



Vaasan yliopisto
UNIVERSITY OF VAASA

Miro Kontio

Post-crisis Monetary Policy Implementation

Insights from the Bank of Korea's Responses to Crises

School of Accounting and Finance
Bachelor's thesis in Economics
Bachelor's Degree Programme in Economics

Vaasa 2025

UNIVERSITY OF VAASA**School of Accounting and Finance**

Author: Miro Kontio
Title of the Thesis: Post-crisis Monetary Policy Implementation : Insights from the Bank of Korea's Responses to Crises
Degree: Bachelor of Science in Economics and Business Administration
Programme: Bachelor's Degree Programme in Economics
Supervisor: Stephen Onifade
Year: 2025 **Pages:** 50

ABSTRACT:

Globalization has created opportunities for innovative and export-driven companies by opening access to new markets, but this increased interdependence has heightened the risk of local crises escalating into global complications. Financial liberalization offers greater access to capital for firms and banks, yet the easing of capital controls leaves economies vulnerable to rapid capital movements. This thesis combines a theoretical framework, South Korea's experiences, and key empirical findings to explore how central banks should implement monetary policies following crises. An examination of South Korea's rapid economic growth, its culmination in the Asian Financial Crisis, and the Bank of Korea's diverse crisis management measures provides insights into the necessity of timely liquidity provision and robust financial supervision. The findings underline the importance of maintaining substantial foreign currency reserves—regardless of the exchange rate regime—to stabilize the currency while recognizing the difficulty of preventing currency and maturity mismatches in an open economy. This thesis recommends that central banks should implement predictable monetary policy through instruments such as forward guidance and inflation targeting to strengthen investor trust, while expansionary measures are crucial for alleviating liquidity squeezes and combating slow growth and elevated market rates induced by crises.

KEYWORDS: Monetary policy, Crisis management, South Korea, Liquidity, Capital movements

VAASAN YLIOPISTO**Laskentatoimen ja rahoituksen akateeminen yksikkö**

Tekijä:	Miro Kontio		
Tutkielman nimi:	Kriisien jälkeinen rahapolitiikan toteutus : Näkemyksiä Korean keskuspankin vastauksista kriiseihin		
Tutkinto:	Kauppätieteiden kandidaatti		
Oppiaine:	Taloustiede		
Työn ohjaaja:	Stephen Onifade		
Valmistumisvuosi:	2025	Sivumäärä:	50

TIIVISTELMÄ:

Globalisaatio on luonut mahdollisuuksia innovatiivisille ja vientivetoisille yrityksille avaamalla pääsyn uusille markkinoille, mutta tämä lisääntynyt keskinäisriippuvuus on kasvattanut paikallisten kriisien riskiä eskaloitua kansainvälisiksi ongelmiksi. Rahoitusmarkkinoiden vapautuminen tarjoaa yrityksille ja pankeille paremman pääsyn pääomaan, mutta pääomakontrollien lievittäminen tekee talouksista alttiimpia nopeille pääomaliikkeille. Tämä tutkielma yhdistää teoreettisen viitekehyksen, Etelä-Korean kokemukset ja keskeiset empiiriset havainnot tutkiakseen, kuinka keskuspankkien tulisi toteuttaa rahapolitiikkaa kriisien jälkeen. Tarkastelu Etelä-Korean nopeasta talouskasvusta, sen huipentumisesta Aasian talouskriisiin ja Korean keskuspankin moninaisista kriisihallintatoimista tarjoaa näkemyksiä oikea-aikaisen likviditeetin tarjoamisen ja vankan finanssivalvonnan tarpeellisuudesta. Havainnot alleviivaavat merkittävien valuuttavarantojen ylläpitämisen tärkeyttä—riippumatta valuuttakurssijärjestelmästä—valuutan vakauttamiseksi, tunnistaen samalla, että valuutta- ja maturiteettiriskien ehkäisy avoimessa taloudessa on haastavaa. Tämä tutkielma suosittelee, että keskuspankkien tulisi toteuttaa ennakoivaa rahapolitiikkaa välineiden, kuten ennakoivan johdatuksen ja inflaatiotavoitteen, avulla vahvistaakseen sijoittajien luottamusta, kun taas elvyttävät toimenpiteet ovat keskeisiä likviditeettipulien lievittämisessä sekä kriisien aiheuttaman hitaan kasvun ja korkeiden markkinakorkojen torjumisessa.

AVAINSANAT: Rahapolitiikka, Kriisinhallinta, Etelä-Korea, Likviditeetti, Pääomaliikkeet

Contents

1	Introduction	7
2	Historical Background	8
2.1	Korea's Economic Rise	8
2.1.1	Post-independence	8
2.1.2	The Park Chung-Hee Administration	9
2.1.3	Financial Liberalization	13
2.2	1997 Asian Financial Crisis	17
2.2.1	Emerging Economies and Large Capital Flows	17
2.2.2	Background for Korea	19
2.2.3	IMF Intervention	21
2.2.4	Aftermath of the Currency Crisis	23
2.3	2008 Global Financial Crisis	24
2.3.1	Financial Innovations and Speculation	24
2.3.2	Capital Flow Dynamics	27
2.3.3	Measures to Restore Confidence	28
2.3.4	Rapid Recovery	29
2.4	The COVID-19 Recession	30
2.4.1	Curbing the Spread of COVID-19	31
2.4.2	Historic Stimulus Measures	32
2.4.3	Persistent Inflation	34
3	Theoretical Framework	37
4	Empirical Literature Review	38
5	Conclusion	41
5.1	Summary	41
5.2	Recommendations	42
6	References	43

Figures

Figure 1. Per Capita GDP 1953 – 2003 (Penn World Table 10.01).....	13
Figure 2. Foreign Debt, 1994 Q4 – 1997 Q2 (Statistics Korea, n.d.d).....	16
Figure 3. Securitization	25
Figure 4. Policy Rate Trends and Foreign Reserves, Sep 2007 – Mar 2009.....	29
Figure 5. FISL Rates and Borrowing Limits (Bank of Korea, 2024).....	33
Figure 6. Post-crisis Housing Prices in Korea (Seo, 2024, p. 4)	34
Figure 7. Rate Hikes and Dollar Appreciation (The BOK, Fed & Yahoo Finance).....	35

Tables

Table 1. Per Capita GDP in 1960 (Penn World Table 10.01).	9
Table 2. Commercial Banks' Non-Performing Loans (Kim & Rhee, 1998)	20

Abbreviations

ASEAN	The Association of Southeast Asian Nations
BOK	The Bank of Korea
CA	The Current Account
CDO	Collateralized Debt Obligation
CDS	Credit Default Swap
CRA	Credit Rating Agency
DRAM	Dynamic Random Access Memory
ECB	The European Central Bank
EPB	The Economic Planning Board
FDI	Foreign Direct Investment
Fed	The Federal Reserve
FISL	Financial Intermediary Support Loan
FSC	Financial Supervisory/Services Commission
HCI	Heavy and Chemical Industry
IMF	The International Monetary Fund
MBS	Mortgage-backed security
NBFI	Non-bank Financial Institution
NPL	Non-performing Loan
OECD	Organization for Economic Co-operation and Development
OMO	Open Market Operation
QE	Quantitative Easing
SEA	Southeast Asia
SMEs	Small and Medium-sized Enterprises

1 Introduction

Globalization has enabled economies to leverage comparative advantages, increasing productivity and lifting millions out of poverty. However, this growing interdependency has also made economies more vulnerable to financial shocks. No matter how well a small export-oriented country such as Finland manages its economy, supply chain disruptions in China or a stock market crash in the U.S. will inevitably affect it. Central banks play a pivotal role in mitigating the negative impacts of financial shocks through innovative monetary policy instruments. A well-executed central bank response can stabilize markets and restore investor trust, while a poorly implemented one can exacerbate the crisis and induce capital flight.

This thesis explores how central banks should implement monetary policy following crises, using the Republic of Korea (hereafter Korea) as a case study. Korea's experiences with both endogenous and exogenous shocks, alongside the Bank of Korea's diverse crisis responses—ranging from contractionary to highly expansionary—highlight the significance of appropriate monetary interventions in stabilizing the economy and preserving investor confidence.

The structure of this thesis consists of five chapters. Chapter 2 provides an overview of Korea's remarkable growth and the Bank of Korea's crisis responses. Chapter 3 introduces relevant monetary theories, while Chapter 4 discusses key empirical findings. Chapter 5 summarizes the main observations of the thesis and offers recommendations for future monetary policy implementation.

2 Historical Background

2.1 Korea's Economic Rise

The origins of central banking in the Korean peninsula can be traced back to the Japanese colonial period. Before the annexation of Korea in 1910, Joseon, and the later Empire of Korea, was a relatively closed economy that primarily traded with the Qing dynasty. The government's attempts to create a new, nationwide currency or adopting one from the Chinese were often unsuccessful, and commodities such as grain and cloth were widely used as means of exchange and credit (Cole & Park, 1983, p. 42). As a vassal state, Korea's trade with dynastic China was a common practice, but it was not until 1876 that trade between Korea and Japan began to grow after the Ganghwa Treaty. In 1878, The Dai-Ichi Ginko, a private bank from Japan, was allowed to open a branch in Korea, and the yen it issued became a widely used medium of exchange. The bank also became a major creditor of the Korean government, strengthening Japan's financial influence. A year after the annexation of Korea in 1911, the colonial Bank of Chosen was established, becoming the first central bank in the Korean peninsula, as it assumed the rights to issue notes and impose monetary policy from the Dai-Ichi Ginko (Cole & Park, 1983, pp. 43–44; Horesh, 2013, pp. 197–198). The Bank of Chosen was established by the Japanese primarily to serve Japanese interests in Korea, with minimal input from Koreans. It funneled capital to Japanese industrial and commercial ventures, and eventually to Japan's wartime production. Despite being under the Japanese empire for much of the early 20th century, the independent Republic of Korea applied for membership in the Organization for Economic Cooperation and Development (OECD) in 1990 as one of the most advanced economies in the world. How did this happen in such a short timeframe?

2.1.1 Post-independence

Japan withdrew from its colonies after its surrender ended the Second World War. The newly independent Korea's banking system was modern, but in disarray, as it lacked

competent managers who could run the system efficiently due to the Japanese occupying middle and upper managerial positions in banks during the colonial era. Right before the onset of the Korean War, the Korean and U.S. governments agreed on measures to rebuild the banking system: The Bank of Chosen was to be disbanded and an autonomous central bank of Korea was to be established, a monetary board was to be formed to oversee monetary policy, and commercial banks were to be privatized. However, the Korean War broke out in June 1950, and most of the aforementioned proposals were not implemented (Cole & Park, 1983, pp. 48–51). The Bank of Korea (BOK) was established, but its monetary policy was not independent from government control. After the war, the BOK and the government focused on recovery and reconstruction over price stability, with the idea that an increase in money supply and aggregate expenditure would lead to higher employment and Gross Domestic Product (GDP) growth. The BOK provided funding to commercial banks, which in turn offered low-interest, long-term credit to recovering industries such as shipbuilding, and the won's value was kept artificially high to keep imports cheap (Lee B. S., 1966, pp. 2–3). In 1954, the government decided to shift some of its authority to the BOK and passed the Bank of Korea Act. The act empowered the BOK to control interest rates and regulate financial markets with licensing and credit allocation (Cole & Park, 1983, p. 53). The rest of the 1950s was plagued by high inflation and fiscal imbalances. The Fiscal deficit was around 23 percent of the GDP, and the average annual inflation rate hovered over 25 percent (Kim & Lee, 2011, pp. 500–501).

2.1.2 The Park Chung-Hee Administration

In 1960, South Korea was poorer than North Korea and some sub-Saharan countries. Unemployment was high, and exports accounted for only a small fraction of the GDP.

Table 1. Per Capita GDP in 1960 (Penn World Table 10.01).

Country	Real GDP In 1960 (Mil. 2017 US\$)	Population (In millions)	Per Capita GDP In 1960 (2017 US\$)

U.S.A.	3 489 114	185	18 860
Finland	44 339	4	11 085
Japan	550 783	95	5 798
DR Congo	42 628	15	2 841
Zimbabwe	9 562	4	2 391
Cameroon	8 496	5	1 699
Korea	30 313	25	1 213

Dissatisfied with the stagnating and corrupt status quo, student-led protests brought an end to Rhee Syngman's presidency in April 1961. Amid the instability, *General Park Chung-Hee* seized power in a bloodless coup in May. He swiftly sought to stabilize the country and consolidate control over the economy to himself and his allies. To achieve these objectives, commercial banks were re-nationalized, governmental influence over the Bank of Korea was re-introduced, and the Economic Planning Board (EPB) was created just a couple months later in July 1961. The EPB was an essential entity to shift economic policy under heavy government control, and with help from the other governmental agencies, the EPB became a sort of "super ministry" that coordinated systematic economic growth strategies (Lim W. H., 2000, pp. 14–19). This included formulating five-year economic development plans, controlling monetary policy and budget allocation, and distributing government funds and international aid as it saw fit. Typically, economic development plans were formulated in conjunction with various bureaus, such as the Ministry of Finance or the Ministry of Development. After this, the Central Economic Committee of the EPB discussed and finalized the proposals (Han, 2014, pp. 16–17).

Korea's macroeconomic approach transformed fundamentally in the fall of 1962, following an unsuccessful currency reform that had been implemented without consultation with the U.S. and exposed Korean small and medium-sized enterprises (SMEs) to liquidity issues. Fearing that American aid would be withdrawn, the Park administration began reconsidering its dependence on American military and humanitarian aid and started reorienting the economy toward export-led economic growth through comparative

advantage (Park Y. J., 2018, pp. 55–56). The administration pursued export-led growth through the EPB and its Central Economic Committee, which set performance standards for companies seeking government benefits to fund their operations and expand abroad (Lim T. Y., 2012, p. 686). The financial benefits were very lucrative for the companies that managed to receive them. These benefits included interest rates lower than the prevailing market rate, export incentives in the form of tax deductions and tariff exceptions, protection from domestic and global competition, subsidies, and government backing for loans (Lim W. H., 2000, pp. 24–27). The resulting risk partnership between the government and businesses was favored by both sides, as the government maintained its control over the economy, while businesses benefitted from reduced operational risks. The new policy approach exacerbated the strengthening of *chaebols*—diversified conglomerates controlled by a single family that exert significant influence over the Korean economy and politics—as the policies primarily benefited a few large entities in selected industries.

Since the 1950s, the won was kept artificially overvalued to keep imports cheap and control inflation. However, this conflicted with Korea's new export-led growth strategy, as the overvalued won stifled the competitiveness of Korean firms and worsened the trade deficit. In 1964, the government devalued the won by nearly 50%, boosting export profits and reducing the import surplus, but also contributing to an immediate rise in domestic prices (Lee E. Y., 1976, p. 8; Lim W. H., 2000, p. 27; Park, 2018, p. 64). The Korean economy overheated as rising export profits combined with expansionary fiscal policies. Export firms leveraged government benefits, aggressively investing in product development and expansion using debt, while inflation accelerated due to a growing money supply. While the government provided low-interest loans to select large firms, formal market rates remained high, leading to the expansion of the informal credit market, which provided liquidity to SMEs at rates 10 percentage points lower on average (Kim & Lee, 2011, pp. 502–504). In 1968, the government adopted austerity measures proposed by the International Monetary Fund (IMF) and the U.S., to cut monetary expansion from 52% to a more stable level and curb inflation. These measures successfully

reduced monetary expansion to around 10% by the year 1970 but, along with falling export profits, pushed the heavily indebted commercial sector to the brink of insolvency, as tightening monetary policy restricted borrowing (Lim W. H., 2000, pp. 32–33).

On August 3, 1972, the government decided to bail out the struggling corporate sector. Debt payments were frozen, formal interest rates were slashed, and corporate debt was restructured with backing from the BOK. These measures deepened the government-business risk partnership, as the government demonstrated its willingness to bail out distressed industries and protect owner-managers, who were ultimately responsible for overleveraging. In the end, both sides escaped accountability, as most of the financial losses were absorbed by informal credit market lenders due to a moratorium on loan payments, and taxpayers whose contributions were used to back restructured loans (Kim & Lee, 2011, p. 502; Lim W. H., 2000, pp. 33-36).

The chaebols' growth accelerated in 1973 when the government initiated the Heavy and Chemical Industry (HCI) Drive as a response to the U.S. reducing 20 000 troops stationed in Korea and to lessen Korea's dependency on arms imports. The administration had learned from Japan that rapid military technology development required a strong industrial base, so it selected the six most crucial sectors for arms production and supplied them with cheap credit to increase capacity and incentives for research and development. The strategy was to disassemble existing weapons, copy their blueprints, and mass-produce them in factories built by private companies with capital supplied by the government (Asianometry, 2024; Park, 2018, pp. 86–92). HCI financing reflected the government's urgency to enhance the country's industrial capabilities, as most of the funding came from foreign and domestic banks instead of internal fundraising. Unlike in the 1960s, monopolies were increasingly tolerated, as government support was concentrated on these six sectors, and military technology development was viewed as a matter of national security (Kim S. Y., 2007, pp. 125–126; Kim Y. S., 1990). Stringent performance standards were eased on beneficiary conglomerates, which often led to reduced profitability. However, the chaebols' web of interdependencies and cross-ownership

structures had grown so complex that it became increasingly difficult to distinguish which branches were truly profitable and which were not.

The legacy of Park Chung-Hee is deeply divisive. On one hand, his administration's export-oriented economic reforms transformed Korea from a poverty-stricken agrarian state to one of the most prosperous nations in the world. On the other hand, his administration was extremely authoritarian, particularly following martial law and the establishment of the *Yushin* Constitution, which strained the U.S.–Korea relationship in the 1970s (Chung, 2014). The constitution allowed the government to suppress civil society by restricting expression and assembly, crush opposing social movements with force, surveil and intimidate dissidents in Korea and abroad, and allowed Park to govern indefinitely.

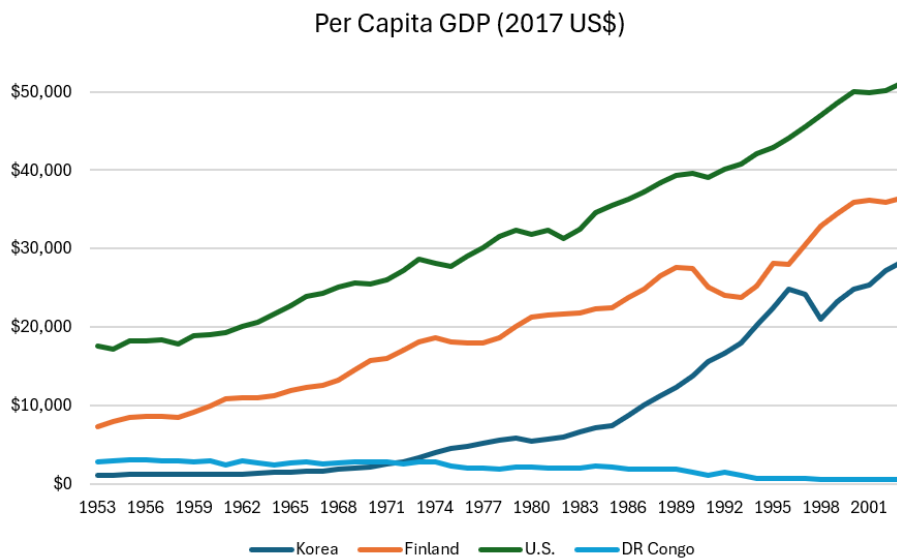


Figure 1. Per Capita GDP 1953 – 2003 (Penn World Table 10.01)

2.1.3 Financial Liberalization

The government's expansionary HCI Drive policies contributed to significant economic instability in the mid-1970s. Inflation exceeded 25%, and the won depreciated over 21% against the dollar during the period from 1973 to 1976 (Bank of Korea, n.d.a; Statistics Korea, n.d.a). Tensions heightened in 1979 as General Park was assassinated and the

second oil shock drove Korea's trade partners into recession. The deterioration of trade led to a decline in export revenue, making it more difficult for Korean firms to service their debt liabilities. Korea's economy and industrial products had grown so elaborate that when General Chun Doo-Hwan seized power in a coup after Park's demise, his administration began moving toward a market-oriented economic system. In response to soaring current account (CA) and budget deficits, as well as inflation, the Chun administration imposed another austerity package, proposed by the IMF, that tightened monetary and fiscal policy, slashing HCI subsidies (Lim W. H., 2000, pp. 42–43; Park, 2018, pp. 150–153).

The gradual liberalization of the Korean economy began in the early 1980s, and the first wave of reforms aligned with the chaebols' ambitions to expand abroad. These reforms in the 1980s were characterized by the easing of regulations on capital outflows, while restrictions on capital inflows remained strict. The EPB remained active, aiming to reduce market distortions caused by decades of state-directed banking policies. The gradual liberalization of interest rates began with the scrapping of preferential policy loans, and the Ministry of Finance shifted toward adjusting capital reserve requirements instead of directly controlling rates. Industrial product markets were opened to foreign competition, long-term foreign direct investment (FDI) was allowed (Han, 2014, p. 25). The control of monetary policy was formally returned to the BOK, although the government still retained significant power over the bank through political appointments and licensing rights. Financial markets were deregulated through the reduction of capital controls, enabling foreign investors to withdraw capital from Korea more swiftly, foreshadowing future crises. While Korean banks were allowed to borrow from abroad, foreign investors' access to Korean bonds remained limited to specific investment trust funds listed on American stock exchanges (Kim & Yang, 2012, pp. 98–99).

In 1983, the government privatized several major commercial banks to restructure those that had relied on government guarantees and artificially low interest rates. Concerned that chaebols might significantly expand their influence by acquiring shares of the newly

privatized banks, the government imposed a restriction limiting individual ownership of banks to just 9% of total shares. However, chaebols circumvented these regulations by acquiring less regulated non-bank financial institutions (NBFIs), consolidating their power within the financial sector and gaining control over large portions of their own creditors (Henow, 2022, pp. 1167–1168). By 1985, debt-equity ratios of the largest chaebols exceeded 550%, prompting the government to introduce credit ceilings to reduce their reliance on bank loans. Yet, chaebols utilized their recently acquired NBFIs as intermediaries to access off-balance credit, which lowered debt ratios below 400%, but also enabled their rapid debt-driven expansion as they borrowed via sister companies and benefited from the “three lows”: a weak won against the yen, low oil prices, and low interest rates (IMF, 1998, pp. 12–14).

Significant restrictions on foreign exchange remained despite the government’s efforts to abolish most regulations on current account transactions in 1988, the same year that marked South Korea’s first peaceful transfer of power. In the early 1990s, President-elect Kim Young-Sam’s administration applied for membership in the OECD (Kim & Yang, 2012, p. 100). Admission required Korea to liberalize its economy to align with other advanced countries. The government was compelled to act quickly, and it initiated another wave of liberalization. Capital inflows were gradually opened, facilitating Korean organizations to borrow from abroad. Government control over commercial banks was relaxed, and foreign investors were allowed to purchase up to 10% of a Korean company (Henow, 2022, p. 1169; Kim & Lee, 2011, p. 506). Foreign exchange restrictions were eased by moving to a crawling peg exchange rate system, which widened the dollar-won trading margins, and the EPB was formally abolished and merged with the Ministry of Finance in 1994 (Han, 2014, p. 25; Kim & Yang, 2012, p. 100).

The second wave of deregulations was supported by both the government and the chaebols. The government sought to reduce chaebols’ high debt-equity ratios by encouraging them to go public and raise external capital, rather than relying heavily on debt. The chaebols, on the other hand, desired more independence from the government and

criticized the scope of the reforms as insufficient at combatting high financial costs; The liberalization of direct foreign financing gained traction after it became a key demand of chaebols (Henow, 2022, p. 1170).

A key reform during this period was the liberalization of short-term foreign-currency-denominated debt by raising the borrowing ceiling for domestic banks, while long-term borrowing remained tightly regulated. This resulted in a massive inflow of short-term foreign capital that was primarily funneled to the chaebols, which utilized their newly acquired NBFIs to borrow short from abroad and lend long to affiliates. This created a severe maturity mismatch, a key factor contributing to the onset of the 1997 Asian financial crisis in Korea (Kalinowski & Cho, 2009, p. 226). Foreign debt rose to US\$153 billion in 1997, up 72% from US\$89 billion just two years earlier (Statistics Korea, n.d.d). The total amount of debt was less concerning than its composition; nearly half was short-term, exceeding the BOK's available foreign currency reserves.

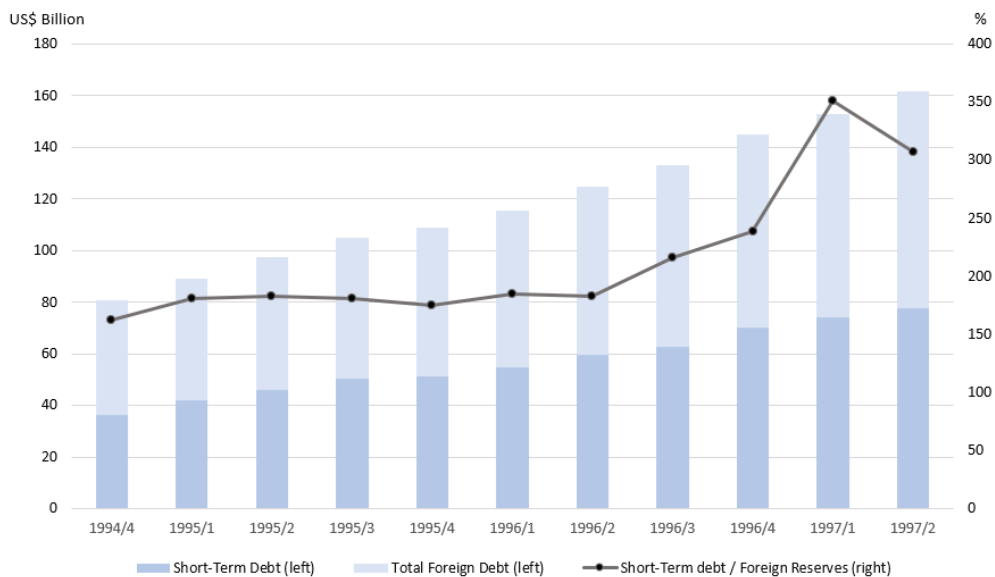


Figure 2. Foreign Debt, 1994 Q4 – 1997 Q2 (Statistics Korea, n.d.d)

Chaebols used cheap foreign liquidity to expand aggressively, and the debt-equity ratios of the 30 largest chaebols reached 400% by 1996 (OECD, 1998, pp. 21–22). This strategy of fueling expansion through debt heavily relied on continuous economic growth, which came to a screeching halt in the fall of 1997.

2.2 1997 Asian Financial Crisis

2.2.1 Emerging Economies and Large Capital Flows

Korea and Southeast Asian countries of Thailand, the Philippines, Indonesia and Malaysia received large capital inflows during the decade before the crisis. Booming economies and liberalizing financial markets attracted European and American investors, while the Plaza Accord of 1985 stamped the competitiveness of Japanese firms, incentivized them to outsource operations and pour around US\$15 billion of direct investment into Southeast Asia (SEA) between 1985 and 1990. A second wave of capital came as financial markets liberalized, attracting Western funds and investment institutions to reap dividends from growing enterprises (Bello, 1999, pp. 35–36). By 1996, net private inflows had ballooned to US\$103 billion, enabling these countries to finance growing CA deficits and increase foreign exchange reserves. Liberalization allowed foreign banks to open branches in SEA, where local rates were high. Domestic currencies pegged to the dollar encouraged locals to borrow cheaply from abroad with perceived reduced currency risk. A severe maturity mismatch developed as unhedged, short-term loans from foreign banks and security investments financed long-term, high-risk investments (Kim & Haque, 2002, pp. 39–41).

In Thailand, instead of strengthening the country's industrial capacity, debt was funneled into the stock and property markets, fueling a speculative boom. Leveraged assets were then used as collateral, inflating asset prices further. A construction frenzy ensued, resulting in an immense oversupply of commercial and residential properties, as the number of housing units in the Bangkok metropolitan area rose by 173% between 1980 and 2000, while population growth trailed behind at only 47% during the same period (Pornchokchai, 2003, pp. 1–2). The speculation was fueled not only by individuals and investment institutions but also by manufacturing firms that gambled on stocks and real estate instead of investing in their workforce or production technology, and by 1995,

US\$41 billion of Thailand's US\$83 billion total foreign debt was short-term (Bello, 1999, pp. 37–39). The reality of the real estate market began coming to light, as a survey by the Agency for Real Estate Affairs (1995) estimated that approximately 300 000 or 15% of total housing units were unoccupied, while over 60% of low-cost condominiums were bought by speculators. However, these warning signs of an imminent bust went unnoticed by the market, and construction of nearly 300 000 new housing units commenced over the following two years (Pornchokchai, 2002, p. 5).

Starting in 1995, the dollar began gradually appreciating against other major currencies, simultaneously strengthening the domestic currencies of emerging SEA countries that were pegged to it. The appreciation of the Thai baht caused export industries to lose competitiveness, reducing export demand and decreasing corporate profits. As profits fell and GDP growth slowed, overleveraged investments became unprofitable, leading to a proliferation of non-performing loans (NPLs). Assets prices began to fall as investors realized how perilous the financial market situation and credit risks were, prompting them to liquidate their investments. Investors and banks rushed to convert baht to dollars, putting enormous devaluation pressure on the baht. The Bank of Thailand attempted to uphold the baht's value by buying it with dollars, while domestic interest rates rose. However, maintaining the fixed exchange rate became so costly that investors began speculating against it, anticipating a massive devaluation. Finally, in July 1997, the Bank of Thailand ran out of dollars, leading to the floating of the baht. Subsequently, the baht crashed, losing 16% of its value in just one day, and depreciating further to nearly 60 baht per dollar from the pre-crisis rate of 25 baht per dollar (Bello, 1999, pp. 39–40; Kim & Haque, 2002, p. 41; Pornchokchai, 2002, p. 5). The sharply devalued baht increased financial costs for Thai debtors who had borrowed heavily from abroad, leading to a wave of bankruptcies and bank insolvencies. Spooked investors began scrutinizing nearby emerging markets and found similar systematic risks. Panic and doubt spread contagiously, leading to a rapid outflow of capital from SEA. A serious financial crisis had begun.

2.2.2 Background for Korea

The Korean economy appeared to be on stable ground before the crisis. GDP growth consistently exceeded 5% annually, the consumer price inflation rate remained relatively low at around 5%, household saved around 15% of their income, and foreign debt accounted to just 23.8% of GDP in 1996 (Statistics Korea, n.d.a; b; c; d). Despite these stable and positive macroeconomic indicators, Korea possessed similar systematic weaknesses that set off the crisis in Thailand. The commercial sector was heavily indebted, the current account deficit was growing, and corporate oversight was lacking.

Liberalized short-term foreign borrowing, tight domestic monetary policy, implicit government guarantees, and long-term foreign borrowing restrictions—such as a government mandate to report only long-term foreign debts—encouraged Korean firms and merchant banks to finance long-term operations with short-term, foreign-currency-denominated credit (Sharma, 2003, p. 211). Capital account liberalization facilitated foreign investors' entry into the Korean market, but it also exposed Korea to rapid capital outflows. Tight monetary policy stimulated import demand and capital inflows, worsening the trade deficit and channeling capital to chaebols, such as Daewoo, which monopolized sectors like shipbuilding, and expanded into highly competitive, capital-intensive markets like automobiles. This debt-driven expansion strategy often led to declining returns or losses, and in the three years before the crisis, return-on-equity for manufacturing chaebols fluctuated between 1.7% and 11.8% (Kim & Rhee, 1998, pp. 356–357).

The complex ownership structures of chaebols masked operational inefficiencies and allowed them to guarantee the loans of affiliates and raise capital internally through cross-subsidization and cross-equity ownership. The government—lobbied by chaebols—implicitly guaranteed commercial banks against insolvency and influenced the appointment of bank presidents, introducing conflicts of interest into the loan assessment process. As a result, banks extended loans to non-performing firms, leading to a proliferation of NPLs that banks often misclassified to embellish their financial statements (Choi,

Jen, & Shin, 2000, pp. 19–20). Korea’s total foreign debt-to-GDP ratio reached 28% in 1997, with 20% due in the first quarter of 1998. This situation left Korean debtors reliant on continuous domestic growth and a stable won (Crotty & Lee, 2009, p. 153). Since the won was pegged to the dollar, even a small depreciation against it would significantly increase the costs of dollar-denominated debt. The conditions were ripe for a balance-of-payments crisis.

Korean exports suffered as the dollar appreciated against other major currencies in 1995. Semiconductors were central to Korea’s export strategy, so when dynamic random-access memory (DRAM) chip prices nearly halved in 1996 (Aizcorbe, 2006, p. 486), the BOK intervened in the foreign exchange market to uphold the won’s value. The strong won policy was enacted to prevent a devaluation that would raise private debtors’ debt-servicing costs and trigger imported inflation. This policy was popular among Korean banks that were reliant on foreign loans, but it also had a depleting effect on foreign exchange reserves, which had already been reduced due to relaxed reserve requirements in the early ‘90s. Deteriorating trade and mounting debt ratios pushed six of Korea’s thirty largest chaebols into bankruptcy by early 1997, leading to an accumulation of NPLs on banks’ books and significant credit losses (Sharma, 2003, pp. 213–214, 216).

Table 2. Commercial Banks’ Non-Performing Loans (Kim & Rhee, 1998)

	1995	1996	1997/9	1997/12
<i>Non-performing loans (US\$ bil)</i>	10.71	10.37	21.67	23.33
<i>Ratio to total loans (%)</i>	6.1	4.9	9.5	10.0
<i>Ratio to GDP (%)</i>	4.2	3.7	7.1	7.6

The onset of the Thai currency crisis, followed by a sizeable devaluation in Taiwan, increased devaluation pressure on the won, while a stock market crash in Hong Kong further panicked foreign investors (Kim & Rhee, 1998, pp. 363–364). In October 1997, the Korean government’s bailout of the bankrupt KIA group raised doubts about Korea’s willingness and readiness to address its structural issues. Large capital outflows followed as

foreign credit rating agencies downgraded their assessments of Korean banks and investors liquidated won-denominated investments. The government claimed it could support the won's value with central bank reserves, but investor confidence was rocked when it became clear that the available reserves had been greatly exaggerated. These factors, along with the proliferation of NPLs, rendered Japanese banks—already burdened by domestic NPLs—unable to roll over Korea's short-term debt. Other countries' banks saw Japanese banks as highly experienced in the Korean market, so when Japanese lenders could no longer roll over Korean debt, other banks perceived it as a sign to suspend their own lending to Korea, triggering a severe liquidity squeeze (Kim & Rhee, 1998, pp. 361–363; Sharma, 2003, pp. 214–217). Capital outflow persisted, rapidly depleting Korea's foreign reserves and forcing the BOK to let the won float on November 16, 1997. The won-dollar exchange rate depreciated sharply, dropping from 922₩/\$ in October 1997 to 1707₩/\$ by January 1998 (Bank of Korea, n.d.), nearly doubling the cost of repaying dollar-denominated liabilities in won terms. Overleveraged firms could no longer meet their debt obligations, driving Korea's entire banking system to the brink of insolvency.

2.2.3 IMF Intervention

On November 19, 1997, faced with systemic insolvency and collapse, the Korean government was forced to seek emergency loans from the IMF. With 20% of short-term debt maturing by early 1998, negotiation time was short, so to receive a US\$57 billion rescue loan package, the government had to concede to practically all the conditions proposed by the IMF. G-7 countries, such as the U.S. and Japan, had significant influence over the package, as the majority of the loans were provided by the IMF, the World Bank and the Asian Development Bank—organizations that receive a lion's share of their funding from large economies (Sharma, 2003, p. 182). Despite previous robust macroeconomic indicators, Korea had to adopt rigid fiscal and monetary policy. Government spending was to be cut to maintain a slight budget surplus, domestic short-term interest rates were to be kept artificially high, and international capital flows had to be fully opened to

encourage foreign investment and stabilize the exchange rate (Kim & Rhee, 1998, p. 370). However, high domestic interest rates were not enough to attract foreign investors, as their trust in Korea had deteriorated following incorrectly reported reserves and commercial indebtedness. To alleviate the credit squeeze, the IMF negotiated with Japanese, European, and American banks to roll over maturing Korean short-term debt. The negotiations were successful, and Korea was given a grace period to restructure its failing banks (Sharma, 2003, p. 220).

Although the IMF's austerity measures succeeded in stabilizing the won, they also exacerbated the liquidity squeeze in the commercial sector, plunging Korea into its worst recession since the Korean War. Between 1997 and 1998, GDP growth was negative 5.1%, the unemployment rate grew by 169%, and private consumption contracted by over 44% in the first quarter of 1998 compared to the same period in 1997 (Statistics Korea, n.d. b; e; f). Observing that its measures had harmful unintended consequences, the IMF had to revise its approach by easing budget constraints and lowering interest rates, but the damage had already been done. A revision to the BOK Act—implemented in early 1998—dismantled the monopoly that the Ministry of Finance and Economy had exercised over the economy. Control over fiscal policy remained with the Ministry, but the authority to set interest rates and adjust the money supply was transferred to the Governor and Monetary Board of the BOK, effectively returning monetary policy independence to the BOK for the first time since the BOK Act was enacted in the 1950s. Reflecting Western trends, the BOK's mandate was limited to ensuring price stability. Control over exchange rates was relinquished by allowing the won to continue floating, and regulatory responsibilities were shifted to the newly established Financial Supervisory Commission (referred to as FSC hereafter, renamed the Financial Services Commission in 2008) (Sharma, 2003, pp. 222–223).

2.2.4 Aftermath of the Currency Crisis

The crisis accelerated financial liberalization, opening Korean money, bond and commodity markets to foreign competition and trade. Limits on foreign shareholding were eliminated, and hostile takeovers became possible. Foreigner ownership in the Korean stock market increased, and some chaebol owners allocated capital to initiate stock buy-back programs to retain control over their conglomerates against foreign takeover attempts (Kalinowski & Cho, 2009, pp. 228, 238–239). Chaebol overinvestment was seen as a key contributor to the Korean currency crisis, so several reforms were undertaken to solidify corporate financial structures. Monitoring and reporting standards were enhanced to identify unprofitable ventures, debt-equity ratio requirements were lowered to curb debt-fueled expansion, and cross-subsidiary loan guarantees were prohibited to discourage excessive borrowing and reduce interdependency (Goh et al., 2016, pp. 79–81).

The government allocated over US\$50 billion to prevent bank runs by guaranteeing deposits and restore trust through the restructuring of insolvent financial institutions. Struggling banks were evaluated and then either closed, recapitalized by injecting public funds, merged with more solvent banks, or taken over by the state and sold to foreign investors. The FSC played a central role in the efforts to restructure the banks, as it assumed supervisory and licensing responsibilities from the BOK. The FSC was put in charge of shutting down banks deemed non-viable and transferring their assets and liabilities to qualified suitors (Kalinowski & Cho, 2009, pp. 231–232; Sharma, 2003, pp. 222, 236–238).

Interest rate ceilings were removed to eliminate price distortions, inflation targeting was adopted to implement more predictable monetary policy, and the call rate became a mechanism for the BOK to influence short-term liquidity (Kim & Lee, 2011, p. 514). Korea's recovery was as swift as its decline had been. The significantly depreciated won boosted the competitiveness of Korean exporters, who reported huge profits as global

demand rebounded. Inflation remained below 5%, and GDP growth averaged 6.9% between 1999 and 2004 (Statistics Korea, n.d.a; b).

2.3 2008 Global Financial Crisis

2.3.1 Financial Innovations and Speculation

Liquidity was abundant in the U.S. after the tech bubble popped. Concerned that high interest rates might lead to deflation, the Federal Reserve (Fed) kept rates below 2% for most of the early 2000s (Federal Reserve System, n.d.). El-Shagi and Giesen (2013, p. 526) observed that this low-interest environment created a modest ‘monetary overhang’, where the real money supply exceeded real money demand in the economy. Capital flowed in as American securities attracted foreign investors. Emerging Asian economies further amplified this trend by purchasing American assets as a hedge against depreciation to prevent another currency crisis (Brunnermeier, 2009, p. 77).

To increase profits, commercial banks began experimenting with financial derivatives and adopted an ‘originate and distribute’ approach to lending. Instead of holding the rights to a loan principal and interest that would take decades to realize, mortgage lenders began selling their loans to investment banks. These banks then pooled different loan types together into collateralized debt obligations (CDOs), and resold portions to investors like shares of a fund (Brunnermeier, 2009, pp. 78–79). This process, known as ‘securitization’, allowed non-institutional investors to access high-yield investment opportunities while diversifying capital across multiple projects. CDOs include various types of debt—such as mortgages, commercial obligations, auto loans, or credit card debt—and the resold shares are called ‘tranches’, which are categorized by risk and associated returns. The most secure tranches are called ‘senior tranches’, which realize losses only after the capital for junior tranches is entirely depleted (Goodhart, 2008, pp. 341–342).

A maturity mismatch developed as investment banks borrowed short-term funds to acquire long-term loans used in securitization. This often occurred through off-balance-sheet entities like Structured Investment Vehicles, which kept banks' books free from liquidity risks associated with the mismatch. Insurance companies and investment banks also began selling credit default swaps (CDSs) to tranche buyers who wanted to insure their investment against default. Overly optimistic insurers—believing that asset prices would continue rising steadily and default rates would remain low—issued far more CDSs than they could ever cover in the event of mass defaults (Brunnermeier, 2009, pp. 79–80; Kim & Rhee, 2009, p. 148). CDS issuance generated excess capital for financial institutions, which they used to acquire more loans for securitization, further inflating land and asset values.

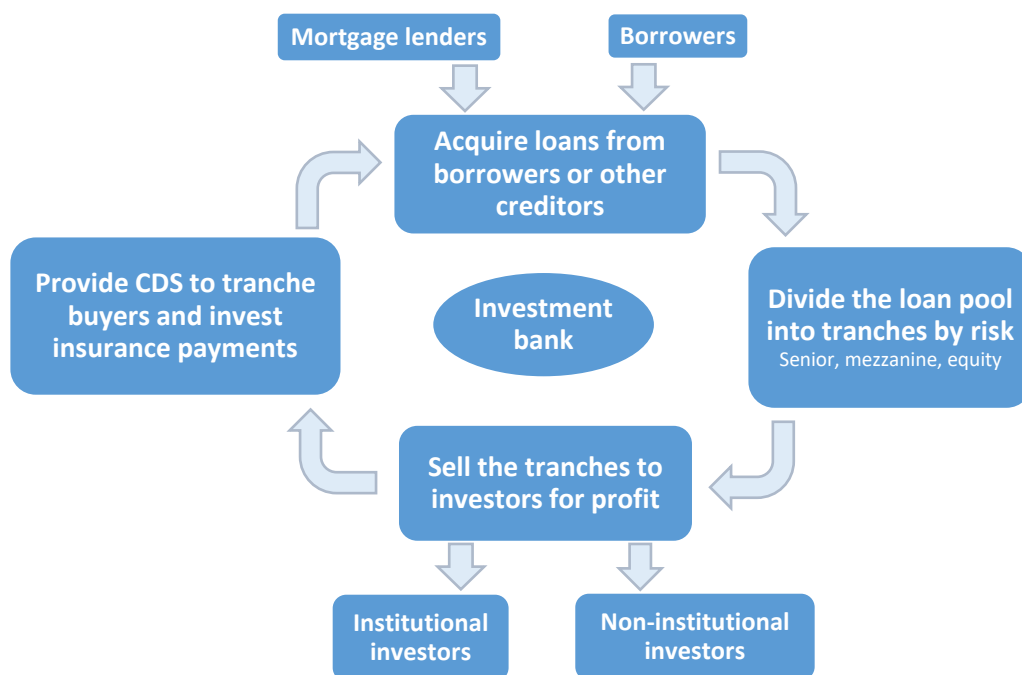


Figure 3. Securitization

At the time, risk was severely underpriced. Credit rating agencies (CRAs) assessed assets only for their default risk. Therefore, AAA-rated senior tranches were perceived as secure as AAA government bonds due to their low risk of realizing losses. Financial institutions that issued CDOs paid CRAs to rate their assets, leading to conflicts of interest (Goodhart, 2008, pp. 331, 337–339). Unsurprisingly, large portions of CRA revenue came from

assessing CDOs, and securitization packages were often given overly optimistic ratings, frequently in the investment-grade range, implying a low probability of default (Crotty, 2009, p. 566). The originate-and-distribute model effectively outsourced risk to third parties, complicating the job of supervisors in monitoring systemic dangers. As asset prices bubbled, banks extended loans to sub-prime borrowers—individuals with inadequate means to fulfill their debt obligations. The logic was that rising asset values would offset credit losses if a debtor defaulted (Brunnermeier, 2009, p. 82). A nationwide decline in house prices had not occurred since the Second World War, so investors were confident that the trend would persist (Goodhart, 2008, p. 337). Sub-prime loans proliferated rapidly, and their prominence as collateral for CDOs grew, significantly heightening default risks.

Asset prices had ballooned so high that mortgagors began defaulting on their debt in early 2007. Collateralized assets began accumulating on banks' books, pushing prices down as supply increased faster than demand in the market. Hedge funds and building contractors began reporting significant losses by July 2007 as devalued securities were fire-sold, and new properties were not purchased (Brunnermeier, 2009, pp. 82–84). Financial institutions were suddenly facing insolvency as they had to compensate for the credit default swap agreements they had issued. Unregulated off-the-balance-sheet investment vehicles were discovered, and the public lost confidence in the entire banking system, wondering just how much risk financial institutions had actually undertaken. Actors became suspicious of each other, and interbank money markets froze. Interest rates rose to reflect surging uncertainty, significantly raising debt rollover costs (Goodhart, 2008, p. 343). The crisis and liquidity squeeze spread abroad, and Lehman Brothers—one of the largest investment banks in the world—went bankrupt in September 2008, forcing the Fed and the U.S. government to act and bail out the financial system.

2.3.2 Capital Flow Dynamics

Korea's financial sector was on relatively stable ground after banking supervision and solvency requirements were tightened in the aftermath of the Asian financial crisis. Chaebol debt-equity ratios fell below 200%, and insolvent banks were restructured, closed or merged. Bank NPL ratios declined below 1%, and capital-to-risk-weighted assets exceeded 10%, a figure set by the Basel standards (Financial Services Commission, 2009; Yoon, 2011, pp. 107–108). Regardless, the economy began slowing down after its rapid recovery from the currency crisis. The price of crude oil gradually increased, and interest rates were hiked to calm rising housing prices (Macrotrends, n.d.; Tsutsumi, Jones, & Cargill, 2010, p. 7). The won also began gradually appreciating against the dollar in 2003, reducing the competitiveness of Korean exporters. Korean authorities sought to depreciate the won by encouraging capital outflow through the liberalization of capital account transactions. Capital outflow indeed ensued as Korean portfolio investments in foreign securities soared from US\$16.7 billion to US\$56.4 billion between 2005 and 2007. However, capital inflows increased as the demand for liquidity was met—mostly—with dollars. The BOK attempted to stabilize the won by expanding the money supply through purchasing dollar-denominated assets with won. However, domestic liquidity remained costly, prompting Korean organizations to rely on cheaper short-term foreign capital to fund their domestic operations or foreign investments, exacerbating a maturity mismatch (Park Y. C., 2009, pp. 11–14). As a nation greatly dependent on export-manufacturing, Korea was vulnerable to changes in global demand.

Lehman Brothers went under in September 2008, triggering a crisis of confidence and crashing stock markets around the world. Korea's financial markets were more liquid than those of other emerging Asian economies due to the shock liberalization of the 1990s. To secure their investments, foreign investors departed at a rapid rate, causing significant capital outflows and resulting in Korea's financial account recording a negative US\$51.2 billion in portfolio investments in 2009 (Bank of Korea, n.d.a). American financial institutions ceased lending, spreading a liquidity squeeze across the globe, consequently appreciating the dollar against other major currencies (Rose & Spiegel, 2011, p.

1). The demand for dollars remained high in Korea despite the supply drying up, reducing banks' foreign debt rollover rates below 40% and sharply depreciating the won (Park Y. C., 2009, pp. 20–22; Yoon, 2011, pp. 109–110). Despite the won depreciating 48% against the dollar between the first quarter of 2008 and 2009, exports declined by 25% during the same period, indicating a sharp decline in global economic activity (Bank of Korea, n.d.a; Statistics Korea, n.d.c).

2.3.3 Measures to Restore Confidence

Over the decade before the global financial crisis, Korea had eliminated foreign exchange regulations and accumulated over US\$250 billion in foreign reserves to prevent another currency crisis from happening (Statistics Korea, n.d.f). However, growing maturity and currency mismatches were not recognized in time, leading to severe funding shortages and heightened volatility in the commercial sector after the liquidity squeeze began in the U.S. Contrary to the IMF's previous measures, the BOK and Korean government sought to restore investor confidence by supporting struggling banks and companies with additional liquidity, demonstrating that *this time was different*.

To increase liquidity, the BOK expanded open market operations (OMOs) to include bank debentures and brokerage repurchase agreements, purchased NPLs from indebted construction and housings sectors, and provided a one-time interest payment on banks' reserve deposits (Lee & Rhee, 2012, p. 54). The Base Rate was lowered from 5.25% to 2% between September 2008 and February 2009, and the BOK provided capital to funds that extended liquidity to struggling organizations. The Bond Market Stabilization Fund was created to assist SMEs with debt financing, and the Bank Recapitalization Fund provided liquidity to banks for share or bond issuance (Yoon, 2011, p. 114). This time, the won's value was allowed to fluctuate, and foreign reserves were not depleted to maintain a fixed rate; instead, the BOK lent foreign capital directly from the reserves it had amassed (Baba & Shim, 2014, p. 285).

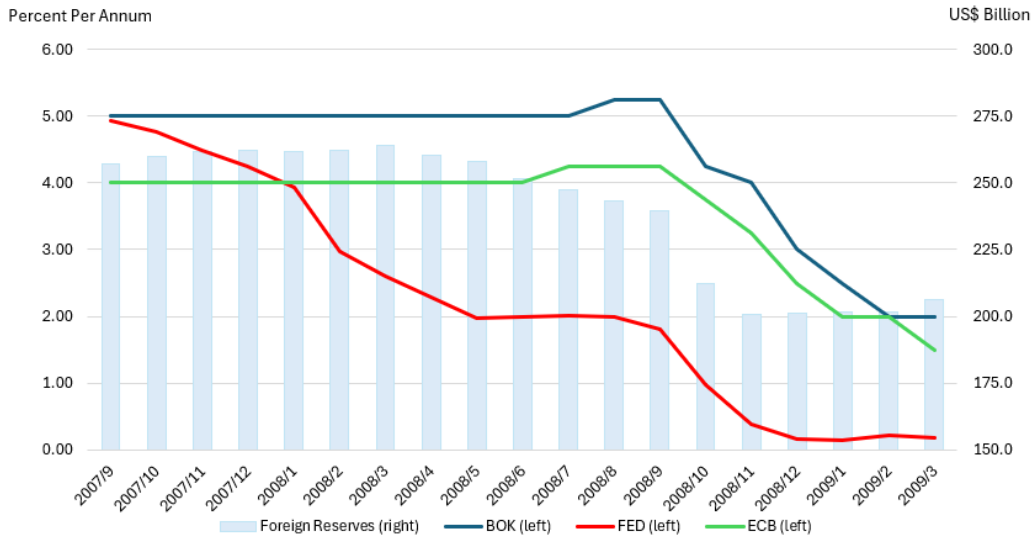


Figure 4. Policy Rate Trends and Foreign Reserves, Sep 2007 – Mar 2009

The won's depreciation persisted despite the BOK's efforts to supply liquidity. Exchange rate stability was finally achieved in December 2008 after the BOK secured a US\$30 billion currency swap line with the Fed and established additional swap lines worth US\$40 billion with China and Japan, further providing dollar-denominated liquidity to Korea's commercial sector. The BOK also guaranteed bank borrowing up to US\$100 billion and participated in establishing the Chiang Mai Initiative alongside ASEAN+3 (ASEAN plus China, Japan and Korea) countries (Yoon, 2011, pp. 114–115). The initiative aimed to create a fund to directly support or provide currency swaps to member countries facing currency crises, reducing the region's dependency on external institutions such as the IMF. Korea contributed approximately US\$19 billion and assumed a role balancing China's and Japan's influence in the decision-making of the fund (Sussangkarn, 2011, pp. 210–212). A similar institution called the Asian Monetary Fund was proposed during the Asian financial crisis, but the idea was scrapped following strong opposition from the U.S. and IMF (Bello, 1999, pp. 46–47).

2.3.4 Rapid Recovery

The impact of the Global Financial Crisis on Korea was relatively shallow, as the country had recently strengthened the solvency of its commercial sector following the Asian

Financial Crisis. Expansionary economic measures—enabled by a relatively modest public debt level and budget balance—compensated for diminishing foreign liquidity. Currency swap agreements effectively stabilized the won and provided liquidity to banks, which resumed lending to SMEs, preventing the unemployment rate from soaring (Statistics Korea, n.d.j). Fiscal and monetary stimulus revived domestic demand, while Korean exporters utilized the steeply depreciated won and global stimulus packages, restoring exports to pre-2008 levels by the end of 2009 (Statistics Korea, n.d.c).

2.4 The COVID-19 Recession

As mentioned earlier, the Park Chung-Hee administration pursued export-led growth through comparative advantage in the 1960s. The manufacturing sector flourished as the government provided lavish incentives, and companies ascended to chaebol status by capitalizing on low labor costs and a relatively well-educated workforce. Similarly in the 1980s China, economic liberalization, combined with its vast workforce, transformed the nation into the world's factory. Seeking access to new markets and the benefits of lower production costs, textile and apparel manufactures, automakers like Volkswagen, and later technology giants like Apple outsourced production and supply chains to China, deepening global economic interdependence.

In December 2019, patients with pneumonia-like symptoms began surfacing near a wet market in Wuhan, China. Scientists quickly identified the disease as a coronavirus, related to previous outbreaks such as the severe acute respiratory syndrome (SARS) and the Middle East respiratory syndrome (MERS) (World Health Organization, 2021, p. 9). Although the exact origin of the new coronavirus (COVID-19) remains uncertain, it spread rapidly throughout the Hubei Province and the rest of mainland China before reaching nearby Asian countries and the U.S. in January 2020 (World Health Organization, 2020a). To combat the spread of the virus, the Chinese government enacted draconian lockdown measures, starting with the overnight shutdown of Wuhan—a city of over 12 million residents—for more than two months. Lockdowns were later extended to other

major hubs of trade, including Shanghai and Shenzhen, as the Omicron variant began spreading, paralyzing the country's commercial sector (Gong et al., 2024, p. 2). These drastic measures restricted the movement of individuals and the operations of non-essential businesses, as reflected in a stark reduction in air pollution across China's metropolises (Shi & Brasseur, 2020).

2.4.1 Curbing the Spread of COVID-19

After the number of global COVID-19 cases surpassed 100 000, the World Health Organization (2020b) officially characterized the virus as a pandemic on March 11, 2020. Person-to-person transmission of the virus remained rapid, prompting countries around the world to enact measures to minimize interactions between individuals in public spaces to curb the spread, inevitably disrupting global supply chains and hindering global economic activity. The first case of COVID-19 in Korea was recorded on January 20, 2020, and the first quarantine measures were imposed on travelers from Wuhan. However, the virus had already evaded detection and began spreading in the North Gyeongsang province in February, prompting Korean health authorities to commence an extensive track-and-trace response (Kim et al., 2021, pp. 3–4). In contrast with China, Korea opted to deal with the spread of the virus through mass testing and social distancing measures instead of lockdowns. All probable cases were subjected to mandatory 14-day-self quarantine, and entry restriction were extended, beginning with Japan after the WHO characterized COVID-19 as a pandemic. Visa-free entry agreements were suspended, and quarantine requirements were levied on all inbound travelers by April (Ministry of Foreign Affairs, 2020, pp. 87–89, 94). Entry requirements were not imposed on essential travelers like diplomats, but they severely impacted air travel and leisure sectors, as tourism to Korea plummeted and business travel was hindered.

Korea experienced its second wave of COVID-19 in August 2020, resulting in the tightening of social distancing guidelines. “Non-essential” businesses like karaoke bars and PC cafes were advised to shut down or enforce social distancing measures. These included

masks, physical distancing when possible, and attendee information tracking such as the 'KI-Pass' (Korean Internet Pass) (Ministry of Foreign Affairs, 2020, pp. 114–116, 120). The KI-Pass app generated anonymized codes for its users, which could be used to enter establishments that tracked attendance through QR codes (Tejerina et al., 2024, p. 34). Although tracking measures like the KI-Pass were anonymous, they still tracked the user's location to alert individuals in proximity about a possible contagion. Meaning, Koreans forfeited some of their privacy to aid health authorities in their ambitious track-and-test approach. Compliant businesses suffered severe losses as business hours were cut, non-essential gatherings were suspended, and physical social distancing measures were implemented. At the same time, the BOK adopted conventional, and even unconventional monetary measures to alleviate the plight of the impacted sectors.

2.4.2 Historic Stimulus Measures

Demand for Korean goods and services contracted as economies around the world ground to a halt. Cash flows dried up, and Korean firms experienced difficulties servicing their debt and paying employees. Credit spreads between government and corporate bonds widened as default risk heightened, and the won depreciated as volatility in the stock market increased, intensifying capital outflows (Hoshikawa & Yoshimi, 2021, pp. 209–213; Seo, 2024, p. 3). To stabilize the won and prevent mass bankruptcies and unemployment, the BOK adopted expansive monetary instruments and worked alongside the government to provide liquidity for the commercial sector.

Starting in April 2020, the BOK lowered the base rate to a historic low of 0.5% and executed open market operations through the purchase of treasury bonds and repurchase agreements from brokerages. Lending limit conditions for financial institutions were eased, and the BOK extended low-interest, short-term Financial Intermediary Support Loans (FISLs) to regional banks on the condition that they would provide credit to SMEs (Bank of Korea, 2021; Seo, 2024, pp. 2–3). Figure 5 presents FISL interest rate trends and the maximum amount banks could borrow from the BOK through the system.

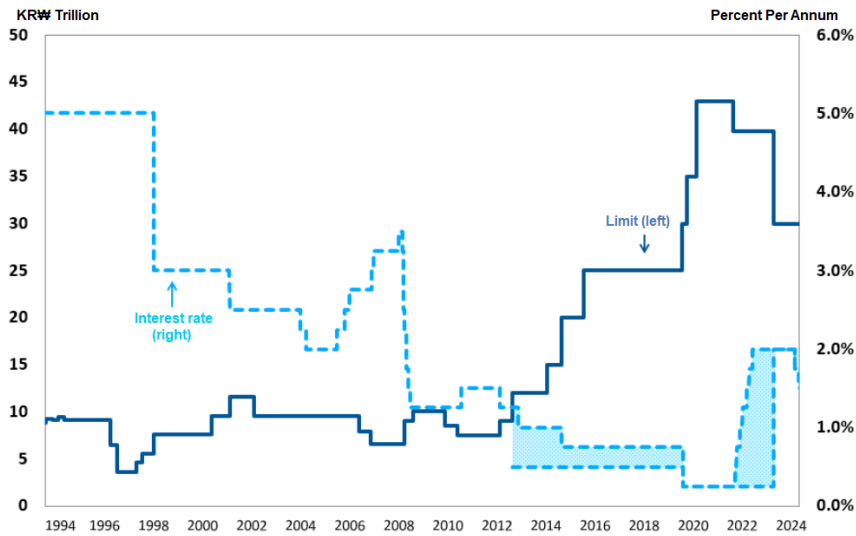


Figure 5. FISL Rates and Borrowing Limits (Bank of Korea, 2024)

The Fed extended temporary currency swap lines to nine countries, including Korea, in March. Korea’s swap line agreement was set at US\$60 billion, of which US\$20 billion was drawn by May (Yun, 2021, pp. 2–3). Yun (2021) also concluded that Korea obtained US\$11 billion in additional liquidity from countries other than the U.S. through an international spillover effect. The BOK contributed to the government’s US\$116 billion relief package and seemingly intervened in the foreign exchange market, as indicated by a US\$9 billion drop in foreign reserves between February and March 2020 (Ministry of Foreign Affairs, 2020, pp. 175–176; Statistics Korea, n.d.f). However, COVID-19 was such a significant exogenous shock that financial markets did not recover despite extensive monetary and fiscal stimulus, prompting the BOK to implement more unconventional measures to influence long-term interest rates, which remained high despite the record-low base rate and aggressive OMOs.

The main methods chosen by the BOK were quantitative easing (QE), forward guidance, and lending through Special Purpose Vehicles (SPVs) (Bank of Korea, 2021). The idea of QE is to influence long-term rates by increasing the money supply—in other words, injecting liquidity into the financial system through large-scale purchases of long-term securities such as sovereign bonds and mortgage-backed securities (MBS). Forward

guidance, on the other hand, aims to indirectly affect long-term rates by explicitly expressing future policy direction based on the current economic outlook, creating a predictable environment for investment. SPVs, which the Fed has used since the Global Financial Crisis, are NBFIs that provide liquidity by borrowing from a central bank and purchasing corporate paper. However, at the onset of the pandemic, the BOK Act restricted central bank lending to banks, except in cases of managing “an exceptional crisis”. In response, the BOK’s Monetary Board interpreted the law to permit lending to NBFIs that extended credit to firms struggling to access capital (Seo, 2024, p. 3; Shin, 2021, pp. 32–35).

2.4.3 Persistent Inflation

Expansionary measures should be taken with caution, as excessive easing can cause inflation and distort efficient credit allocation. Although QE is essentially a balance sheet reshuffling, long-term asset purchase programs tend to inflate asset prices by increasing demand through central bank purchases and encouraging borrowing due to reduced long-term rates. It is, therefore, not surprising that Korean housing prices increased significantly compared to previous crises when the monetary response was more contractionary.

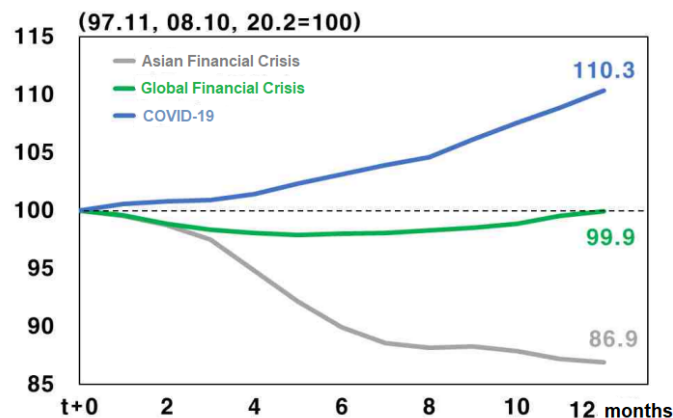


Figure 6. Post-crisis Housing Prices in Korea (Seo, 2024, p. 4)

The pandemic persisted despite global measures to curb its spread. Housing prices rose and household debt accumulated, prompting the BOK to begin raising rates in August 2021 (Bank of Korea, n.d.b). Another supply-side shock—driven by increased fuel and grain prices—occurred as Russia commenced its full-scale invasion of Ukraine, pushing inflation in Korea above 5% (Statistics Korea, n.d.a). Subsequently, the BOK faced the challenge of balancing high household debt ratios with inflation management and raised the base rate by 50 basis points in July 2022. However, this approach proved to be too cautious, as the Fed responded to domestic inflation more aggressively than expected, causing a rapid appreciation of the dollar against the won in late 2022 (Park & Rhee, 2024, pp. 3–4).

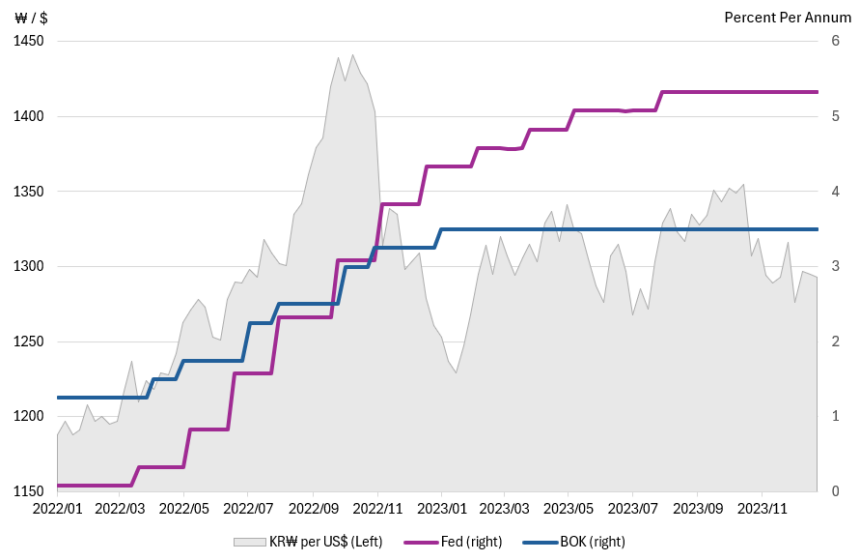


Figure 7. Rate Hikes and Dollar Appreciation (The BOK, Fed & Yahoo Finance)

The value of the won stabilized after the BOK reacted to the Fed’s monetary tightening. As shown in Figure 7, the base rate was raised rapidly by over 200 basis points in less than a year, putting pressure on Korean debtors and heightening market anxiety. Inflation remained relatively high, so the base rate was held at 3.5% until September 2024, compelling the BOK to lower risk premiums and market rates through OMOs. These operations included directly or indirectly purchasing repurchase agreements and expanding the types of debt that could be used as collateral to borrow from the BOK (Park & Rhee, 2024, p. 11).

The post-COVID world presents significant challenges to the Korean economy while the threat of a nuclear conflict with the North persists. Ultra-low birthrates burden workers as pension and healthcare costs rise, and political polarization fragments the society, exemplified by President Yoon Suk-Yeol's recent, sudden martial law declaration (BBC, 2024). Complacent chaebols must innovate to remain competitive in the global market, while the concentration of economic activity in the capital region leaves rural areas behind and exacerbates Seoul's cost-of-living crisis.

3 Theoretical Framework

Some of the most distinguished monetary theories are rather recent. It was not until the 1990s when John B. Taylor (1993) unveiled his work on monetary policy implementation, which conceived the Taylor Rule. The rule sets the nominal interest rate based on lagged inflation and the output gap. A two-percent inflation rate target is embedded in the model, as a higher level applies upward pressure on the nominal interest rate.

The Phillips curve, which illustrated a negative relationship between unemployment and inflation, became redundant in the 1970s when the first oil shock raised both unemployment and inflation. Instead of directly modeling the unemployment rate, the New Keynesian Phillips Curve seeks to explain inflation through past and expected future inflation, as well as a measure of marginal costs. A measure of marginal costs is used because a rise in the marginal cost of production is expected to translate to higher prices.

The Quantity Theory of Money equates the velocity of money and the money supply to prices and the number of transactions in an economy. The theory was popularized in the 20th century by Irving Fisher and Milton Friedman, who used it to explain that inflation is primarily caused by increases in the money supply. However, modern monetary theorists challenge this view, arguing that during periods of high financial stress, such as negative growth or a liquidity squeeze, increased demand—induced by monetary stimulus—corrects the negative output gap instead of raising prices.

The Interest Rate Parity Theory governs that there are no free lunches in international exchange. The model assumes that the difference between the interest rates of two countries is the equivalent to the difference between their spot and future exchange rate rates, meaning that one currency cannot appreciate indefinitely and provide risk-free profit to its holders. Another concept explaining foreign exchange is the impossible trinity, formulated separately by Robert A. Mundell and John M. Fleming in the 1960s. The trinity states that an economy cannot simultaneously maintain a fixed exchange rate, free capital flows, and independent monetary policy.

4 Empirical Literature Review

Economic crises often occur during periods of high financial stress, characterized by slow or negative growth, depreciating currency, high inflation and increasing market rates. Fry-McKibbin and Zheng (2016) and Li and St-Amant (2010) examined how different financial stress environments impacted the response of output and inflation to monetary policy shocks. Although the studies diverged on how much different stress environments impacted the effects of monetary policy shocks, both concluded that contractionary monetary policy carries a significant probability of prolonging a period of high financial stress or shifting an economy from low to high financial stress. Fry-McKibbin and Zheng (2016) found that during periods of high financial stress in the U.S. from 1973 to 2008, expansionary monetary policy had a large positive impact on output, while contractionary measures negatively affected it. In contrast, Li and St-Amant (2010) concluded that, regardless of the ongoing financial stress environment, output and inflation respond more strongly to contractionary monetary policy than to expansionary measures in Canada between 1981 and 2006.

Benchimol and Fourçans (2017) examined how key monetary variables were impacted by monetary policy shocks during the Global Financial Crisis in the Eurozone. They found that the effects of monetary policy shocks on output, inflation, and bond market credit spreads were more prominent in the short term, whereas long-term impacts were attributed more to technological advancement. The Eurozone entered a decade of slow growth following the crisis, and unconventional measures such as Quantitative Easing were introduced to stimulate investment. Basdekis et al (2023) studied how the European Central Bank's (ECB) unconventional measures affected firm performance indicators in Greece and concluded that the expansion of the ECB's balance sheet—driven by Quantitative Easing—enhanced the profitability of publicly traded Greek companies, particularly those with high debt leverage, through lower debt servicing costs and reduced systemic risks.

Forward guidance is another unconventional instrument adopted by major central banks following the Global Financial Crisis. Böck et al (2021) observed that forward guidance has the most pronounced effects during financial crises. Similarly, Zlobins (2021) analyzed how the ECB's unconventional measures impacted the short-term interest rate (3-month Euribor), its 1-year forward price, and 10-year government benchmark bond yields between January 2009 and December 2018, finding that forward guidance significantly influenced the 1-year forward rate. However, he also observed that forward guidance had a negligible effect on 10-year bond yields, whereas the ECB's asset purchase programs contributed to lowering them. Bundick and Smith (2022) corroborate that forward guidance and QE are instruments that reinforce each other; failing to consider one may lead policymakers to overestimate the effects of the other.

Taiwan was similar to Korea before the onset of the Asian Financial Crisis. Both were small and open export-oriented economies with heavily managed exchange rates and a reliance on exports for growth. Ho and Yeh (2010) analyzed the period from 1981 to 2005 and observed that contractionary monetary policy in Taiwan significantly depleted foreign reserves and reduced long-term real GDP. Restrictions on foreign ownership in Korean securities markets were eased, and the won was floated amid the shock liberalization of the Korean economy following the Asian Financial Crisis. Kim (2014) explored the effects of monetary policy on the exchange rate in Korea between 1999 and 2012 and estimated that—unlike during the currency crisis—a contractionary shock would appreciate the won as foreign capital seeks higher yields from the bond market. However, Gülşen and Özmen (2020) found that the increased risk aversion of investors during a crisis induces capital outflow from emerging markets to advanced economies, indicating that Korea should position itself as an advanced and stable economy to attract capital during uncertain times.

Gülşen and Özmen (2020) also examined how changes in the U.S. federal funds rate from 1990 to 2016 impacted foreign economies. They concluded that domestic interest rates in emerging market economies were more affected by changes in the federal funds rate

than those in advanced economies, while their respective exchange rate regimes had no meaningful effect. Exposure to the U.S. was also studied by Rose and Spiegel (2012), who examined a wide range of OECD and non-OECD countries to assess the impacts of the Fed's currency swap agreements during the Global Financial Crisis. They found that currency swap lines were more beneficial to countries with greater exposure to the U.S. through trade or investments.

5 Conclusion

5.1 Summary

Korea's state-led, export-favoring approach raised millions out of poverty, but it also gave rise to the chaebols, which exert significant influence over the economy and politics. Structural weaknesses and unchecked financial liberalization enabled debt-fueled chaebol expansion, exacerbating maturity mismatches and exposing Korea to the currency crisis triggered by speculative attacks and the Thai baht's floatation. Contractionary monetary policy—urged by the IMF—exacerbated the credit squeeze and deepened the recession following the onset of the Asian Financial Crisis. Liquidity provision through currency swap lines and open market operations stabilized the won and prevented mass bankruptcies during the Global Financial Crisis, while banking reforms and strengthened financial supervision around the turn of the millennium further softened its impacts in Korea. In line with other advanced economies amid the COVID-induced downturn, historic expansionary monetary policy implemented through unconventional instruments alleviated the corporate sector while playing a part in the acceleration of inflation.

Maturity and currency mismatches, which were central to Korea's endogenous crises, seem to be difficult to prevent, particularly when capital flows are free. The yen carry trade is a timely example where investors defy currency risks and leverage low Japanese rates to invest in higher-yielding securities, particularly in the U.S. If low rates encourage investors to direct capital abroad, then the opposite should make the domestic currency more enticing. However, based on Korea's experiences, this is not always the case. Confidence is easily shattered, and it takes time to recover. Prudent financial supervision is key to protecting investors and retaining their trust by preventing crises that arise from irresponsibility or outright corruption. However, crises are not always preventable, as exemplified by the COVID-19 pandemic, so the financial sector and central bank must be prepared to adapt to different stress scenarios.

5.2 Recommendations

The observations in my thesis underline the importance of maintaining a significant foreign currency reserve buffer, regardless of the adopted exchange rate regime. Maintaining a fixed exchange rate requires the central bank to adjust foreign reserves, while reserves can serve as an important source of foreign-currency liquidity during a credit squeeze and help prevent a sudden depreciation. Preventing a rapid depreciation is crucial for small, export-dependent countries such as Korea, as it disrupts price stability by accelerating inflation and burdens debtors holding foreign liabilities.

Economic crises often follow periods of elevated financial stress, characterized by heightening market anxiety and a tightening financial environment. Drawing from Korea's experiences and relevant empirical studies, central banks should implement expansionary monetary policy to combat diminishing market liquidity and prevent mass bankruptcies and bank insolvencies, while measures such as currency swap lines provide an important avenue to access foreign currency and stabilize foreign exchange markets. However, contractionary monetary policy may be necessary to tackle excessive monetary expansion.

Unconventional monetary policy instruments have proven effective in influencing long-term rates, although excessive liquidity provision risks exacerbating inflation. In this context, I find forward guidance particularly valuable for promoting financial stability and managing market expectations. For instance, inflation targeting sets a concrete goal for monetary policy, offering early guidance to shape expectations. The importance of predictability was illustrated by President Yoon's abrupt declaration of martial law in December 2024, which heightened market anxiety and caused the won to depreciate to its lowest value since the Global Financial Crisis, while the Korean stock index lost millions in value.

6 References

- Agency for Real Estate Affairs. (1995). A Comprehensive Survey of BMR Unoccupied Housing. *Bangkok: Agency for Real Estate Affairs.*
- Aizcorbe, A. (2006). Why did semiconductor price indexes fall so fast in the 1990s? A decomposition. *Economic Inquiry*, 44(3), 485-487.
- Asianometry. (2024). *How South Korea's Weapons Industry Began*. Retrieved from YouTube: <https://youtu.be/GNnL5fefVUw>
- Baba, N., & Shim, I. H. (2014). Dislocations In the Won-Dollar Swap Markets During The Crisis Of 2007–2009. *International Journal of Finance & Economics*, 19(4), 284–285.
- Bank of Korea. (2021). *Monetary Policy Following COVID-19 (in Korean)*. Retrieved from <https://www.bok.or.kr/portal/bbs/B0000216/view.do?menuNo=20134&nttId=10066458>
- Bank of Korea. (2024). *Financial Intermediary Support Loans (in Korean)*. Retrieved from <https://www.bok.or.kr/portal/singl/entrprsInquire/inquire.do?menuNo=200360>
- Bank of Korea. (n.d.). *Economic Statistics System*. Retrieved from <https://ecos.bok.or.kr/#/>
- Bank of Korea. (n.d.a). *Balance of Payments*. Retrieved from Economic Statistics System: ecos.bok.or.kr/#/Short/7649c4
- Bank of Korea. (n.d.b). *Bank of Korea Base Rate & Interest Rates on Loans and Discounts*. Retrieved from Economic Statistics System: ecos.bok.or.kr/#/Short/08d173
- Bank of Korea. (n.d.c). *Exchange rates of major currencies against the Korean won*. Retrieved from Economic Statistics System: ecos.bok.or.kr/#/Short/f4d170
- Basdekis, C., Christopoulos, A., Gakias, E., & Katsampoxakis, I. (2023). The Effect of ECB Unconventional Monetary Policy on Firms' Performance during the Global Financial Crisis. *Journal of Risk and Financial Management*, 16(5), 1-20.
- BBC. (2024). *Why did South Korea's president declare martial law - and what now?* Retrieved from <https://bbc.com/news/articles/c0lgw1pw5zpo>
- Bello, W. (1999). The Asian financial crisis: Causes, dynamics, prospects. *Journal of the Asia Pacific Economy*, 4:1, 33-47.

- Benchimol, J., & Fourçans, A. (2017). Money and monetary policy in the Eurozone: an empirical analysis during crises. *Macroeconomic Dynamics*, 21(3), 677-707.
- Böck, M., Feldkircher, M., & Siklos, P. L. (2021). International effects of euro area forward guidance. *Oxford Bulletin of Economics and Statistics*, 83(5), 1066-1092.
- Brunnermeier, M. K. (2009). Deciphering the liquidity and credit crunch 2007-2008. *The Journal of Economic Perspectives*, 23(1), 77–85.
- Bundick, B., & Smith, L. A. (2022). Evaluating Quantitative Easing: The Importance of Accounting for Forward Guidance. *Federal Reserve Bank of Kansas City, Economic Review*, 107(3), 5-20.
- Choi, D. S., Jen, F. C., & Shin, H. H. (2000). Causes and consequences of the Korean financial crisis. *Review of Pacific Basin Financial Markets and Policies*, 3(01), 19-24.
- Chung, P. (2014). The “pictures in our heads”: Journalists, human rights, and US–South Korean relations, 1970–1976. *Diplomatic History*, 38(5), 1136-1155.
- Cole, D. C., & Park, Y. C. (1983). Financial Development in Korea, 1945-1978. *Harvard East Asian Monographs*, number 106, 42-55.
- Crotty, J. (2009). Structural causes of the global financial crisis: a critical assessment of the ‘new financial architecture’. *Cambridge Journal of Economics* 2009, 33(4), 563–566.
- Crotty, J., & Lee, K. K. (2009). Was IMF-imposed economic regime change in Korea justified? The political economy of IMF intervention. *Review of Radical Political Economics*, 41(2), 149-156.
- El-Shagi, M., & Giesen, S. (2013). Money and inflation: Consequences of the recent monetary policy. *Journal of Policy Modeling*, 35(4), 520-537.
- Federal Reserve System. (n.d.). *H.15 Selected Interest Rates*. Retrieved from <https://www.federalreserve.gov/datadownload/Choose.aspx?rel=H15>
- Feenstra, R. C., Inklaar, R., & Timmer, M. P. (2015). The Next Generation of the Penn World Table. *American Economic Review*, 105(10), 3150-3182.

- Financial Services Commission. (2009). *Corporate Restructuring Progress & Financial Sector's Non-Performing Loans*. Retrieved from Press Releases: <https://www.fsc.go.kr/eng/pr010101/21869>
- Fry-McKibbin, R., & Zheng, J. (2016). Effects of the US monetary policy shocks during financial crises—a threshold vector autoregression approach. *Applied Economics*, 48(59), 5802-5823.
- Goh, J., Choi, W. w., & Cho, J. (2016). Changes in chaebol firms' overinvestment after the Asian financial crisis: a long-term perspective. *Asia-Pacific Journal of Accounting & Economics*, 23:1, 75–83.
- Gong, D., Shang, Z., Su, Y., Yan, A., & Zhang, Q. (2024). Economic impacts of China's zero-COVID policies. *China Economic Review*, 83, 1–3.
- Goodhart, C. (2008). The background to the 2007 financial crisis. *Economics and Economic Policy*, 4(4), 331–346.
- Gülşen, E., & Özmen, E. (2020). Monetary policy trilemma, inflation targeting and global financial crisis. *International Journal of Finance & Economics*, 25(2), 286-296.
- Han, S. H. (2014). Operation of the Economic Planning Board in the Era of High Economic Growth in Korea. *Ministry of Strategy and Finance, Republic of Korea*, 23-45.
- Henow, A. (2022). Helpless victim of financialisation? Financial liberalisation, crisis and taking back control in South Korea. *Cambridge Journal of Economics*, Volume 46, Issue 5, 1161-1171.
- Ho, T. K., & Yeh, K. C. (2010). Measuring monetary policy in a small open economy with managed exchange rates: The case of Taiwan. *Southern Economic Journal*, 76(3), 811-826.
- Horesh, N. (2013, 12). *Japanese Colonial Banking and Monetary Reform: China, Korea, and Taiwan, 1879–1937*. Retrieved from Stanford Scholarship Online: <https://doi.org/10.11126/stanford/9780804787192.003.0007>
- Hoshikawa, T., & Yoshimi, T. (2021). The Effect of the COVID-19 Pandemic on South Korea's Stock Market and Exchange Rate. *The developing economies*, 59(2), 206–222.
- IMF. (1998). Republic of Korea: Selected Issues. *IMF Staff Country Report No. 98/74*.

- Kalinowski, T., & Cho, H. K. (2009). The political economy of financial liberalization in South Korea: State, big business, and foreign investors. *Asian Survey*, 49(2), 221–230.
- Kim, I. J., & Rhee, Y. S. (1998). The Korean Currency Crisis and the IMF Program: An Insider's View. *Seoul Journal of Economics*, 11(4), 351-368.
- Kim, I. J., & Rhee, Y. S. (2009). Global Financial Crisis and the Korean Economy. *Seoul Journal of Economics*, 22(2), 145–150.
- Kim, K. S., & Lee, J. W. (2011). Monetary Policy of the Bank of Korea during the First 60 Years. *Seoul Journal of Economics*, 24(4), 495-517.
- Kim, S. H., & Haque, M. (2002). The Asian financial crisis of 1997: Causes and policy responses. *Multinational Business Review*, 10(1), 37-42.
- Kim, S. Y. (2007). Consolidating the authoritarian developmental state in the 1970s Korea: Chosen strategies. *International Review of Public Administration*, 12(1), 119–130.
- Kim, S. Y. (2014). Effects of monetary policy shocks on the exchange rate in the Republic of Korea: Capital flows in stock and bond markets. *Asian Development Review*, 31(1), 121-135.
- Kim, S. Y., & Yang, D. Y. (2012). Are capital controls effective? the case of the Republic of Korea. *Asian Development Review*, 29(2), 97-102.
- Kim, Y. K., Poncelet, J. L., Min, G. Y., Lee, J. K., & Yang, Y. J. (2021). COVID-19: systemic risk and response management in the Republic of Korea. *Progress in Disaster Science*, 12, 1–8.
- Kim, Y. S. (1990). Korea's Export-Managed Industrialization and Its Lessons. *Human Systems Management*, 9(3), 173-178.
- Lee, B. S. (1966). Central banking and monetary control in Korea, 1950-1963. *New York University*, 1-6.
- Lee, E. Y. (1976). Exchange-rate devaluations and the dynamics of inflation in Korea, 1955-1969. *American Economist*, 20(2), 7-15.
- Lee, H. Y., & Rhee, C. Y. (2012). Lessons from the 1997 and the 2008 Crises in Korea. *Asian Economic Policy Review*, 7(1), 47–59.

- Li, F., & St-Amant, P. (2010). Financial Stress, Monetary Policy, and Economic Activity. *Bank of Canada Working Paper 2010-12*, 1-16.
- Lim, T. Y. (2012). *Illusions of Neoliberalization: The Dual Nature of the Reform of the Bank of Korea since the Economic Crisis of 1997*. Retrieved from *Globalizations*, 9:5, 686-690: <https://doi.org/10.1080/14747731.2012.732431>
- Lim, W. H. (2000). The Origin and Evolution of the Korean Economic System. *Korea Development Institute*, 23-46.
- Macrotrends. (n.d.). *Crude Oil Prices - 70 Year Historical Chart*. Retrieved from <https://www.macrotrends.net/1369/crude-oil-price-history-chart>
- Ministry of Foreign Affairs. (2020). *(Document) All about Korea's Response to COVID-19*. Retrieved from https://www.mofa.go.kr/eng/brd/m_22589/view.do?seq=35&page=1
- OECD. (1998). *OECD Economic Surveys: Korea 1998*. Retrieved from OECD Publishing: https://doi.org/10.1787/eco_surveys-kor-1998-en
- Park, Y. C. (2009). Global economic recession and East Asia: How has Korea managed the crisis and what has it learned. *Bank of Korea Institute for Monetary and Economic Research working paper series*, (409), 1–22.
- Park, Y. H., & Rhee, C. Y. (2024). *The Bank of Korea's Policy Response during the High Inflation after COVID-19 (in Korean)*. Retrieved from Korean Open Access Journals: <https://doi.org/10.22841/kefdoi.2024.17.1.001>
- Park, Y. J. (2018). Modern Korean Economy: 1948-2008. *The Academy of Korean Studies*, 50-153.
- Pornchokchai, S. (2002). Bangkok Housing Market's Booms and Busts, What Do We Learn? *Pacific Rim Real Estate Society*, 1-9.
- Pornchokchai, S. (2003). Lessons learnt from housing speculation in Bangkok. *Pacific Rim Real Estate Society The Ninth Conference*. Brisbane.
- Rose, A. K., & Spiegel, M. M. (2011). Dollar illiquidity and central bank swap arrangements during the global financial crisis. *NBER Working Paper Series*, 1-29.

- Rose, A. K., & Spiegel, M. M. (2012). Dollar illiquidity and central bank swap arrangements during the global financial crisis. *Journal of International Economics*, 88(2), 326-340.
- Seo, Y. K. (2024). *What Has the Pandemic Crisis Left Us with?: Experiences and Challenges of Monetary Policy (in Korean)*. Retrieved from Korea Open Access Journals: <http://doi.org/10.22841/kefdoi.2024.17.3.001>
- Sharma, S. D. (2003). The Asian Financial Crisis : Crisis, Reform and Recovery. *Manchester University Press*, 180-187, 209-238.
- Shi, X., & Brasseur, G. P. (2020). The response in air quality to the reduction of Chinese economic activities during the COVID-19 outbreak. *Geophysical Research Letters*, 47(11). Retrieved from <https://doi.org/10.1029/2020GL088070>
- Shin, I. S. (2021). *Lender of Last Resort by the Article 80 of the 『Bank of Korea Act』 (in Korean)*. Retrieved from Korea Open Access Journals: <https://doi.org/10.22841/kefdoi.2021.14.2.002>
- Statistics Korea. (n.d.a). *Consumer price index*. Retrieved from <https://www.index.go.kr/unity/potal/indicator/IndexInfo.do?cdNo=2&clasCd=10&idxCd=F0149>
- Statistics Korea. (n.d.b). *Economic growth rate*. Retrieved from <https://www.index.go.kr/unity/potal/indicator/IndexInfo.do?cdNo=2&clasCd=2&idxCd=4201>
- Statistics Korea. (n.d.c). *Export and Import Trends*. Retrieved from https://www.index.go.kr/unity/potal/main/EachDtIPageDetail.do?idx_cd=1066
- Statistics Korea. (n.d.d). *Foreign debt and assets*. Retrieved from https://www.index.go.kr/unity/potal/main/EachDtIPageDetail.do?idx_cd=1069
- Statistics Korea. (n.d.e). *Foreign debt to GDP ratio*. Retrieved from <https://www.index.go.kr/unity/potal/indicator/IndexInfo.do?cdNo=2&clasCd=2&idxCd=4210>
- Statistics Korea. (n.d.f). *Foreign Exchange Reserves*. Retrieved from https://www.index.go.kr/unity/potal/main/EachDtIPageDetail.do?idx_cd=1067

- Statistics Korea. (n.d.g). *Household savings rate*. Retrieved from <https://www.index.go.kr/unity/potal/indicator/IndexInfo.do?cdNo=2&clasCd=10&idxCd=F0151>
- Statistics Korea. (n.d.h). *Private final consumption expenditure*. Retrieved from KOSIS: https://kosis.kr/statHtml/statHtml.do?orgId=101&tblId=DT_2OEE0003&conn_path=I2
- Statistics Korea. (n.d.i). *Unemployment rate (OECD data)*. Retrieved from KOSIS: https://kosis.kr/statHtml/statHtml.do?orgId=101&tblId=DT_2WEO017&conn_path=I2
- Statistics Korea. (n.d.j). *Unemployment Rate Trends*. Retrieved from https://www.index.go.kr/unity/potal/main/EachDtIPageDetail.do?idx_cd=1063
- Sussangkarn, C. (2011). Chiang Mai Initiative Multilateralization: Origin, Development, and Outlook. *Asian Economic Policy Review*, 6(2), 203–213.
- Taylor, J. B. (1993). Discretion versus policy rules in practice. *Carnegie-Rochester conference series on public policy*. Vol. 39, 199-203.
- Tejerina, L., Lee, H. J., & Kang, D. H. (2024). The Republic of Korea's Digital Tools for Fighting COVID-19. 20–43.
- Tsutsumi, M., Jones, R. S., & Cargill, T. F. (2010). The Korean financial system: Overcoming the global financial crisis and addressing remaining problems. 5–14.
- World Health Organization. (2020a). Novel Coronavirus (2019-nCoV) SITUATION REPORT - 4: January 24 2020. *Coronavirus disease (COVID-19) Epidemiological Updates and Monthly Operational Updates archive*.
- World Health Organization. (2020b). *WHO Director-General's opening remarks at the media briefing on COVID-19 - 11 March 2020*.
- World Health Organization. (2021). WHO-convened global study of origins of SARS-CoV-2: China Part. 6–10.
- Yahoo Finance. (n.d.). *USD/KRW (KRW=X)*. Retrieved from <https://finance.yahoo.com/quote/KRW%3DX/history/>
- Yoon, D. R. (2011). The Korean economic adjustment to the world financial crisis. *Asian Economic Papers*, 10(1), 106–113.

Yun, Y. J. (2021). International spillover of central bank swap lines-Evidence from the COVID-19 experience of Korea. *Finance Research Letters*, 43, 1–6.

Zlobins, A. (2021). Macroeconomic effects of the ECB's forward guidance. *Empirical Economics*, 61, 2587-2611.