counteract the crisis and increase its ability to pay its financial obligations, the government withdrew £2 million of gold in London and parted with £2 million in securities (Statist 1908, p. 1105, cited by Conant 1909, p. 711). Furthermore, the government established a fundraising program for railroad construction to stimulate the economy, improve domestic infrastructure, and prevent further outflow of capital. Under this program, the government issued one-year Council bills and added half of the profits on coinage and the interest on securities to the railroad construction funds until the gold reserve reached a comfortable level of £20 million (Economist, June 6, 1908, p. 1188, cited by Conant 1909, p. 711). Although these actions were criticized and economists feared they would damage the gold reserve, the program served to strengthen the economy and help resolve the crisis by late autumn of 1908. On an annual basis no slowdown is evident in bank deposits in the aggregate, as can be seen in Chart 1.2.
Data and Charts

**Chart 1.1.** Source: Historical Financial Statistics.

**Chart 1.2.** Source: Great Britain, India Office (1915).
2. The Straits Settlements (1907-1908)

Like several other British colonies of the time, the Straits Settlements (whose most important component was Singapore) had a currency board, established on 1 May 1899. The Straits dollar was fixed to the Spanish silver peso at a rate of one-to-one.

Under Ordinance No. 4 of 1899, the government established many of the specifications of the currency board arrangement. The Note-Guarantee Fund comprised three parts: the Coin Section, which consisted of legal tender coins, not less than one-half (originally two-thirds) of the value of currency in circulation; the Investment Fund, which consisted of United Kingdom, Indian, and other sterling securities up to one-half (originally one-third) of the value of currency in circulation; and the Depreciation Fund, which being zero at the start was to receive annually from the income of the securities of the Investment Fund an amount equal to one percent of the cost price of the securities. Furthermore, the backing of issued notes was about 100 percent to 105 percent to ensure notes were fully convertible into silver coins (Lee 1990 p. 11). Any further income was to be paid to the government. If reserves fell below 100 percent the government had to replenish the shortfall (King 1957, pp. 17-19, cited by Schuler 1992, p. 164).

1903-1906: Not a crisis period. In the late 1890s, several East Asian countries switched from silver standards to gold exchange standards as trade with European countries on gold became more important. Following a recommendation from a British committee of economists, the Straits Settlements began issuing its own silver dollars in 1903. (Previously the colony had issued only smaller coins and had used foreign silver dollars.) By limiting the supply of Straits dollar coins to less than the demand, it intended to divorce the Straits dollar from silver. As a transitional measure for moving from the silver standard to the gold standard, the Board of Commissioners of Currency established a managed float. The monetary system of the Straits Settlements was not a currency board during the period of floating.

Beyond the introduction of the silver dollar, 1903 was a noteworthy year because the first local bank, Kwong Yik Bank, was established; before this, the Straits Settlements banking system was dominated by foreign banks (Lee 1986, p. 43).

Ordinance No. 3 of 1905 provided that the currency board could issue notes in exchange for gold received in London or Singapore at such rate of exchange as it might set in agreement with the Straits government and the British Secretary of State for the Colonies.

On February 29, 1906, the government of the Straits Settlements fixed the rate of exchange at S$60 per £7, thereby re-establishing the currency board arrangement. Since sterling was on the gold standard, the Straits Settlements were effectively on the gold-

**1907-1908.** However, the rising price of silver since the introduction of silver coins was problematic for the currency board. The plan for switching from silver to gold after a period of managed floating had assumed that the gold price of silver would continue to fall as it had done in the recent past. Instead, the rising price, as depicted in Chart 2.1, nearly wrecked the reform because the Straits dollar’s value as metal exceeded its face value. In response, the government introduced newly minted coins with decreased metal content in 1907 (Lee 1986, p. 13).

The gross circulation of notes and dollars contracted by approximately 22 percent throughout 1907 and 1908. However, this value is relatively low given the strength and breadth of the run. During the period two factors resulted in some monetary easing: the demonetization of Straits dollars in Sumatra and Siam and the payment of a sum by the government to the Tanjong Pagar Dock Company as compensation for taking over the company’s dock works in Singapore harbor (Anthonisz, p. 119).

In response to the powerful run on the Currency Commissioners, the government enacted Ordinance No. 27 in November 1908, which allowed the currency board to hold gold coin, rather than just silver coin as was previously permitted. The Straits Settlements abandoned its original scheme to implement a pure gold standard and instead remained a sterling exchange standard due to the problems that faced local banks after the run of 1907-1908 (Lee 1986, p. 15). The currency board responded by selling pound sterling assets in London, which proved to be satisfactory for all parties involved. In principle, note holders could redeem notes in gold in London, but in practice few wanted gold rather than sterling (Schuler and Krus 2014, p. 221).
Data and Charts

Silver Price and Dollar/Sterling Exchange Rate, 1867-1938


Chart 2.2. Source: Bolt and van Zanden (2014).

Argentina established the Conversion Office (Caja de Conversión) in 1890 with the intention of restoring convertibility of the Argentine peso into gold. However, through the 1890s the office merely served as a conduit for issues of fiat money (Schuler 1992, p. 73). Argentina's Conversion Office operated as a currency board from late January 1903 to August 1914, during which 2.27 paper pesos were equivalent to one gold peso (itself equal to 1.45161 grams of pure gold, a rate established in 1881 and abandoned in practice in 1885). After a period of non-convertibility, the Conversion Office returned to a currency board arrangement from August 1927 to December 1929, at the pre-1914 parity. Six years later the Central Bank of Argentina (Banco Central de la República Argentina) was established, operating as a quasi currency board decades afterwards, from April 1991 to January 2002. Argentina experienced four notable episodes of financial distress during these periods: pressure on select banks leading up to the Conversion Office's suspension of convertibility into gold at the start of World War I; another suspension by the Conversion Office soon after the Wall Street crash signaled the start of the worldwide Great Depression; the so-called Tequila Crisis of 1995; and the crisis leading to the end of the quasi currency board.

1912-1914. With the institution of a fixed exchange rate with gold, the Argentine economy grew steadily, and deposits grew rapidly through 1912. In fact, deposits and loans of private banks grew much faster than GDP: the ratio of deposits and loans to GDP roughly doubled throughout this period. However, such rapid growth was not necessarily healthy for the banks, whose reserves slowly shrank relative to deposits. Much of Argentina's growth during this period can be attributed to its connection with Great Britain; much of the capital investment came from Great Britain, whose investors were interested in the resource-rich region (Taylor 1992, p. 919). Furthermore, Argentina benefitted from rising prices: export prices rose faster than import prices—a trend that had favorable effect on the country's trade balance.

The international environment was favorable during this period, known today as the Belle Époque. The international economy was characterized by high financial and monetary liquidity in international markets due to a sustained increase in the world stock of gold. This expansion reached 3.5 percent annually between 1890 and 1914, well above the 1.5 percent annual average growth between 1866 and 1890 (Friedman and Schwartz 1963, p. 137, cited by della Paolera and Taylor 2001, p. 125).

Beginning in 1912, disturbances in the domestic economy led to substantial withdrawals of cash from the private banks. Some of this worked to the advantage of the majority government-owned Banco de la Nación, which was viewed as a safer option for depositing money due to its size and significance to the government. While panic generally subsided quickly, the Bank of England's interest rate was raised in late 1912, tightening monetary conditions (della Paolera and Taylor 2003, p. 317).
The crisis was triggered when the 1913-1914 crop did extremely poorly. Cereal exports, a driving staple of the Argentine economy, fell from 322 million gold pesos in 1912-1913 to 182 million gold pesos in 1914. By June 1914, the poor crop had triggered a generalized depression. The nonagricultural sector’s production fell 15 percent from 1913 to 1914, and another 10 percent from 1914 to 1915. During the period from 1912 to 1917 overall, Argentina’s real GDP slid 19 percent despite population growth of nearly 14 percent (della Paolera and Taylor, 2003, p. 317). In the first quarter of 1913, gold continued to be imported into Argentina at an increased rate of 35 million gold pesos; in the second quarter 10 million, gold was still being imported at the rate of the period year. However, in the second half of the year 42 million gold pesos were exported. In 1913 as a whole, the money supply fell by 5.3 percent while bank deposits decreased by 6.9 percent (della Paolera and Taylor 2001, p. 131).

Meanwhile, strife began affecting other parts of the world. On 27 June 1914, Archduke Franz Ferdinand was assassinated in Sarajevo, sparking the start of World War I. This event caused widespread panic and there was a flight to liquidity as foreign investors sold securities at exchanges around the world. The result was the collapse of asset prices as securities were dumped on the markets. In late July, the advancing threat of war caused the closing of most stock exchanges worldwide. The London Stock Exchange closed on Friday, 31 July 1914. Not only did this mark the end of the Belle Époque, but it also marked the shift of international financial leadership from London, on which Argentina was financially dependent, to New York (della Paolera and Taylor 2003, p. 318); this would have lasting impacts on Argentina’s continued development in the future.

The turbulence in the international markets created a period of distress in Argentina, whose immigrant communities maintained strong ties with their European homelands. In early August 1914, there was a run on deposits of unexpected dimensions (della Paolera and Taylor 2001, p. 134). Private banks were particularly affected by the demand for liquidity, the largest and most important being Banco Español, Banco Italia, Banco Frances, and Nuevo Banco Italiano. As can be seen in Chart 3.3, total deposits fell by nearly 20 percent from 1912 to 1914; deposits of private banks fell over 45 percent. One important exception is that the Banco de la Nación, which actually witnessed an increase in deposits, likely because consumers saw the large bank as a safe place to keep their deposits, especially in comparison with private banks.

Throughout the period of uncertainty between 1912 and 1914, the stock prices of private banks, large and small, were volatile. For example, the stock of Banco Español performed strongly throughout 1912 and 1913 when the crisis started, and only began to fall in 1914. The stock price fell from 180 in January 1914 to 100 in October 1914. It was later revealed that Banco Español had begun cannibalizing its cash to issue dividends in 1914 (The Economist, 24 March 1924, cited by della Paolera and Taylor 2003, p. 320). Banco Español never truly recovered and ultimately failed in 1935.
1914-1927: Not a crisis period. The gold standard regime ended in 1914: external shocks and domestic policy choices made gradual, seemingly innocuous, changes in the institutional framework. From 1914 to 1927, Argentina’s currency was inconvertible; the window of the Conversion Office was, so to speak, closed (della Paolera and Taylor 2001, p. 165). Throughout this period, though, Argentina unilaterally did what it could to adhere to orthodoxy—suspension of convertibility in 1914 was seen as a temporary measure. There was a strict fidelity to the rigid association of the nominal quantity of money to the gold stock at the Conversion Office (della Paolera and Taylor 2001, p. 197).

Nonetheless, while the Argentine economy exited the 1912-1914 crisis period of uncertainty in the postwar period, it never quite returned to its pre-war levels of growth. The United States, as the new international financial leader, showed little interest in Argentina, which exposed the level of dependency the country maintained on Great Britain. According to Alan Taylor, a leading economic historian or Argentina, this dependency caused low savings rates among consumers, which played a major role in Argentina’s stagnant, and often insufficient, GDP per capita (Taylor 1992, p. 924). Over the next few years, Argentina exhibited dismal growth: from 1915 to 1930, the growth rate of GDP per capita fluctuated in the low single digits, with several years exhibiting negative values (Bolt and van Zanden 2014). From 1913 to 1935, the value of the banking industry declined by more than 50 percent (della Paolera and Taylor 1997, p. 8).

In December 1927, the gold standard was re instituted at the pre-1914 parity. On the surface, the system that now existed did look, for all intents and purposes, very much like the one that had worked so well up to 1913. Yet, certain crucial elements had been allowed to change, and the banking sector—including the Banco de la Nación—had fallen into poor shape (della Paolera and Taylor 2001, p. 186).

1929. The start of Great Depression in the United States was an obstacle for Argentina’s goal of preserving currency board orthodoxy. Rising interest rates in the United States drew investment capital out of Argentina. From July 1928 to the end of 1929, Argentina suffered a gold outflow of 426 million pesos, which was roughly 40 percent of the combined reserves of the Conversion Office and the banks (Schuler 1992, p. 75). By December 1929, the balance-of-payments crisis was severe and the exchange rate was left to float after a mere two-year resumption of the gold standard. However, the Argentine Great Depression was mild and short-lived by international standards. From peak to trough (1929 to 1932), the domestic real output fell by “only” 14 percent and already surpassed its 1929 level by 1935 (della Paolera and Taylor 2001, p. 190).

Argentina’s persistence in achieving economic stability throughout the Great Depression is notable. In 1930, almost 80 percent of the money base was backed with gold—a backing ratio much higher than in any other gold standard country. In the subsequent years, Argentina used the gold to service external debt obligations, relieving stress on the economy and allowing the government to maintain orthodox fiscal policy (della Paolera and Taylor 2001, p. 192).
Argentina’s response constituted the decisive regime change in Argentina as it pursued a stable, long-term economic system (della Paolera and Taylor 2001, p. 200). The Conversion Office was officially replaced by the Central Bank of Argentina (Banco Central de la República Argentina, or BCRA) in May 1935.

1991: Not a crisis period. Argentina faced significant economic and political instability during the late 1980s. With negative GDP growth and hyperinflation, the country was on a dangerous path. It was in deep need of ameliorating actions to counteract these growing problems. In 1989, newly elected president Carlos Menem, though he had campaigned as a populist, responded by initiating a period of political and economic reform intended to wrench economic policy from its longstanding interventionist orientation to a free market approach. Menem encouraged privatization and deregulation and cut tax rates. Furthermore, under minister of the economy Domingo Cavallo, Argentina converted the BCRA into a quasi currency board under an arrangement that redenominated the local currency, the Argentine peso, and tied it to the U.S. dollar at a rate of one-to-one. The arrangement was known in Argentina as the convertibility system or simply “convertibility.”

These actions helped pull Argentina out of its slump, with inflation falling from 2,314 percent in 1990 to 29 percent in 1991; inflation continued to gradually decline as reform became fully implemented, falling below 4 percent in 1994 (Schuler 2003, p. 1, from Argentine government figures; IMF WEO figures differ but show similar trends). Furthermore, real GDP rebounded more than 10 percent during the first two years after currency reform, and growth stayed strong, exceeding 5 percent in 1993 and 1994.

1995. The rapid expansion of the economy in the early 1990s met a roadblock in 1995. In late 1994, Mexican suffered the so-called Tequila crisis, which arose from mistakes in Mexican government finance and monetary policy. On December 20 the Mexican central bank devalued the peso by about 15 percent and on December 22, in response to further pressure, it let the peso float, resulting in a further depreciation of roughly 15 percent. Investor confidence was shaken, Mexico asked for an international financial rescue, and the economy shrank 5.8 percent in 1995 (Economist 2004, n.p.). The situation in Mexico caused widespread concern that the Argentine peso would also be devalued. Although this fear was arguably irrational due to the limited economic linkage between the two countries, Argentina suffered large hits to its economy. Consumers withdrew 18 percent of deposits from Argentine banks and GDP fell 2.8 percent in 1995 (Blustein 2005, p. 28). Interest rates climbed until the government attempted to ease fears by securing financial packages from international financial institutions and private local investors (Hanke 1999, pp. 348-61). Further, the government strengthened the financial systems by closing or privatizing many poorly managed banks owned by provincial governments (Schuler 2003, p. 7). As a result, Argentina pulled out of this brief recession period and the country returned to its growth track in in 1996 and 1997.
2001-2002. However, in 1998, another, more intense financial crisis began to make ripples across the Argentinian economy. The Asian financial crisis that began in mid 1997 created a strong wave of panic during which Russia and Brazil (Argentina’s largest trading partner) experienced currency crises of their own in 1998 (Schuler 2003, p. 2). Commodity prices, including prices for some of Argentina’s major exports, fell sharply. Argentina’s international trade stagnated in 1998 and shrank in 1999. Beyond feeling the effects of the widespread Asian crisis, the election of a new president in December 1999 created a different set of issues. When Fernando De la Rúa entered office in December 1999, he reversed many of the policies that had strengthened the Argentine economy under Menem (Rabobank 2013, n.p.). De la Rúa increased government involvement, tightening regulation and raising taxes with the intention of cutting the budget deficit (Schuler 2003, p. 8). A top personal income tax rate of 35 percent, combined with payroll taxes totaling 32.9 percent and a value added tax of 21 percent, harmed consumer confidence and discouraged growth in the private sector (Schuler 2003, p. 10). In August of 2000, Professor Steve Hanke, the leading foreign analyst of the convertibility system, delivered a keynote speech at the annual meeting of the Institute of Financial Executives in Bariloche, concluding that the tax increase was impeding recovery and severely undermining investor confidence (Hanke 2002, p. 211).

As the economy contracted in 2000 and 2001, the governing coalition fractured in March 2001. This marked the beginning of what would be the crisis phase. Interest rates spiked and remained at high levels in response to the shifts within Argentina’s political structure.

On April 17, 2001, the new finance minister, Domingo Cavallo (Menem’s former minister of the economy), proposed to change the anchor of the Argentine peso from the U.S. dollar to a dollar-euro basket when the euro appreciated from its level at the time. On June 15 he announced a preferential exchange rate for exporters. These deviations from currency board orthodoxy, along with other changes in monetary policy, reduced the public’s confidence in the system. Furthermore, a shrinking private sector meant a shrinking tax base, suggesting that the state’s debt was not on a strong path. Throughout 2001, the premium on Argentine government securities compared to U.S. Treasury securities was rising quickly, from 3 percent to 13 percent in April and 20 percent by October (IMF 2003, p. 40). Not only did these climbing rates incite fear of default, but they also placed Argentina in a “debt trap,” wherein the high interest rates paid on loans would cause a dangerously quick and steep rise in government debt. Additionally, the monetary base fell from 15 billion pesos in 2000 to 11.9 billion pesos in 2001, showing a clear drop of currency in circulation and reserve balances (BCRA annual report 2001, p. 2). Year-over-year tax revenues for the final quarter of 2001 plummeted by 17 percent, causing an overall deficit of 4.5 percent of the GDP in 2001 (IMF 2003, p. 62). By the end of 2001, both the economy and the public finances were in a deep crisis. By December 2001, economic activity collapsed, with year-over-year industrial production falling 18 percent, construction falling 36 percent, and imports falling by more than 50 percent.
As general fears of government default and economic uncertainty continued and compounded, interest rates skyrocketed and the spread between U.S. Treasury bonds and Argentine government bonds increased up to 5,000 basis points. From November 28-30, there was a powerful run on private sector deposits, which fell by more than US$3.6 billion, 6 percent of the deposit base (IMF 2003, p. 62). In response, the government initiated a freeze on bank deposits on December 1, crimping private sector activity. Monthly economic activity suffered a year-over-year fall of 15.5 percent for December.

The public responded to the political and economic turmoil with riots, which led to the resignation of Domingo Cavallo on December 19 and President De la Rúa on December 20. On December 23, new president Adolfo Rodríguez Saá declared a default on external government debt as well as an array of other policy changes. His administration came to end when he resigned after only a week in office, but the default remained in place.

Eduardo Duhalde became the next president on January 1, 2002 and took powerful measures to shore up the political and economic situation that had been pounding Argentina. He devalued the peso, forcibly converted all U.S. dollar deposits and loans into pesos (“pesofication”) and voided various contracts (Schuler, 2003, p. 5). In the short run, the economy fell further, with year-over-year monthly economic activity shrinking 16.9 percent in January and 16.6 percent in March; this value only turned positive in December 2002. GDP shrank 10.9 percent in 2002, as compared to 4.4 percent in 2001 (IMF WEO). The unemployment rate rose to 25 percent and 53 percent of the population fell below the poverty line (Cibils et al. 2002, n.p.). Average annual income per capita sank to $2,800 in 2002 from $8,500 in the early 1990s, a large part of which was attributable to the depreciation in the exchange rate of the peso against the dollar (Blustein 2005, p. 2).

The poor statistics the full year 2002 exhibited hide that by August 2002, the economy showed signs of improvement, with the exchange rate stabilizing and even appreciating, and inflation staying within a relatively reasonable range. The production and export sectors stopped shrinking and industries began to finally expand. International commodity prices were rising, helping some of Argentina’s key exports. With economy finally witnessing significant recovery, the government gradually lifted the freeze on bank deposits between December 2002 and April 2003 as the economy returned to normalcy.
Data and Charts

**Chart 3.1.** Source: Della Paolera and Taylor (2003, p. 314), from multiple underlying sources.

**Chart 3.2.** Source: Bolt and van Zanden (2014).
### Argentina: Bank Deposits (millions of paper pesos), 1912 and 1914

<table>
<thead>
<tr>
<th></th>
<th>1912</th>
<th>1914</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td>1,480.9</td>
<td>1,189.3</td>
<td>-19.7</td>
</tr>
<tr>
<td><strong>Private Domestic Banks</strong></td>
<td>674.3</td>
<td>365.4</td>
<td>-45.8</td>
</tr>
<tr>
<td><strong>Banco Español</strong></td>
<td>229.9</td>
<td>126.9</td>
<td>-44.8</td>
</tr>
<tr>
<td><strong>Banco Italia</strong></td>
<td>101.5</td>
<td>62.4</td>
<td>-38.5</td>
</tr>
<tr>
<td><strong>Banco Frances</strong></td>
<td>84.7</td>
<td>55.0</td>
<td>-35.1</td>
</tr>
<tr>
<td><strong>Nuevo Banco Italiano</strong></td>
<td>41.0</td>
<td>27.2</td>
<td>-33.7</td>
</tr>
<tr>
<td><strong>Banco Popular Argentina</strong></td>
<td>20.4</td>
<td>17.4</td>
<td>-14.7</td>
</tr>
<tr>
<td><strong>Other Private Banks</strong></td>
<td>196.8</td>
<td>76.5</td>
<td>-61.1</td>
</tr>
<tr>
<td><strong>Banco de la Nación</strong></td>
<td>478.3</td>
<td>552.7</td>
<td>15.6</td>
</tr>
<tr>
<td><strong>Foreign Banks</strong></td>
<td>328.3</td>
<td>271.2</td>
<td>-17.4</td>
</tr>
</tbody>
</table>

*Chart 3.3. Source: Della Paolera and Taylor (2003, p. 319), from multiple underlying sources.*

### Argentina: Various Nominal Variables, 1928-1933

<table>
<thead>
<tr>
<th>Year</th>
<th>Monetary Base</th>
<th>Gold Stock</th>
<th>Money Supply</th>
</tr>
</thead>
<tbody>
<tr>
<td>1928</td>
<td>1,406</td>
<td>1,113</td>
<td>4,717</td>
</tr>
<tr>
<td>1929</td>
<td>1,247</td>
<td>954</td>
<td>4,652</td>
</tr>
<tr>
<td>1930</td>
<td>1,261</td>
<td>968</td>
<td>4,660</td>
</tr>
<tr>
<td>1931</td>
<td>1,245</td>
<td>593</td>
<td>4,149</td>
</tr>
<tr>
<td>1932</td>
<td>1,339</td>
<td>584</td>
<td>4,115</td>
</tr>
<tr>
<td>1933</td>
<td>1,214</td>
<td>561</td>
<td>4,061</td>
</tr>
</tbody>
</table>

*Chart 3.4. Source: Della Paolera (2001, p. 191), from multiple underlying sources.*

Chart 3.6. Source: Schuler (2003, short version, p. 4); underlying data come from Banco Central de la República Argentina (interest rates, deposits) and news reports (events).
4. The Philippines (1919-1922)

After the United States took control of the Philippines in 1898 following the Spanish-American War, the monetary system underwent several major changes. The American colonial government introduced a gold-exchange system to replace the previous silver standard. As in the United States, the government issued silver certificates that were 100 percent backed by a silver coin and bullion reserve (Luthringer 1934, p. 44). (Silver certificates helped to promote the interests of the silver lobby that was powerful in American politics at the time.) The two major commercial banks, the Spanish colonial era Bank of the Philippine Islands and the recently established Philippine National Bank, also issued notes. The Philippine government owned a majority of the shares of the Philippine National Bank (Philippines, Act No. 2612, 4 February 1916).

In order for the peso to be convertible into gold, a Gold Standard Fund was additionally established. Because of the Philippines’ colonial relationship with the United States, this fund primarily comprised U.S. dollar deposits in New York; the reserves also included U.S. gold coins and silver pesos kept in Manila. The primary purpose of these funds, which began operation in 1903, was to maintain reserves near 100 percent of the face value of coins and silver certificates in circulation (Luthringer 1934, p. 37). However, over the next decade, the government began to deviate from the original intent of the arrangement; it responded to rising silver prices by introducing new peso coins with less silver content. The government also invested significant portions of the Gold Standard Fund in local government and railroad loans, continuing to dilute the original intent (Philippines, Act No. 2083, 8 December 1911).

World War I transiently benefitted the Philippine economy in a significantly manner. During the war, exports tied to the country’s three primary industries, Manila hemp, coconut oil, and processed sugar, surged to unprecedented levels. In the last few years of the war, exports grew rapidly to significantly outweigh imports and, as a result, price levels increased (Luthringer 1934, p. 127).

Silver prices climbed during the war and the government took advantage, passing. Act No. 2776 in March of 1918 combined the Gold Standard Fund and the Silver Certificate Reserve into the Currency Reserve Fund—an action that the scholar Yoshiko Nagano argues was the ultimate cause of the future financial crisis. The combination of these two funds compensated for the depletion of the Gold Standard Fund and kept sufficient funds available (Nagano 2015, p. 137). In addition, the act allowed the government to deposit up to 25 percent of the Currency Reserve Fund within the New York branch of the Philippine National Bank.

At the end of the war in November 1918, the economic activity the war had generated began to dwindle and the Philippines’ main exports fell off sharply; exports fell from 270.4 million pesos in 1918 to 226.2 million pesos in 1919 (Philippines, Bureau of Customs, Annual Report of the Insular Collector of Customs 1932, p. 66, cited by
Luthringer 1934, p. 266). By the end of 1918, most of the reserves in New York had been transferred back to the Manila office of the Philippine National Bank to augment loans for the suffering export businesses (Nagano 2015, p. 120). In the first half of 1918, G. Martini, Ltd., a major producer of Manila hemp, received one of these loans. By November 1919, Martini owed 8.5 million pesos to the Bank, which included overdrafts of 2 million pesos and unmatured foreign bills amounting to 4 million pesos (Nagano 2015, p. 146). In order to mitigate the huge losses that one of the country’s biggest firms was facing, the government got inextricably involved in the business. As a way to disguise its involvement in the markets, the Philippine National Bank gave loans to trading companies V. Madrigal & Co. and Fernandez Hermanos, which were both managed by executives of the bank; this money was to be used to purchase Manila hemp, thus increasing revenues for Martini and propping up prices (The Coates Report 1920, cited by Nagano 2015, p. 146). The bank was essentially lending more money to the troubled company but in a way such that the general public could not see it. G. Martini, Ltd. was only one such company receiving the bank’s ill-advised loans. By 1919, 39 million out of the 46 million pesos in the Currency Reserve Fund were lost due to loan defaults; as an indication of the severity of the crisis the Philippines found itself in, the government lost or had to divert almost 80 percent of the country’s annual revenue from taxes and tariffs to replenish the depleted reserve (Nagano 2015, p. 4). This also caused inflation.

1919-1922. It was clear by early 1919 that the Philippines was in the midst of a serious financial crisis. George Luthringer, whose study of the episode remains authoritative, states “that the currency reserves deposited with the Philippine National Bank were dissipated in such a manner is indicative of inefficiency and crass ignorance of the principles of the currency system on the part of both the officials of the Bank and the responsible officials of the Insular Government” (Luthringer 1934, p. 121).

The government deviated from the intended rules of the currency board arrangement in other respects, as well. With the exchange fund in New York distressed, on March 23, 1919 the Philippine government attempted to relieve economic stress by refusing to sell drafts on the New York balance of the Currency Reserve Fund as required by law. When the government resumed selling drafts in May 1919, they were sold at premiums. (A premium in this context means that the exchange rate was depreciated from its official parity.) Premiums rose from 1.5 percent for demand drafts and 2.5 percent on telegraphic transfers in early May to 3 percent and 4 percent in late May, respectively (Manila Times, May 18, 1919: n.p.; Luthringer 1934 p. 132). By the end of 1919, the commodity balance of trade was 11 million pesos against the Islands, and the government had sold 11.8 million dollars of exchange on New York as against 1.1 million dollars in 1918. In the same period, U.S. Army and Navy transfers declined from 46 million pesos to 10 million pesos as war gave way to peace, emphasizing the danger of relying on these transfers as a source of gold in New York instead of maintaining adequate currency reserves (Philippines, Bureau of the Treasury, Annual Report 1919, pp. 24, 27; Luthringer 1934, p. 133). Furthermore, there was an increase of 2.9 million
circulating pesos in 1919, a time when in an orthodox currency board system there should have been a contraction in response to the economic contraction. In trying to stop the drain on the dollar reserve by advances in the rate on drafts, and, when this had failed, by selling drafts without affecting any contraction, the government failed entirely insofar as correcting the underlying factors of disequilibrium was concerned (Luthringer 1934, p. 135).

During the first few months of 1920, Philippine exports skyrocketed. One of the main exports, sugar, was selling at nearly six times its price of 1913 (Statistical Bulletin 1920, p. 93, cited by Luthringer 1934, p. 138). This had a favorable effect on the exchange rate. However, the worldwide crisis and depression which broke in the middle part of 1920 reacted violently upon the Philippines. (The United States, the Philippines’ largest trading partner, was among the countries hit by the depression.) The prices of the Philippine raw materials that drove export figures collapsed and a sharp decline in trade occurred.

These developments were reflected in exchange rates by a steady depreciation of the peso. Going forward, the government continued to disregard the principles of the gold-exchange standard and sold drafts in New York at premiums that neared as high as 14 percent (Luthringer 1934, p. 141).

The following years were marked by massive volatility on many fronts, including trade figures, the price level, and the exchange rate. The government was constantly responding to small adjustments in the economic conditions by changing its policy regarding the gold-exchange standard and deposits in New York. In 1921, beyond wide fluctuations in the depreciated peso, disorderly deflation, liquidation, severe business depression and stagnation, there were widespread failures, strikes, and unemployment (Luthringer 1934, p. 160). Imports fell from 27.8 million pesos in January of 1921 to 11.4 million in December. At this point, the Philippine National Bank and the Bank of the Philippine Islands were both in poor condition. The legal reserves of the Philippine National Bank were deficient by approximately 29 million pesos and the Bank of the Philippine Islands was unable to meet further withdrawals of deposits, redeem its notes, or pay balances due to other banks (Manila Times, March 8, 1922, n.p., cited by Luthringer 1934, p. 163).

In late 1921, it appeared that conditions were beginning to improve; the Philippines had increased its gold resources, exchange rates in the U.S. again began to rise, and it seemed that the restoration of the peso to par was near. However, in November 1921, in fear of a drain on its newly acquired gold balance, the government suspended the sale of exchange, and kept the suspension in force for the remainder of 1921 and the entire year 1922, essentially leaving the peso to its own devices (Philippines, Governor General, Report of the Governor General 1922, p. 111; Luthringer 1934, p. 166).
The suspension of draft sales was a potentially disastrous decision by the Philippine government and almost completely suspended the operation of the gold-exchange standard. A *Manila Times* article titled “The Truth About the Financial Situation in the Philippines” from March 6, 1921 evidenced a complete misunderstanding by Philippine government officials, as well as bankers and businessmen, regarding the currency board arrangement and the gold-exchange standard (cited by Luthringer 1934, p. 175). This was characteristic of the entire crisis period, during which the government exacerbated matters at times when it had the ability to take corrective actions. Luckily, the events of 1922 served to counteract the government’s poor decision making. A net decline in currency circulation, the revival of export trade, and a drastic curtailment of imports in 1922 ensured the eventual return of the peso to near par in late 1922. After the return to par, the government resumed the buying and selling of exchange under a more strictly regulated system. The system lasted until the Japanese invasion of the Philippines in December 1941, near the start of World War II in the Pacific, and resumed after the war, finally ending when the Philippines established a central bank on January 3, 1949.
Data and Charts

**Chart 4.1.** Source: Diesen (1922, p. 50).

*Note: 100 is equal to the legal parity of two pesos per dollar*

**Chart 4.2.** Source: Luthringer (1934, Appendix A); underlying data are from *Statistical Bulletin of the Philippine Islands* (1929).
Chart 4.3. Source: Nagano (2015, p. 53); underlying data are from Philippine (Commonwealth), Bureau of Banking, Annual Report of the Bank Commissioners of the Philippine Islands (1938, p. 1).

Chart 4.4. Source: Nagano (2015, p. 33); underlying data are from Philippine Islands and Philippines (Commonwealth), Bureau of the Treasury, Annual Report of the Treasurer of the Philippine Islands, various years.
Chart 4.5. Source: Nagano (2015, p. 63); underlying data are from Banco de las Islas Filipinas (1928).
5. Palestine (1935-1936, 1940)
British military forces took Palestine from the ruling Ottoman Empire in 1917-18, during World War I. After the war the League of Nations made Palestine a British mandate. Initially the British replaced Ottoman currency with the currency of Egypt, a British protectorate. Under the ultimate control of the British Colonial Office, the Palestine Currency Board was then established in late 1927, fixing the Palestine pound (P£) to the pound sterling at a one-to-one ratio.

1935-1936. In the late 1920s and early 1930s, the Palestinian economy witnessed strong economic growth. During this period, the country was not subject to any capital controls or trade restrictions, experiencing near-free market conditions. Production and sales of the main Palestinian product, citrus, were surging. Furthermore, there was a massive influx of Jewish immigrants, coupled with a substantial influx of capital. The immigrants brought with them manpower, new skills, and most significantly, an increased demand for goods and services. These factors combined to create a period of rapid economic growth in Palestine (Ottensooser 1955, p. 51). It is estimated that construction investments in new buildings represented roughly 50 percent of overall investment activity during this period (Horowitz 1954, p. 70, cited by Ottensooser 1955, p. 49). Despite strong economic growth, there were several short episodes of social unrest between the new Jewish immigrants and the Arabs. For example, there was a series of riots in 1929 between the two parties over access to the Western Wall in Jerusalem, leading to many deaths and significant property damage (Ottensooser 1955, p. 47). Although unrest lasted only a few days, it foreshadowed further unrest moving forward.

The period brought a banking boom. Three main groups of institutions catered to the needs of a steadily growing clientele: foreign banks, local banks, and credit cooperative societies. Foreign banks, the most important of which was Barclays Bank (Dominion, Colonial & Overseas), had the bulk of the country's deposits (Ottensooser 1955, p. 57). In addition to providing usual commercial banking facilities for Palestinians, Barclays also acted as the government’s banker, and was thereby often referred to as the Agent of the Currency Board. While Barclays served the main needs of the Palestinians, the Anglo-Palestine Bank, Ltd., established in 1912, served as the most important bank for the Jewish population of Palestine, extending loans to Jewish enterprises and helping establish the strong economic structure of the area (Palestine Post, 7 July 1940, p. 3).

Local banks grew extremely quickly in response to the large immigration and capital inflows. Between 1932 and 1935, 46 were established, many with meager capital and reserve funds, which would eventually cause some problems later (Government of Palestine, Bulletin of Banking Statistics 1937, cited by Ottensooser 1955, p. 59-60). Despite the potentially harmful presence of many small banks, the general view was that Palestine’s largest banks were strong and secure enough to ensure the safety of the currency; after a Chamber of Commerce meeting in late September, the members agreed that both Barclays and the Anglo-Palestine Bank, as well as the London-based Ottoman Bank, the Palestine Mercantile Bank, and the Belgian-based Banque Belge pour
l’Industrie, could safely protect the banking interests of Palestine (Palestine Post, 1 October 1935, p. 1).

In 1935 domestic and international political tensions dampened Palestine’s development and initiated a crisis. Hostility between the Arab Palestinians and Jewish immigrants spilled over into the economy. Influenced by Arab nationalist movements in neighboring regions, Arabs rallied for the government to draft laws preventing further immigration. As the two sides failed to reach agreements, Arabs turned to boycotts, work stoppages, and violence. The Port of Jaffa, which was usually operated by Arab labor, ceased to function. From October 1935 to October 1936, Jewish property losses included 142,000 citrus and other fruit trees, 64,000 forest trees, and 16,500 dunams, or 4,077 acres, of crop and P£250,000 worth of industrial and commercial premises (Great Britain, Palestine Royal Commission, Report 1937, pp. 105-106, cited by Ottensooser 1955, p. 53).

In late 1935 the Italian Invasion of Ethiopia created further economic uncertainty in Palestine. In the months leading up to the Italian invasion, Palestine suffered a brief banking crisis as a result of fear that the invasion could mean further political unrest in Northeast Africa and the Middle East. In August and September, there were several instances of bank runs. Italian forces officially moved into Ethiopia in early October. Palestine entered a state of chaos as people responded to the uncertainty with violence. In response to the invasion, the government was quick to address the situation and attempt to ease concerns of the general population. On October 11, 1935, only days after the first offensive by Italian forces, J. Hathorn Hall, the Officer Administering the Government, the second-ranking government official, made a general announcement that the events in Ethiopia were “no cause for anxiety,” and suggested that “nervousness and apprehension from which some people in Palestine had recently been sufferings, were unfounded and unjustified” (Palestine Post, 11 October 1935, p. 1). Such statements helped ease concerns and halted the bank runs effectively ending the crisis in 1936.

1940. Bank runs also occurred towards the beginning of World War II in July 1940 after Holland and Belgium had been invaded and Italy entered the war. Depositors began withdrawing significant amounts. Cash withdrawals were so heavy that some local banks saw their cash reserves depleted. Small financial institutions such as King Solomon Bank (P£100,000 in debt) were liquidated, and the Belgo-Palestine Bank (P£73,000 in debt) failed during this period of panic (Palestine Post, 8 July 1940, p. 2). The aggregate deposits of foreign and local banks and of credit cooperative societies declined from £P20.2 million to £P14.7 million between June 1939 and June 1940 (Ottensooser 1955, p. 63). Beyond this, farmers were struggling; in July 1940, citrus growers were receiving advances on cultivation loans, putting further stress on the overextended government (Palestine Post, 13 July 1940, p. 2).
As the war continued, though, the Palestinian economy witnessed strong growth. British troops’ demand for consumer goods and military construction contributed to real GNP growing at an annual average rate of 11 percent (Barkai and Liviatan 2007, ch. 1). Furthermore, Palestinian goods came to replace products that had previously been imported from Europe. Additionally, Jewish capital imports continued unabated through the war, totaling approximately £45.2 million from 1940-45 (Horowitz 1954, p. 117, cited by Ottensooser 1955, p. 55). Net savings had been negative in Palestine prior to the war, but during the war period, the booming economy led to individual and corporate savings in 1942-44 amounting to £48 million, which was also reflected in rising bank deposits. The increased economic activity brought with it a surge in the cost of living, which rose threefold between the outbreak and end of the war (Statistical Abstract of Palestine, cited by Ottensooser 1955, p. 55). Throughout the war period, banks maintained high degrees of liquidity after the warning signs of 1935 and 1936 presented themselves; this allowed for Palestine to generally remain economically sound through the end of the war in 1945.

1948: Not a crisis period. The British mandate in Palestine ended in May 1948 with the declaration of independence of the State of Israel and the First Arab-Israeli War. Israel replaced the Palestine Currency Board with the Anglo-Palestine Bank as a quasi central bank. In the politically troubled period leading up to the end of the mandate, there was no financial crisis, although there were some banking and currency problems related to the political situation. For example, the Israeli authorities thought that the Palestine Currency Board ceased its operations in Israel in a way that made the transition to the Anglo-Palestine Bank as the monetary authority more difficult than it should have been (Ottensooser 1955, p. 111).
Data and Charts

Palestine: Local and Foreign Banks, Cash Ratios, 1940-1944 (P£ 1,000)

<table>
<thead>
<tr>
<th></th>
<th>1940</th>
<th>1941</th>
<th>1942</th>
<th>1943</th>
<th>1944</th>
<th>1945</th>
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<td>Cash and External bank balances</td>
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<td>11,031</td>
<td>13,323</td>
<td>22,607</td>
<td>32,464</td>
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<tr>
<td>deposits</td>
<td>17,356</td>
<td>18,701</td>
<td>24,014</td>
<td>37,028</td>
<td>57,775</td>
<td>71,525</td>
</tr>
<tr>
<td>ratio (percent)</td>
<td>35.6</td>
<td>59.0</td>
<td>55.5</td>
<td>61.1</td>
<td>52.2</td>
<td>54.3</td>
</tr>
</tbody>
</table>

Source: Statistical Abstract of Palestine (1940-44, p. 89); Ottensooser (1955, p. 66)

**Chart 5.1** Source: Historical Financial Statistics.

Hong Kong established a currency board in December 1935 when China abandoned the silver standard and pegged its currency to the pound sterling. Hong Kong followed suit, fixing the Hong Kong dollar to the pound sterling at HK$16 = £1. Hong Kong’s currency board, the Exchange Fund, differed from all other British colonial currency boards in that the board itself has issued no notes directly until recently. Instead, the banks that had issued notes before the advent of the currency board continued to do so, but now as agents for the Exchange Fund and subject to currency board restrictions rather as free agents. With some changes, this arrangement persists today.

1941. The new system was tested only a few years after the World War II Battle of Hong Kong in December 1941.² Japanese forces captured the territory and continued to occupy Hong Kong through the end of the war. The Japanese found and put unissued banknotes into circulation. These notes were later referred to as “duress notes.” The assets of the Exchange Fund were invested in British Empire securities and were out of reach of the Japanese, but the issue of the duress notes made the outstanding note issue greater than the Exchange Fund’s reserves. Later in their occupation of Hong Kong, the Japanese introduced a new currency, the military yen, and declared it the only legal form of currency (Schuler 1992, pp. 138-139). Many people stockpiled Hong Kong dollar banknotes in anticipation of an eventual Allied victory (Jao 1974, pp. 16-17, cited by Schuler 1992, p. 139). After the Allied victory and Japan’s withdrawal from Hong Kong in September 1945, the British administration re-established the Hong Kong dollar, offered exchanges for military yen (albeit at low rates), and decided to honor the duress notes (Ordinance No. 13 of 1946). Though it took time, by 1953 the Exchange Fund’s foreign reserves had returned to normalcy under orthodox currency board standards, reaching 100 percent of its currency in circulation.

1961. Hong Kong became one of the economic miracles of the postwar era and experienced great growth in its financial sector. Bank deposits as a proportion of GDP increased from about 41 percent to 70 percent between 1959 and 1964 (Schenk 2001, p. 58). The banking boom was caused by mass inflows of capital, increased prosperity, and immigration (mainly of Chinese fleeing communism, but also some other groups seeking economic opportunity). It was further characterized by aggressive marketing by banks as they sought liquidity in order to participate in the economic development of the colony, as well as to speculate in shares and property. A distinguishing aspect of the period was that depositors were predominantly foreigners from who faced uncertainty in the volatile political and economic climates of their countries in Southeast Asia. The

² Like other British colonies, Hong Kong imposed exchange controls when World War II broke out in Europe and retained them after the war. To facilitate Hong Kong’s role as an entrepôt, the British colonial administration did not impose controls as tight as those elsewhere. Hong Kong had a free currency market in which it was possible to buy U.S. dollars at their more expensive market rates rather than risk not being able to obtain dollars while waiting in the queue to buy them at the cheaper official rate.
low taxes, price stability, and related relaxed exchange control all made Hong Kong attractive for depositors. The competitive atmosphere of the late 1950s also led to rising interest rates that attracted depositors from overseas and at home (Schenk 2001, p. 59).

Increased deposits caused a rapid extension of bank offices, thereby spreading the “banking habit” in Hong Kong. Starting in 1960, the government’s Banking Advisory Committee became concerned by this rapid growth and felt that limiting bank licensing would prevent potential instability. Despite increased restrictions on applicants, the Committee had little to no power in regulating the activities of already licensed banks. A report by a Bank of England official sent to study the situation claimed that there were already too many banks in operation and that excessive competition had driven the smaller, less experienced banks to overextend and offer unsupportable rates to attract deposits (Tomkins 1962, pp. 13-14, cited by Schenk 2001, p. 60). The Hongkong and Shanghai Banking Corporation (HSBC) was the leading bank in the colony, with 49 branches, 41 of which were opened after 1959. The other major bank, Standard Chartered Bank, operated 17 branches by 1966, only one of which was opened after 1959.

During this period, there was also an extraordinary growth of small banks, contributing to booms in shares and property from 1959 to 1961. This in turn contributed to the banking crisis of 1961, of which Liu Chong Hing Bank was the primary victim. Established in 1948 in Hong Kong to collect savings and small deposits in China, Liu Chong Hing Bank was incorporated in 1955 with a registered share capital of HK$5 million, of which HK$4 million was paid up. Three years later, the registered share capital was expanded to HK$20 million, of which HK$10 million was paid up, and the bank opened its first branch. In June 1961 there was a run on the bank after it ran into difficulties as a result of property speculation and the liquidity squeeze that accompanied the stock market boom (Kwok-Leung 1962, p. 67, cited by Schenk 2001, p. 63). The government asked HSBC and Standard Chartered to support Liu Chong Hing, and in the end, Liu Chong Hing offered specific collateral to obtain a loan from them. The run ended after the press and radio announced that the two leading banks were offering support (HSBC, Minutes of the London Consultative Committee, 13 July 1961, cited by Schenk 2001, p. 63).

1965. The events of the Liu Chong Hing Bank served as a warning to strengthen banking regulation. Under the supervision of a team of representatives from the Bank of England, the Banking Ordinance of 1964 was announced in April of that year. The ordinance established interest rate ceilings, with “basic” interest rates offered by foreign banks and the leading Hong Kong banks and a graduated scale for other categories of banks up to 0.5 percent above the basic rate. The system was designed to enable smaller banks to compete for deposits with the larger banks, but at the same time to constrain such competition to avoid upward drift in interest rates. However, there was still significant disagreement over the terms of the new legislation, especially from a large Hong Kong Chinese bank, Hang Seng Bank.
Before the 1964 Banking Ordinance could be fully implemented, a second banking crisis occurred in early 1965. Going into 1965, property prices were falling quickly and the market was depressed by banks’ sale of property assets to conform to the new Banking Ordinance, thus leaving many banks overexposed (Jao 1974, pp. 253-254, cited by Schenk 2001, p. 68). Ming Tak Bank was found to be insolvent and closed in late January 1965 (Ghose 1987, pp. 73-74, cited by Schenk 2001, p. 68). Only weeks later, there was a two-day run on deposits of the Canton Trust and the Commercial Bank, which were both heavily involved in the property market. Despite support from HSBC and Standard Chartered, the Canton Trust suspended business on February 8, 1965 (Jao 1974, p. 248, cited by Schenk 2001, p. 69). News reports about the support offered by these two banks temporarily lulled public concerns, but when rumors spread that the police were questioning the chairman of Hang Seng Bank in April, runs resumed. One day later, on April 9, HSBC took a majority share in Hang Seng, which was later found to have been extremely illiquid (Jao 1974, pp. 249-250, cited by Schenk 2001, p. 69). This action represented the end to the crisis period of the 1960s. Hang Seng reported an absolute decline of HK$150 million deposits.

1972-1983: Not a crisis period for the currency board. Hong Kong abandoned the currency board arrangement for about a decade starting in 1972. From 1974 onward the exchange rate floated. During that period there were no banking crises. There was however a currency crisis in October of 1983, in response to concern regarding the future of the territory stemming from Sino-British negotiations. To end the currency crisis, Hong Kong returned to the currency board system, with the Hong Kong dollar fixed to the U.S. dollar at HK$7.80 = US$1, where it remains today (Chiu 2000, p. 4; Greenwood 2008, pp. 137-167).

1987. Hong Kong faced a number of shocks that put its economy to the test in the late 1980s and early 1990s. In October 1987, the world faced a significant and widespread stock market crash that affected economies across the globe. The Hang Seng Index of the stock market, which had risen to new heights throughout 1987, was among the first affected and fell by more than 40 percent. In response, the government suspended trading for four days because of concerns regarding the possibility of panic selling, confusion and disorder in the market, the liquidity of members, the possibility of bank runs, and the uncertainty caused by the settlement backlog (Davison 1988, p. 29). As the Hang Seng Index continued to be pounded, the government introduced multiple multibillion dollar rescue plans in conjunction with important domestic and international financial institutions. HSBC and Standard Chartered were among the supporting institutions. The banking system suffered no crisis (Davison 1988, p. 33). Despite the massive plunge and extensive reach of the October stock market crash, worldwide markets recovered quickly and growth returned in 1988.

1991. In 1991, the Bank of Credit and Commerce International (BCCI), the seventh largest private bank globally, came under scrutiny for committing various financial crimes and for its involvement in an extensive money laundering scheme. This
international scandal caused the closing of several branches of the bank including the Hong Kong branch, the Bank of Credit and Commerce Hong Kong Ltd. (BCCHK). The BCCHK was closed on July 8, 1991, at a time when it maintained 26 branches and had 40,000 depositors who had entrusted it with US$1.4 billion (Holley 1991).

Several other banks dealt with brief runs resulting from false rumors. There was a run on Standard Chartered after the circulation of unfounded rumors that Britain, the bank’s home base, had stripped the bank of its license (Holley 1991). Local branches of Citibank suffered a run after U.S. Congressman John Dingell falsely claimed that the bank was “technically insolvent” at a Congressional hearing (Schuler, 1992, pp. 155-156). Citibank suffered net withdrawals of up to HK$500 million and Standard Chartered suffered net withdrawals of more than HK$3 billion (South China Morning Post, August 10, 1991, p. 2; Financial Times, August 10-11, 1991, p. 1, cited by Schuler, 1992, p. 156). Though withdrawals represented only a small percentage of the banks’ total assets and the runs subsided after two days, it caused the Hong Kong government to tighten supervision and regulation on financial institutions—a move that would prove important for Hong Kong’s future.

1993: Not a crisis period. On April 1, 1993, the government established the Hong Kong Monetary Authority (HKMA), which merged the Office of the Exchange Fund with the Office of the Commissioner of Banking (HKMA n.d., p. 1). The HKMA was set up with the goal of strengthening the institutional arrangements for ensuring monetary and banking stability and of promoting the further development of the financial system (IMF 2000, p. 8). Its wide range of powers made it in certain respects somewhat like a central bank, and its creation marked a step away from currency board orthodoxy. Among its unorthodox features was that it held foreign assets much greater than the monetary base, because in addition to holding assets backing the monetary base it also held the cumulative budget surpluses of the Hong Kong government, which the government had deposited with the Exchange Fund starting in 1976. By 1996 the HKMA’s net foreign assets were roughly six times the monetary base (Krus and Schuler 2014, Hong Kong spreadsheet).

1997-1998. The Asian financial crisis of the late 1990s slammed Hong Kong and threatened the economy as well as the HKMA on many fronts. By 1997, high demand and low supply drove the real estate sector to become the largest in the Hong Kong economy, contributing about 26.8 percent to GDP, followed by trade at 20.7 percent, and finance at 10.3 percent (HKMA annual report 1997, n.p.). A large influx of foreign capital and the rising dominance of the property sector in Hong Kong fueled an unprecedented boom in the stock and property markets, with the Hang Seng Index closing at a peak of 16,673 points on August 7, 1997 (Sheng 2009, p. 263) — a major increase from the 10,000 point mark just a year prior, and the 7,000 range in early 1995.

The Asian crisis first affected Hong Kong during the summer of 1997, when there was a small string of brief but threatening economic effects. First, small movements took place
in the Hong Kong dollar in the aftermath of the Thai baht devaluation on July 2, 1997 (Financial Services Review, 1998, p. 1). In mid-August, overnight interest rates rose to an intraday high of 10 percent per year; although the currency board arrangement served to stabilize markets, interest rates remained high between 6 and 7 percent for the rest of the third quarter. The first serious attack on the U.S. dollar link occurred on 23 October 1997, when overnight interest rates shot up to nearly 300 percent per year concurrent with the floating of the Taiwan dollar (IMF 2000, p. 9). Banks sold substantial amounts of Hong Kong dollars to the HKMA for U.S. dollars, which was required to accept these transactions, and a Hong Kong dollar liquidity crunch arose. Interbank interest rates shot up from around 9 percent to as high as 280 percent (Financial Services Review 1998, p. 1). At the end of the day, interest rates closed at 100 percent, as banks sold U.S. dollars back to the HKMA in exchange for Hong Kong dollars as hedges against high interest rates (HKMA took this passively as required). The Hang Seng index suffered severely and affected global markets. On October 28, the Hang Seng Index closed at 9,060 points (Sheng 2009, p. 264).

In November, the Asian financial crisis continued to claim victims, when Japan and South Korea began to falter, which substantially harmed confidence in Hong Kong. The lack of confidence caused an array of “quirky” runs, including those on St. Honore Cake Shop and Whimsey Amusement Arcades, as people rushed to redeem tickets or credits issued by those firms. This level of speculative fear continued through the end of 1997 and into 1998 (Sheng 2009, pp. 265-6). On November 10, there was a run on the locally based International Bank of Asia (IBA), though the bank was able to manage its liquidity quickly and efficiently to avoid any real problems (Financial Services Review 1998, p. 9). On January 12, 1998, Hong Kong’s largest domestic investment bank, Peregrine, failed because of miscalculated funding for an Indonesian taxi company. The Hang Seng Index fell by 8.7 percent that day, closing at 8,121 points. Further, CA Pacific Securities, a midsized stockbroker with more than 10,000 retail accounts, voluntarily suspended operations on January 19 (Financial Services Review 1998, p. 10).

Volatility leveled off from February to May of 1998, as interest rates fell and the Hang Seng Index recovered approximately 20 percent of its value as compared to its January levels. However, the “Asian premium,” or the spread between the interest rates in the Hong Kong dollar and the U.S. dollar, widened to as high as five percentage points (Sheng 2009, p. 266).

The economy started suffering harshly again in August of 1998, when Russia’s currency devaluation and default shook world financial markets. High interest rates were hurting consumers and as the economy sharply contracted. Hong Kong faced a threat of the breaking of the link with the U.S. dollar under speculative pressure, made possible in part by certain technical features of the working of the currency board system that deviated from simple orthodoxy (Greenwood 2008, pp. 274-276). Hedge funds took advantage of the stock, futures, and swap markets to speculate against the Hong Kong dollar, causing rises in the interest rates and shock waves on the stock market. The Hang
Seng Index hit a trough on August 13, 1998 when it reached 6,660 points after a series of strong speculative attacks. Over the next few weeks, the government intervened to stop the vicious cycle created by hedge funds and speculators, spending about US$15 billion in official reserves to buy the 33 stocks that made up the Hang Seng Index (Sheng, 2009 p. 271). Furthermore, the government put limitations on the amount of interbank liquidity the HKMA could create and also assumed a greater role in liquidity assistance. The actions represented the resilience of the Hong Kong government and the displayed the government’s intention to maintain the link to the U.S. dollar. Though this risky decision met significant criticism from bankers and economists across the globe, the intervention stabilized the stock market, ended the campaigns of speculators, and restored confidence. Interest rates fell from 12 percent per year to about 5 percent. Over the next few months, the economy showed it was on a solid path to recovery as the government followed through with various measures to strengthen the monetary and financial systems post-crisis (Sheng 2009, p. 276).

Although Hong Kong was severely affected by the Asian crisis, the economy did not collapse like many of its peer countries. This was in large part due to the strength of the territory’s banking sector and the low debt level of the corporate sector. Through all of the volatility and chaos characterized by the economy during the crisis period, foreign reserves stood high at US$96.5 billion, which served to secure the economy. After the crisis the HKMA took steps that restored elements of currency board automaticity that had had been weakened in the first several years of the HKMA (Greenwood 2008, pp. 278-283).

2008. As a result of the global financial crisis that occurred in 2008, there was a brief run on Bank of East Asia on September 24. Management of the bank successfully restored confidence within 36 hours of the start of the run, the source of which is was determined to be unfounded and malicious rumors regarding the bank’s stability (BEA Annual Report 2008, p. 18).
Data and Charts

Chart 6.1. Source: Historical Financial Statistics

Chart 6.2. Source: International Financial Statistics
Chart 6.3 Hong Kong: Monetary Base: Notes in Circulation (billion HK$), 1950-1966
Source: Historical Financial Statistics.

Chart 6.4 Hong Kong: Demand Deposits (billion HK$), 1985-2002

Hong Kong: Hang Seng Index, 1997-1999

Chart 6.7. Source: Bloomberg L.P.

Bermuda has had a currency board since as early as 1915. The present currency issuer, the Bermuda Monetary Authority, was established as a currency board in February 1970. When established, the unit of account was changed from the pounds-shilling-pence Bermudian pound to the decimalized Bermudian dollar (Schuler and Krus 2014, p. 27). The new currency was pegged to the pound sterling at a rate of Bermudian $2.40 to £1 sterling from February 1970 to July 1972. In June 1972, the pound sterling was floated and as a result, the Bermudian dollar became more valuable than the U.S. dollar which became an issue for the tourist-heavy economy. In response, Bermuda in effect switched to the U.S. dollar as the anchor currency because of the strong economic ties with the United States. The new exchange rate became Bermudian $1 = 0.818513 grams gold (inoperative; really equal to US$1) (Schuler and Krus 2014, pp. 27-28). Unusually, Bermuda retained exchange controls against the U.S. dollar from the period before the U.S. dollar had been the anchor currency. This feature, with some others, made the Bermuda Monetary Authority a quasi-currency board (Stanton 2016).

1970s. There were two instances of bank failures in Bermuda in the 1970s.

Bermuda Provident Bank was established in 1969 as a local savings and loan institution by church elders who had started out with a neighborhood savings scheme. It was originally called The Provident People’s Bank (Bermuda Commercial Bank Limited Annual Report 20078, p. 4; Black Enterprise, pp. 48-49). In 1975, Bermuda Provident Bank approached imminent failure and was consequently taken over by the government. We were unable to find information about the cause of the failure. In early November 1979, the government terminated its administration of the firm (BMA annual report 1979, pp. 7-8).

Rego Trust & Savings Ltd., a deposit company, failed in December 1979. In early November, the Bermuda Monetary Authority concluded that Rego Trust & Savings Ltd. would be unable to meet withdrawal notices, and once this news went public, there was a run on the bank later that month (BMA annual report 1979, p. 7). The government took over operations of the firm in December 1979. Although the failure was not directly attributable to a squeeze on lending margins, the failure emphasized the difficulties faced by the deposit company sector in seeking to maintain and increase the availability of housing finance while at the same time keeping the cost of such finance at acceptable levels (BMA annual report 1979, p. 3).

Unlike most currency board systems historically, Bermuda had restrictions on bank ownership by persons from outside the islands (The Bermuda Recorder 1974). Both institutions that failed were small, and their failures had no wider consequences. The banking law was apparently changed after the failure of Bermuda Provident Bank to
allow Barclays Bank, which had a connection to Bermuda Provident before the failure, to take over the reorganized bank.

Estonia became independent again in late 1991 with the collapse of the Soviet Union. It was the first former Soviet republic to replace the ruble with its own currency, the kroon. The kroon was issued by a reborn Bank of Estonia (Eesti Panki), which had issued the national currency during Estonia’s previous period of independence between the world wars. In early 1992, Estonia suffered inflation that reached a height of 1,076 percent due to the economic disruption associated with breakup of the Soviet Union (Erixon 2010, p. 10). The government resolved to introduce a new currency quickly. The option of a currency board had been proposed and was known to government officials (Hanke, Jonung, and Schuler 1992; Kallas and Sörg 1994). In June 1992, Estonia officially introduced the kroon, which was fixed to the deutsche mark at a rate of eight-to-one under a currency board arrangement (Korhonen 1999, p. 16). Under the currency board arrangement, Estonia moved away from a Soviet-style “monobank” system to a two-tiered system, comprising Eesti Pank on one hand and commercial banks (initially, mainly former Soviet state banks, now owned by the Estonian government) on the other hand. It was the aim of the Estonian government to move to a Western-style banking system dominated by privately owned banks (Fleming et al 1996, p. 42).

1992. The currency board was put to the test early in its existence. In early 1992, Moscow’s Vnesheconombank (successor to the Soviet bank that dealt with foreign trade and foreign-currency transactions) imposed freezes on all assets belonging to non-Russian banks, resulting in financial difficulties throughout the former Soviet Union (Fleming et. al. 1996, p. 42). This dried up cheap credit that provided Estonian banks with significant profits and liquidity. Furthermore, exceedingly high levels of inflation and a general economic slump internationally caused GDP in Estonia to decline 21.2 percent throughout 1992 (Erixon 2010, p. 10). Gross national income per capita fell from approximately $7,500 in 1990 to less than $6,000 by 1992, the peak of the crisis (Erixon 2010, p. 10). The conglomeration of these economic uncertainties created problems for banks. In December 1992, three major Estonian banks failed: Tartu Commercial Bank due to severe mismanagement, and Revalia Bank and Narva Bank due to liquidity complications (Hirvensalo 1994, p. 82); this ultimately involved 40 percent of the broad money supply (Knobl et. al. 2002, p. 19). The situation was further exacerbated by the plethora of poorly capitalized small private banks, vulnerable due to their insubstantial capital, disabling these banks from reaping the benefits of significant portfolio diversification (Fleming et. al. 1996, p. 44). The government decided against a bailout by Eesti Pank, which would have been legally possible, concluding that this action would be inflationary and harmful to the recently fixed exchange rate (Fleming et. al. 1996, p. 43). However, Eesti Pank did rescue two banks, Union Baltic Bank and North Estonian Bank, that had been severely affected by the actions taken by Moscow’s Vnesheconombank. Eesti Pank merged and recapitalized them by issuing government bonds equivalent to their frozen assets (Hirvensalo 1994, p. 82). At this point, Estonia was still engaged in the regime change transition period; the collapse of the banks was not as significant as it would have been in a full-fledged market economy, because the
banks were specialized by sector, after the Soviet fashion, and did not serve households. Aggressive government intervention was not needed because of this peculiarity, and the gap left by the failed banks was simply created a vacuum filled by the expansion of several other operating banks.

**1997.** The Asian financial crisis of 1997 created unstable economic conditions in Estonia, as in many other emerging market economies. The uncertainty arising from the crisis made investors and banks cautious, subsequently decreasing the availability of capital (Erixon 2010, p. 40). As the Asian crisis worsened, there was a powerful attack on the kroon in late 1997. On October 16, 1997, *The Economist* published an article speculating that Eastern Europe, six years after the collapse of the Soviet Union, was poised to suffer a major economic crisis. The article theorized that the rapid growth of the Eastern European economies and the conglomeration of various warning signs that mirrored those of past crises would soon cause major exchange-rate turmoil. In analyzing Estonia, *The Economist* suggested that Estonia’s D-Mark exchange rate link “encouraged a huge increase in bank lending” and that “the kroon could come under pressure if investors suspect that the banking system is developing” symptoms suffered by other crises in the past (*Economist* 1997). The article, along with concerns about the high current account deficit (11 percent of GDP) and a possibly overvalued real exchange rate, caused a brief period of panic in Estonia (Pilinkus et al 2011, p. 395). Foreign banks responded by taking action to limit their exposure to a potential collapse of the kroon. Within days of the speculative attack, liquidity dried up and Estonian banks widened forward interest rate spreads, causing speculators to cease and the temporary crisis to dissolve (Pilinkus et al 2011, p. 395).

**1998.** In 1998, Russia, which was still a significant trading partner with Estonia, faced a major crisis of its own. The Russian ruble was devalued in August, which decreased Russian consumers’ purchasing power and harmed Estonian exports. In May 1998, goods had been exported to Russia in the value of 647 million kroons, but in September this figure had diminished to only 269 million kroons. The most severely affected Estonian sector was the food industry, which was extremely reliant on imports by Russia, which decreased by 44 percent in 1998 (Rei 2009, p. 18). Beyond these direct effects, the crisis also harmed consumer confidence, as speculators were again busy betting against the kroon in early 1998. During this period, interbank interest rates climbed as high as 17 percent (Pilinkus et. al. 2011, p. 395). Doubts over the two biggest Estonian banks, Hansapank and Eesti Uhispank, were rampant. However, after about six months, the two banks were acquired by larger Scandinavian ones, eliminating the ultimate source of the speculative scare. Additionally in 1998, in order to stabilize the banking system, the Bank of Estonia purchased shares of two commercial banks, Eesti Investeerimispank and Eesti Forekspank, in connection with a merger agreement that would consolidate the two banks into Optiva Spank (Bank of Estonia annual report, 1998). Estonia was also pulled out of its economic slump over the next few years by its progress toward accession to the European Union. The European economy grew fairly strongly in 2000, which benefitted Estonian exports. Estonian exports of the machinery
and equipment sector grew from 9.6 billion kroons in 1999 to 21.6 billion kroons on 2000, and commodities exports increasing from 35 billion to 54 billion kroons (Rei 2009, p. 19). The economy underwent significant restructuring and the gap in exports left by Russia’s problems was filled by stronger trade relations with the European Union and a growing internal economy, pulling the economy out of the slump.
Data and Charts


Lithuania became independent again in late 1991 following the breakup of the Soviet Union. Initially, there was debate as to the monetary regime that the government should establish. Proposals that the bank should operate as a currency board were rejected and the Bank of Lithuania began this period of independence operating as a central bank (Schuler, Selgin, and Sinkey, 1991). However, the central bank failed to reduce inflation in an efficient manner and hampered economic growth, in contrast with Estonia’s quasi currency board system (Korhonen 1999, p. 19). Consequently, the government converted the Bank of Lithuania into a quasi currency board system starting on April 1, 1994 (as proposed by Hanke and Schuler, 1994). The local currency, the litas, was initially fixed to the United States dollar at a rate of 4 to 1 (Law on the Credibility of the Litas, March 17, 1994). On February 1, 2002, Lithuania changed the anchor to the euro, at 3.4538 litai per euro, reflecting the prevailing cross rate of the euro with the dollar (Bank of Lithuania, Resolution “On the Approbation of the Bank of Lithuania Regarding the Anchor Currency and the Litas Official Exchange Rate,” No. 157, February 1, 2002). The rationale for the switch was Lithuania’s increasing trade and financial ties to the recently established euro area. The exchange rate with the euro continued until Lithuania joined the euro area on January 1, 2015 and completely replaced litas currency with the euro at the fixed rate.

1995. The financial crisis of autumn 1995 can be largely attributed to the adjustment of the banking system to a new capitalist economy and to the diminution of the Bank of Lithuania’s ability to act as a lender to commercial banks. To stimulate economic activity, the government pushed banks to increase public sector lending in spite of low interest return opportunities (Kiyak and Reichenbachas 2010, p. 98). Many of the ventures were risky, volatile, and often not profitable, thereby depressing bank profits significantly. With dwindling profits and a troubled state budget as a result of tax collection failures, banks began freezing corporate funds. Liquidity quickly began drying up and general insolvency caused panic among depositors, bringing about a large run on banks in December 1995 (Fleming et at. 1997, p. 44). These depressed cash inflows and a massive rise in cash outflows presented severe problems for the banking sector.

In 1995, six banks—27 percent of those operating—failed (Korhonen 1999, p. 26). Additionally, the market witnessed a high number of mergers within the banking industry, involving the absorption of financial institutions that would otherwise have failed. The government did intervene to ease the crisis; however, the scope of its abilities to do so was limited. The Bank of Lithuania had finite resources and could only provide liquidity and further measures of safety to a limited set of smaller banking institutions, such as Aura Bank (Korhonen 1999, p. 27). The larger private banks, including the Lithuanian Joint-Stock Innovation Bank (LAIB) and Litimpeks Bank, were less fortunate, and required liquidity in excess of what could be provided to prevent imminent failure (Leonard 2005, p. 964). LAIB accounted for 16 percent of all private residents’ deposits and 13 percent of the banking system’s total assets; experts estimate
that LAIB lost between 207 and 420 million litai, while Litimpeks Bank lost between 87 and 142 million litai (Baltic News Service, 9 January 1996). The effects of these losses on the state of the economy is difficult to quantify. GDP was generally expanding as Lithuania and other former Soviet republics climbed out of the recession that had accompanied the breakup of the Soviet Union. GDP in US dollars grew from $6.959 billion in 1994 to $8.427 billion in 1996 (World Bank). Further effects of the crisis included the sharp decline in interest rates, from 88 percent in 1993, to 16 percent in 1996 (Bank of Lithuania, 1993-1996).

In December 1995, LAIB and Litimpeks announced a plan to merge into a new entity, United Bank, which would have controlled about 20 percent of the banking system’s total assets. However, the Bank of Lithuania halted both banks’ operations just ten days later. Upon the closing of the banks, it was revealed that several high-ranking officials had deposits in the banks that were receiving interest rates double those of normal deposits. Furthermore, it came to light that the Bank of Lithuania had been neglecting many of its most important responsibilities, including acting as the supervisor of commercial banks; the bank did not conduct any audits between 1992 and late 1995 (Baltic News Service, 29 December 1995).

In response to the problems that ensued, the government passed a law “On the Measures for Maintaining the Liquidity of Commercial Banks (No. I-1155, December 21, 1995), which allowed the government to extend up to litai 300 million in guarantees for interbank borrowing to address liquidity problems in other banks (Fleming et al. 1997, p. 43). The lending scheme acted as substitute for the lender-of-last-resort function that the Bank of Lithuania lacked under the currency board arrangement. Parliament also adopted a law requiring the government to provide compensation retroactively to individual depositors in all small-scale, bankrupt banks in quantities up to 2,000 litai per person. Beyond this, the Lithuanian government worked with the World Bank and IMF to draw up detailed reform plans to address the problems of the financial sector (Fleming et al 1997, p. 44). The intended actions included recapitalization and nationalization of major state-owned banks, liquidation or a combination of existing shareholder and government support for private banks, and the transfer of bad loans to a newly created government-owned asset-management institution (Fleming et al 1997, p. 44). These plans, which took time for full implementation, gradually strengthened the economy back to a normal state over the next few years.

1998-1999. While the banking crisis of 1995 was largely internal, later in the decade Lithuania felt the effects of the Asian financial crisis. Emerging markets in general experienced a reduction or reversal of foreign investment. Russia, one of Lithuania’s largest trade partners, entered a deep recession and the ruble was devalued in August 1998, causing a sharp reduction in Lithuanian imports and exports (Jungmann and Sagemann, 2011, p. 259). As a result, the government faced major budgeting issues, and government debt increased by 19 percent in 1998 and 25.5 percent in 1999 (Bank of Lithuania annual report 1998, p. 33; 1999, p. 20). Contagion from the Russian crisis
made Vilnius interbank interest rates volatile; the rate rose from 6.13 percent in December 1998 to 11.65 percent in October of 1999, and then fell back down to 4.64 percent by December 1999 (Bank of Lithuania annual report 1999, p. 46). Beyond this, many Lithuanian banks were heavily invested in Russian government bonds, which experienced significant loss in value during this period as the Russian government defaulted in conjunction with its devaluation of the ruble. In the year 1999, 20 percent of companies reported losses and GDP fell by 1.6 percent—a stark difference from the near 6 percent growth rates of the prior years (Jungmann and Sagemann 2011, p. 259).

Lithuania’s current account deficit widened from 13.5 percent of GDP during the first quarter of 1998 to more than 15 percent for the full year (Kairis, Jr. and Sabunas 1999). Economic growth slowed with the export reduction; in fact, 20 percent of companies reported losses for the year 1999 (Jungmann and Sagemann 2011, p. 259). GDP decreased by 4.1 percent in 1999 (Bank of Lithuania annual report 1999, p. 15). The monetary base contracted by 9.3 percent and net foreign assets declined by 853.8 million litai. The economy was clearly stuck in a recession.

By 2000, the financial crises that had stricken Asian economies dissipated and Lithuania benefitted. With Russia and other formerly afflicted emerging markets growing again, foreign trade increased. Beyond this, the Lithuanian government began to lower reserve requirements from 10 percent to 8 percent, and increased transparency by reporting daily information on compliance with reserve requirements and liquidity within the banking system. Lithuania’s plan to switch the litas’ anchor from the U.S. dollar to the euro increased confidence and market activity. In 2000, GDP increased by 3.3 percent and inflation returned at a healthy 1.4 percent (Bank of Lithuania annual report 2000, p. 4).
Data and Charts


Bulgaria introduced a currency board on July 1, 1997 in response to a banking crisis and hyperinflation (as proposed by Hanke and Schuler 1991, 1994). The peak of this hyperinflationary period occurred in February 1997, when the monthly inflation rate reached as high as 242 percent (Hanke and Krus 2012). On an annual basis, inflation had soared to almost 500 percent in January 1997 and surpassed 2,000 percent in March, which was caused by liquidity injections to support the country’s weakening banking system, continued central bank financing of the budget deficit and faltering confidence in the Bulgarian lev, which reduced domestic money demand (Gulde 1999). Under the currency board arrangement, the lev was fixed to the Deutsche Mark at a rate of 1,000 leva per Mark. In July 1999 the lev was redenominated at 1 new lev to 1,000 old. At the start of 1999 the euro had been introduced in parallel with the Mark, so the lev became fixed to the euro at 1.99583 leva per euro, the cross rate between the Mark and the euro.

2014. The currency board in Bulgaria has proven extremely stable over the course of its existence, however the strong run on banks in 2014 presented it with new challenges. Bulgaria has historically struggled with rampant corruption, a weak judiciary and unstable government. According to the monetary authority, the Bulgarian National Bank (BNB), runs on the First Investment Bank (FIB) and the Corporate Commerical Bank (KTB) in June of 2014 were part of a deliberate and systematic attempt to destabilize Bulgaria’s banking system wherein criminals sent e-mails and texts urging people to withdraw their funds from banks (Economist 2014). In mid-June, KTB, the fourth-largest bank at the time, failed and was taken into conservatorship by the BNB (Coppola 2014). After the run on KTB, an audit indicated that 76% of the asset value in KTB’s non-financial loan portfolio, which accounted for 80% of KTB’s assets, had been lost. As pointed out by Steve H. Hanke and Matt Sekerke, these figures clearly indicated that KTB was not, and never was, a commercial bank, as such loss would have been impossible had KTB been operating under commercial banking principles; they argued that KTB be liquidated immediately (Hanke and Sekerke 2014). Furthermore, the Bulgarian National Bank accused the lender’s biggest shareholder of taking more than $136 million in cash form the bank’s vaults before the run (Kantchev 2014). KTB remained closed for several months, which became a major problem for those who held deposits with the bank and were unable to access them. KTB was finally closed on June 27th. Withdrawals from FIB amounted to $547 million in response.

In response, on June 30 the European Commission approved a request by the Bulgarian government to an emergency credit line of €1.7 billion to local banks. Though the Bulgarian banking system was notably well capitalized and maintained high levels of liquidity at the point of the attack, the new credit line was a reinforcement tactic. According to Georgi Angelov, senior economist at the Open Society Institute in Sofia, the crisis was not a result of systemic issues within the banking system, which had one of the highest capital-adequacy ratios in Europe, at about 20 percent (Economist 2014).
The panic that resulted from the deliberate attack cannot be attributed to a weakness in the system itself.

The Bulgarian government granted the European Central Bank supervisory powers over the banking system. By taking this action with what is considered a universally trustworthy institution, the government wanted to be as transparent and open about the dealings of the banks to ensure the public felt like their money was safe.

Since this sudden and severe banking crisis, the money supply has collapsed and private credit tightened. As of December 2015, 65 percent of the broad money supply (M3) is produced by banks. Furthermore, because of the deposit insurance laws stipulated by the European Union, the government was forced to borrow an extremely large amount of money to balance deposits and the state has a huge fiscal deficit. Still an incredibly relevant issue, it remains to be seen how Bulgaria will continue to respond and deal with the lasting effects of the KTB failure.
Data and Charts

Conclusion

A successful currency board regime requires strict attention to the rules and contributes to promises a generally stable and efficient economy. However, external shocks and internal deficiencies have put some currency board systems under stress. The external shocks included the U.S. panic of 1907, World War II, and the Asian financial crisis. Internal deficiencies included unusually rapid growth of the financial system and severe mismanagement by government officials. However, similar situations have also ravaged the economies of countries operating under different monetary regimes. If anything, the paucity of financial crises in currency board systems is a point in their favor.

In certain cases, deviation from what is considered “orthodox” currency board standards exacerbated the issues presented by these external shocks. However, the fact is, the reason the currency board worsened the situation is because of that deviation. For example, in the case of the Philippines, the Philippine National Bank made risky loans, which created a currency crisis; however, it is the Bank and its officials itself which are to blame—not the currency board arrangement. Beyond this, the political instability greatly undermined the deemed stability of the financial system—another factor not attributable to the monetary regime.

Our research was extensive but may not have been exhaustive. We welcome suggestions of other case studies to further examine crises in currency board arrangements.
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