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NEPAL RASTRA BANK

An Anatomy of Nepal's Credit Boom1990-2025

Birendra Bahadur Budha[a]

ABSTRACT
This paper investigates several questions about credit booms in Nepal: When do credit booms occur? What are the macroeconomic dynamics around the credit booms? What are the policy responses implemented to deal with credit booms? Using data for the period 1990-2025, I find that credit booms occur three times: 1994-1996, 2008- 2010, and 2020-2022. These booms are associated with financial sector reforms and loose monetary conditions for a longer period. Credit booms coincide with stock market booms and end up in external sector crises, with high current account deficits and low reserve adequacy. All three booms are bad ones, with subpar macroeconomic performance. During booms, credit reallocation shifts towards construction, consumable loans, and finance, which suffer most following the booms. Nepal Rastra bank responded with monetary and macroprudential measures to address the booms and external sector crisis during and after the booms.

KEYWORDS
credit booms, Nepal, macroeconomic dynamics

JEL CLASSIFICATION
E32, E51, E58, G01

1 Introduction

Nepal has experienced frequent episodes of rapid credit expansion since 1990, necessitating a rigorous assessment of its implications for financial and macroeconomic stability. Credit growth enhances access to finance, supporting investment and economic growth, as argued in Levine et al. (2000). On the other hand, rapid credit expansions are often followed by recessions and financial crises (Schularick and Taylor, 2012; Jordà et al., 2016). The episodes of rapid credit growth, often categorized as credit booms, may create financial stress and vulnerabilities. After the global financial crisis 2007, a large body of literature has explored the credit booms, including their features, macrofinancial developments around the booms, and policy responses to deal with booms (e.g. Mendoza and Terrones, 2008, 2012; Schularick and Taylor, 2012; Arena et al., 2015; Dell'Ariccia et al., 2016; Dell'Ariccia et al., 2020). But, less is known about the occurrence of credit booms and their features in the Nepali context.

This paper investigates the incidence of credit booms in Nepal. Further, I explore its features, macrofinancial developments around the credit booms, and policy responses to address the credit booms. Specifically, I answer the following questions: Are there credit booms in Nepal? What are the potential causes behind the booms? Do asset price booms coincide with the credit booms? Is there a link between credit booms and the external

CONTACT Birendra Bahadur Budha bcbirendra@nrb.org.np [a]Acting Director, Nepal Rastra Bank

sector crises? Are the identified booms bad ones? Is there credit reallocation across sectors during the booms? What are the macroeconomic dynamics around the credit booms? What are the policy responses taken to address the credit booms? I use the data for the period 1990-2025 to identify the credit booms and answer these questions.

During the period 1990-2025, I identify three credit booms: 1994-1996, 2008-2010, and 2020- 2022. The potential causes of the booms include financial sector reforms and loose monetary conditions for a longer period. All three identified booms are bad ones, characterized by subpar macroeconomic performance. During the booms, credit reallocation shifted towards construction, finance, and consumable loans. And, during the downturn, these sectors suffer the most. Stock market booms also coincide with the credit booms, and the last two credit booms ended up in external sector crises with high current account deficits and low reserve adequecy. In the last two booms, excessive leverage built up in banks and financial institutions (BFIs) during the credit booms, and deleveraging took place after the bust, with a long time to return to pre-boom levels. Tight monetary policy was adopted to deal with all three credit booms despite variation in the timing of responses during the boom episodes. In the last two booms, several macroprudential measures and FX restriction measures, including import restrictions, were implemented to address externals sector pressure, following the credit booms.

This paper mainly contributes to the literature on credit booms, including their features and policy measures. Some major works in the international context include Dell'Ariccia et al. (2016), Mendoza and Terrones (2008), Arena et al. (2015), Dell'Ariccia et al. (2020), Műller and Verner (2024), Elekdag and Wu (2011), Hansen and Sulla (2013), Abiad et al. (2013), Sufi and Taylor (2022), and Schularick and Taylor (2012). In the Nepali context, Bhatta (2018) estimates the business and financial cycles for the period 1991-2017. Later, Bhatta (2025) further demonstrates the synchronization between Nepal's cycles and India's. International Monetary Fund (2024) identifies a post-pandemic credit boom, using a sample after 2010, which is argued to be largely supply-driven. The report further argues that the boom is facilitated by an unprecedented broad-based relaxation of financial regulations, and credit was channeled towards households and non-tradable sector firms during the boom, followed by deleveraging and an economic slowdown in the aftermath. So far, to my knowledge, no prior studies have examined credit boom-bust cycle over a longer time periods, including macroeconomic dynamics and policy responses taken to credit booms. I fill this gap in the literature on the credit booms in Nepal.

The rest of the paper is outlined as follows. Section 2 presents the data and descriptive statistics. Section 3 presents the identification of credit booms. Section 4 examines whether asset price booms coincide with credit booms, and Section 5 discusses whether credit booms end up in external crises. Section 6 addresses whether the identified booms are bad ones. The credit allocation during credit boom-busts is presented in Section 7, and the leverage buildup and deleveraging are discussed in Section 8. Section 9 presents the macrofinancial developments around the booms and policy measures taken to address credit booms. Finally, Section 10 concludes.

2 Data and descriptive statistics

I use the annual, monthly, and daily datasets from the Nepal Rastra Bank and the National Statistical Office covering the period 1990-2025. I exclude the period before 1990 for the two facts. First, Nepal entered into the democratic system for the second time in 1990 and gradually liberalized the economy, including the financial sector reform. As a result, 1990 is usually considered a year of structural break. Second, during the period before 1990, the banking system, including banking credit and interest rates, was highly regulated, such as the fixing of interest rates by Nepal Rastra Bank, directed lending, and credit ceiling to commercial banks. I employ several relevant variables in the analysis, including bank credit, bank assets, deposits, GDP growth, stock prices, current account, the balance of payments, foreign exchange reserves, and imports.

Table 1 summarizes the key variables employed in the analysis. For instance, the average GDP growth is 4.40 percent with a standard deviation of 2.16 for the period 1990-2025. The credit-to-GDP ratio grew by 5.56 percent on average, with a maximum growth of 26.21 percent. The maximum current account deficit is 12.53 percent of GDP, and the surplus is 6.70 percent of GDP. At maximum, the borrowings by banks and financial institutions from the NRB was 7.58 percent of total outstanding loans.

Figure 1 shows the growth of private sector credit in nominal terms (solid orange line) and real terms (dashed blue line). I use the consumer price index to deflate nominal credit. During our sample period 1990-2025, there are three episodes of rapid credit growth: 1994- 1996, 2007-2010, and 2021-2022. On average, the credit grew by 18.7 percent in nominal terms and 10.5 percent in real terms. Real credit growth was negative in 2023, following rapid growth in 2021 and 2022. To explore this further, I examine the incidence of credit booms in the next section.

3 Identifying credit booms

To identify the credit boom, I follow Mendoza and Terrones (2008) and Dell'Ariccia et al. (2016). A credit boom is an episode in which there are extraordinary positive deviations between bank credit and economic activity (Dell'Ariccia et al., 2016), or the credit to the private sector by banks grows more than a typical business cycle expansion (Mendoza and Terrones, 2012). To operationalize this definition, Dell'Ariccia et al. (2016) consider an episode as a credit boom if one of the following conditions is satisfied: "(1) the deviation from trend of the credit-to-GDP ratio is greater than 1.5 times its standard deviation, and its annual growth rate exceeds 10 percent; or (2) the annual growth rate of the credit-to-GDP ratio exceeds 20 percent." Instead of the credit-to-GDP ratio, Mendoza and Terrones (2012) uses the log of real credit per capita, l_t, and defines a period as a credit boom for which $l_t \geq \phi\sigma(l)$ holds, where $\sigma(l)$ is the standard deviation of the cyclical component, and ϕ is a boom threshold factor. The value of ϕ is set to 1.65 in the baseline and 1.5 in the sensitivity analysis. I employ these three criteria to identify credit boom episodes in Nepal. To calculate the long-run trend, I use the Hodrick-Prescott (HP) filter with a smoothing parameter set at 100 for our annual data.

Table 1: Summary statistics of the variables

Variables	Observations	Mean	Std.	Min.	Max.
Annual					
GDP growth	36	4.40	2.16	-2.37	8.98
Real GDP (log)	36	3.13	0.19	2.80	3.45
Credit-to-GDP ratio (%)	36	45.38	26.76	11.15	95.03
Real credit per capita (Rs. in thousands)	36	63.33	58.69	66.86	182.05
Real credit growth (%)	36	10.52	7.74	-2.93	32.01
Nominal credit growth (%)	36	18.69	8.64	4.58	42.11
Credit-to-GDP ratio growth (%)	36	5.56	7.93	-12.92	29.21
Current account (% of GDP)	36	-1.17	5.05	-12.53	6.70
Balance of payments (% of GDP)	36	2.83	3.13	-5.07	9.74
Reserve adequacy (in months of goods and services)	36	9.22	2.20	5.42	15.37
Bank assets (% of GDP)	36	77.86	33.98	25.81	142.13
Broad money (% GDP)	36	65.19	29.07	30.51	128.46
Monthly					
NEPSE	266	1131.70	788.67	201.48	3160.09
Credit growth (%)	266	18.31	8.48	3.37	65.40
Deposit growth (%)	266	17.04	5.22	6.98	30.64
Borrowings from NRB (% of outstanding loans)	266	0.87	1.47	0.00	7.58
FX reserve growth (%)	242	9.93	2.52	6.57	18.72
Imports growth (%)	242	11.77	20.65	-40.76	82.40
Bank rate	429	8.21	2.74	5.00	13.00
CRR	266	4.91	0.97	3.00	6.00
91 day T-bills rate	429	4.62	3.25	0.00	12.88
Interbank rate	314	3.40	2.46	0.02	12.83
Lending rate	156	10.72	1.48	7.66	13.03
Daily					
NEPSE	4878	729.43	1055.89	195.14	3199.03

This table shows the summary statistics of the variables used in the study.

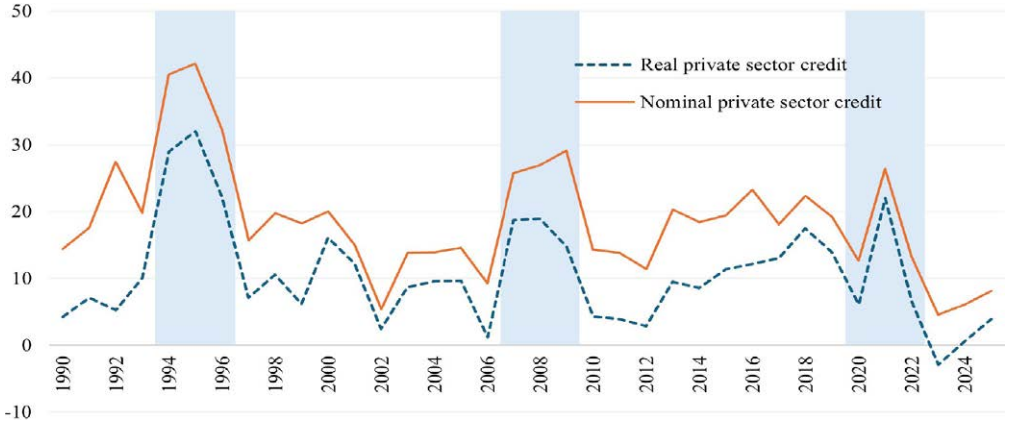

Figure 1: Growth of nominal and real private sector credit

Note: This figure shows the growth of the nominal (orange solid line) and real (blue dotted line) private sector credit growth, deflated by the CPI, for the period 1990-2025.

Figure 2 shows the growth of the credit-to-GDP ratio for the period 1990-2025. The credit-to-GDP ratio grew by 20.9 percent in 1994, 29.2 percent in 1995, and 16.4 percent in1996, confirming the credit boom based on the threshold of 20 percent annual growth in the credit-to-GDP ratio. Other episodes of higher growth in the credit-to-GDP ratio include the period 2007-2008, 2016, and 2021-2022. The credit-to-GDP ratio increased by 13 percent in 2007 and by 13.2 percent in 2008. In 2016, it increased by 14.5 percent, which results mainly from a sharp contraction in GDP because of the 2015 earthquake and trade supply chain disruptions, especially petroleum products, due to the disruptions at the Nepal-India border. In 2016, GDP increased by only 0.4 percent compared to 4 percent in 2015 and 6 percent in 2014. Likewise, the credit-to-GDP ratio increased by 11.8 percent in 2020 and by 12.9 percent in 2021. Based on credit-to-GDP growth, the credit boom occurred during 1994-1996, and two other potential episodes of credit booms are 2007-2008 and 2020-2021.

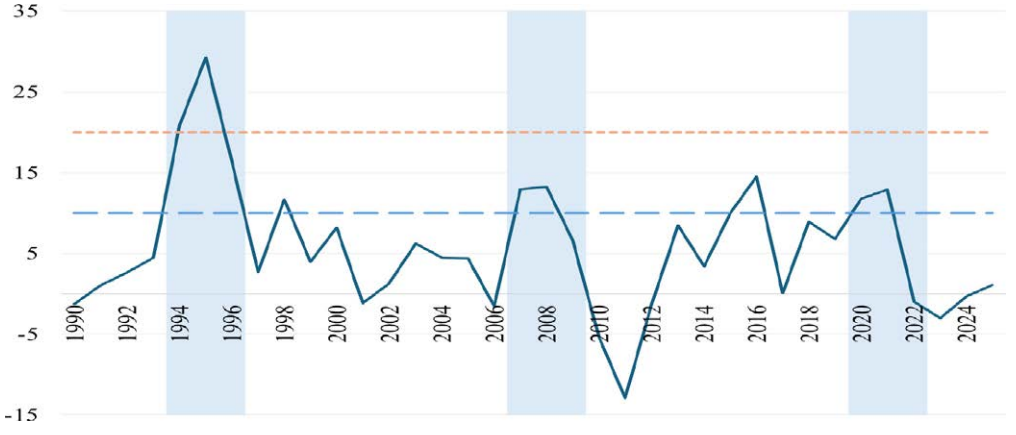

Figure 2: Growth of credit-to-GDP ratio

Note: This figure shows annual growth of credit-to-GDP ratio for 1990-2025. The solid blue line shows the credit-to-GDP growth, dashed orange line represents 20 percent threshold, and dashed blue line 10 percent growth threshold.

Figures 3 and 4 show the cyclical component (the deviation from the trend) of credit- to-GDP ratio, and the log of real credit per capita, respectively. In Figure 3, the cyclical component of credit-to-GDP exceeds the threshold of 1.5 times its standard deviation during 2009-2010 and 2021-2022, indicating the occurrence of a credit boom. In Figure 4, the cyclical component of real credit per capita exceeds the threshold of 1.65 times the standard deviation during 1996 and 2010, indicating the occurrence of a credit boom. In 2021, the cyclical component is greater than one standard deviation and almost equal to the credit boom threshold.

Based on these results, the credit boom occurred three times during the period 1990-2025: (i) 1994-1996, (ii) 2008-2010, and (iii) 2020-2022. These findings are also consistent with the previous study by Dell'Ariccia et al. (2016), which shows the credit boom during 1994-1995 and 2007-2008 for the period 1990-2008. Likewise, International Monetary Fund (2024) finds the post-pandemic credit booms around 2020-2022.

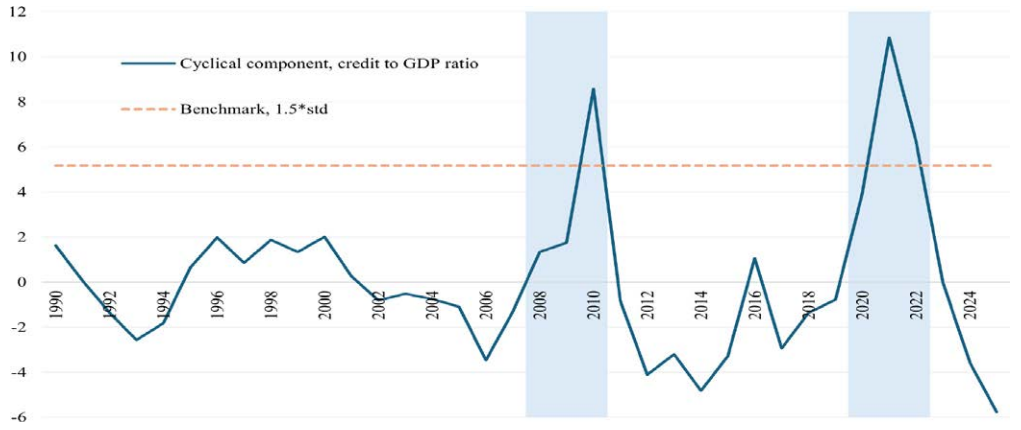

Figure 3: Cyclical component of credit-to-GDP ratio

Note: This figure shows the cyclical component of the credit-to-GDP ratio (solid blue line) for 1990-2025. The dashed orange line represents 1.5 times its standard deviation.

After identifying these boom episodes, it is important to understand the reasons behind the booms. Previous studies argue for several causes of the credit booms, including financial reform, capital inflows surges, and buoyant economic growth (e.g. Mendoza and Terrones, 2008; Claessens and Kose, 2013; Dell'Ariccia et al., 2016). The first is financial liberalization and innovation, which may lead to excessive increases in leverage and risk-taking. About one-third of booms follow or coincide with financial liberalization (Dell'Ariccia et al., 2016). Capital inflow surges, especially after capital account liberalization, also increases the availability of funds to banks, resulting in growth in credit aggregates. Another factor is accommodative monetary policy, especially used for extended periods, which reduces the cost of borrowing, increases asset price valuations, and increases risk-taking (Claessens and Kose, 2013). Credit booms can also be triggered by positive productivity shocks. Booms began during or after periods of buoyant economic growth. Dell'Ariccia et al. (2016) shows that lagged GDP growth is positively associated with the probability of a credit boom. Finally, fixed exchange rate regimes and low quality banking supervision are also associated with credit booms. If supervision is weak, the supervisor fails to deal with early signs of credit booms (Dell'Ariccia et al., 2016). Under the peg, monetary policy is constrained in effectively dealing with a credit boom.

In our sample period, the credit booms mainly occurs because of the financial sector reforms and loose monetary conditions. I discussed separately for the three identified booms.

- *1994-1996 boom*. Major reasons behind the credit boom include the economic liberalization program, including financial sector reforms, during 1991-1994, and loose monetary conditions before the boom. After the democracy and election in 1991, the Nepali government launched an ambitious economic (structural) reform program along with a macroeconomic stabilization program to transform Nepal into a modern market-oriented economy. The major reform areas include the tax system, trade and payments system (e.g., full current account convertibility), indus-

trial and foreign investment policy, public enterprises, and the financial sector. Major initiatives in the financial system include the new Finance Companies Act, the restructuring of state-owned banks, the new Securities and Exchange Act, and the establishment of Nepal Stock Exchange Limited. As a result, the number of banks and financial institutions increased significantly from 7 in 1991 to 40 in 1994 and 55 in 1996, supporting significant financial deepening and credit expansion. In July 1991, there were only 5 commercial banks and 2 development banks. In July 1996, there were 11 commercial banks, 3 development banks, 37 finance companies, and 4 microfinance financial institutions. Likewise, 91-day treasury bill rate decreased from 10.4 percent in July 1993 to 6.20 in July 1994, then increased to 8.5 percent in July 1995, and 12.8 percent in July 1996 (Figure 13). Thus, loose monetary conditions during 1993-1995 also contributed to the boom.

- *2008-2010 boom*. The second comprehensive financial sector reform implemented since 2002, and loose monetary policy played a role in this credit boom. The major components of the reforms include the restructuring and reengineering of the Nepal Rastra Bank, commercial banking reform (in two state-owned banks), and capacity building in the financial sector (e.g. improving legal framework, credit information, financial news reporting, training to bank staff). Some initiatives include the new NRB Act 2002, the Bank and Financial Institution Act 2006, and the new licensing of banks and financial institutions. As a result, the number of banks and financial institutions increased from 100 in July 2004 to 173 in July 2008 and 203 in July 2010. In 2004, there were 17 commercial banks, 14 development banks, 58 finance companies, and 11 microfinance financial institutions. In 2010, there were 27 commercial banks, 79 development banks, 79 finance companies, and 18 microfinance financial institutions in 2010. The number of commercial banks branches also increased from 375 in July 2004 to 990 in July 2010. Loose monetary conditions during August 2004 – November 2008, along with surges in remittance growth supporting banking system liquidity build-up, also contributed to rapid credit growth and the credit boom (Figure 13).
- *2020-2022 boom*. In response to COVID-19, loose monetary and credit policies, including regulatory relaxations, were adopted during August 2020 – March 2022 to support the economic recovery by helping businesses and households. These loose policies over a longer period assisted in the leverage build-up and thus contributed to the credit boom. For instance, from July 2020 to February 2021, the interbank rate was below 1 percent (Figure 13), and the central bank expanded a massive refinance program to thousands of businesses under the COVID-19 affected sectors. The refinancing by NRB was Rs. 22.4 billion in July 2019, which increased to Rs. 74.86 billion in July 2020, and Rs. 122.70 billion in July 2021. It reached a maximum of Rs. 158.38 billion in February 2022, and then declined to Rs. 111.96 billion in July 2022, Rs. 1.5 billion in July 2023, and completely becomes zero after February 2024. Likewise, the concessional loan, which is interest-subsidized by the Government,

increased from Rs. 32.82 billion in July 2019 to Rs. 59.56 billion in July 2020, Rs. 161.44 billion in July 2021, Rs. 213.88 billion in July 2022, Rs. 197.06 billion in July 2023, and Rs. 126.82 billion in July 2024. The share of refinancing and concessional loans in total private sector credit was 1.90 percent in July 2019, which increased to 4.11 percent in 2020, 6.87 percent in July 2021, 7.99 percent in February 2022, 6.96 percent in July 2022, 4.05 percent in July 2023, and 2.4 percent in July 2024.

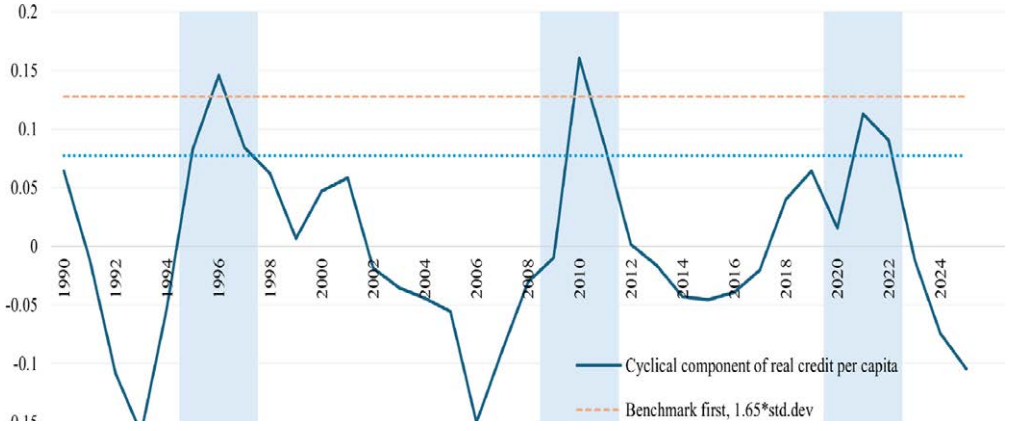

Figure 4: Cyclical component of credit-to-GDP ratio

Note: This figure shows the cyclical component of real credit per capita (solid blue line) for 1990- 2025. The orange dashed line represents 1.65 times its standard deviation, and the blue dashed line represents 1 standard deviation.

4 Asset prices booms coincide with credit booms

Credit booms are often associated with asset price boom-bust cycles. For instance, Mendoza and Terrones (2012) shows that house and equity prices rise during the upswing, and decline during the downswing. Equity prices rise to 25-30 percent at the peak of credit booms, and housing prices to 10-15 percent. During the downswing of credit booms, equity prices collapse. Theories show the various mechanisms through which increased bank lending to financially constrained households raises asset prices, which include leverage constraints, intermediary frictions or balance sheets, and reckless lending through lax screening of naive investors (Hansman et al., 2018). Thus, it is important to examine the pattern of stock prices during the credit boom episodes.

A stock market bubble is a period of a stock price boom followed by a crash.[1] For an empirical intuitive framework, Goetzmann et al. (2026) argues that a doubling of stock prices over a three-year periods generally qualifies as a stock market boom, and a decline in prices by half in the following year qualifies as a crash. One can choose different thresholds or compounding intervals in this empirical definition. I follow this simple framework to examine whether equity price boom-bust cycles occur around the identified credit booms.

1 Theoretically, Goetzmann et al. (2026) defines an asset bubble as "a large, temporary deviation from fundamental value" which requires a valuation model for a testing.

Nepal's equity price boom-bust cycles occur along with the credit booms. I use a monthly NEPSE index available since 2002 to see the stock price movements and test the stock price boom-bust cycle. Figure 5 shows the NEPSE index for the period August 2004 – September 2025. In August 2006, the NEPSE was 379.24, which increased to a peak of 1086.14 in August 2008. Over the two-years period, stock prices nearly tripled, showing a stock price boom. NEPSE declined to 695.06 in August 2009, 447.59 in August 2010, and 378.92 in March 2011. The stock prices declined by 50.34 percent after 15 months of the peak. The index completely reversed back to the beginning of the boom period after 31 months of the stock prices peak. In the third credit boom, the NEPSE increased from 1224.04 in August 2019 to 3160.09 in August 2021, indicating a stock price boom. After the peak, it declined to 2041.06 in August 2022, suggesting a stock market crash. Thus, the stock market boom-busts seem to coincide with the credit boom-bust cycles in both periods. It shows the clear pattern of rising stock prices during the credit expansion, and declining prices during the downswing of the credit boom (see Annex 14).

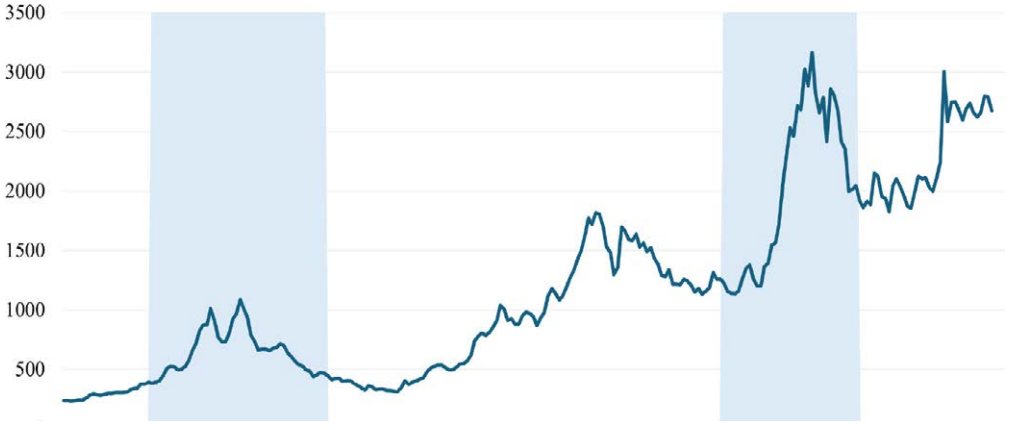

Figure 5: Evolution of NEPSE index

Note: This figure shows the evolution of NEPSE (solid blue line), Nepal's stock prices. The vertical shaded area shows the period of rise and crash in stock prices.

5 Credit booms end up in an external sector crisis

Credit booms often end up in a currency crisis. Studies show that the current account worsens and declines to a deficit during the expansion phase, and improves to a surplus as the boom unwinds. Mendoza and Terrones (2008) shows that the current account declines to a deficit of about 2.5 percent of GDP during the expanding phase, and increases to a surplus of 1.5 percent of GDP in the declining phase of a credit boom. Likewise, Dell'Ariccia et al. (2016) finds that current account balance deteriorates by more than 1 percentage point of GDP per year on average during a boom. The current account ratio deteriorates at the peak of the boom and after one year (Arena et al., 2015). With this empirical evidence, it is interesting to see how the current account balance behaves during the identified credit booms in Nepal.

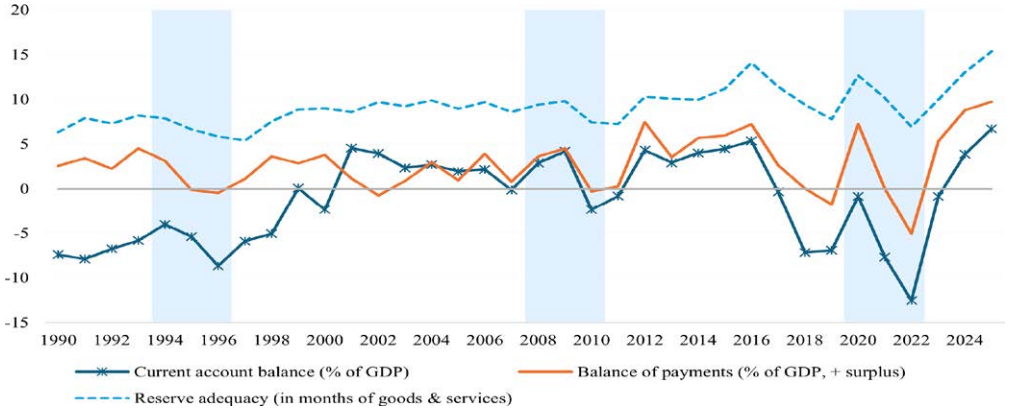

Figure 6: Current accounts, balance of payments, and reserve adequacy

Note: This figure shows the current accounts (% of GDP), the balance of payments (% of GDP, + surplus/-deficit), and reserve adequacy (in months of goods and services). The vertical light blue shaded area represents the period of credit booms.

Credit booms are associated with deterioration in current accounts and the balance of payments, rising external sector pressure, and a decline in reserve adequacy. Figure 6 displays the evolution of the current account balance (% of GDP), the balance of payments (% of GDP, + surplus/-deficit), and the reserve adequacy (in months of goods and services). During the 1994-1996 boom, the current account deficit was 4 percent of GDP in 1994, which increased to 8.7 percent in 1996, and then gradually improved. Likewise, the balance of payments, which was in surplus in 3.2 percent of GDP in 1994, went into deficit by 0.4 percent of GDP. Accordingly, the reserve adequacy declined from 7.9 months in 1994 to 5.4 months in 1996, and then gradually improved. During the credit boom 2008-2010, the current account went into deficit of 2.4 percent of GDP, and the balance of payments deficit to 0.3 percent of GDP in 2010. Accordingly, the reserve adequacy declined from 9.4 months to 7.4 months in 2010, indicating the rising external sector pressure. In the last boom 2020-2022, the current account deficit increased from 0.9 percent of GDP in 2020 to 12.5 percent of GDP in 2022. During the same period, the reserve adequacy declined from 12.7 months to 7.3 months. These facts show that all three credit booms end up in rising current account and balance of payments deficits, and low reserve adequacy, implying that the credit booms created significant external sector pressure. Given the peg and along with the rising external sector pressure due to BOP deficits and low foreign exchange reserves, NRB implemented several policy measures, including foreign exchange restrictions, import restrictions, monetary and macroprudential measures, to maintain the peg during these episodes (see Section 9).

6 Are there bad credit booms?

Some booms end in a financial crises or subpar economic performance, which are classified as bad booms. Dell'Ariccia et al. (2016) classifies a boom as bad if it is "(1) followed by a banking crisis within three years of its end date, or (2) associated with a recession or inferior (below-trend) medium-term growth performance." About one in three booms end up in

a banking crisis within three-year periods, and three out of five booms have below- trend growth following the credit boom for six years (Dell'Ariccia et al., 2016). Thus, the interesting question in our context is: Are the identified booms in our sample bad or good ones?

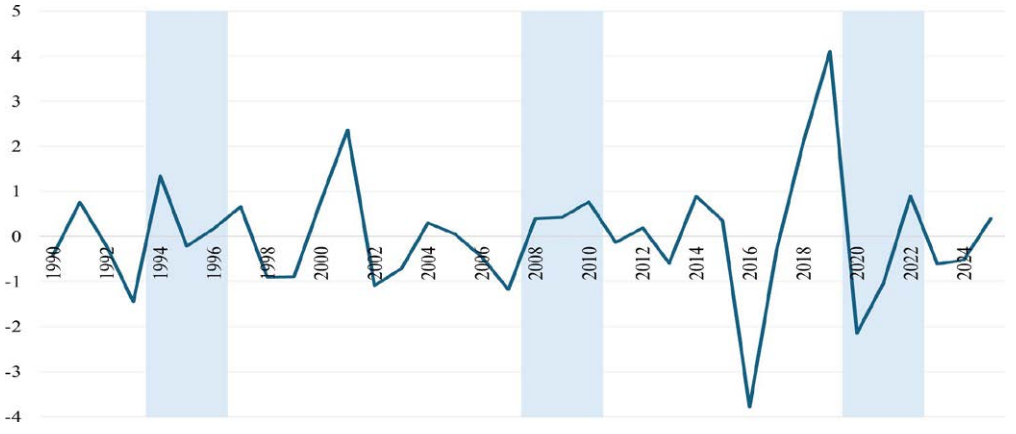

Figure 7: Output gap (in percent)

Note: This figure shows the output gap (in percent) computed using the HP filter with a smoothing parameter of 6.25. The vertical shaded area shows the period of credit booms.

To identify whether booms are bad, I compare the growth performance three years after the boom and the examine output gap computed using the HP filter.[2] Figure 7 shows the output gap computed using the HP filter. The shaded area is the period of credit booms. The output gap becomes negative for two of three years after the credit booms. This result shows that after the credit booms, the economy entered a recession. Compared to the long- term growth of 4.4 percent during 1990-2025, the average growth is lower in the three years after each credit boom: 4.2 percent during 1997-1999, 3.87 percent during 2011-2013, and 3.42 percent during 2023-2025. The negative output gap and below trend growth after the credit booms suggest that all three identified booms are bad booms, characterized by subpar macroeconomic performance.

7 Credit allocation during credit boom-busts

Next, it is important to understand credit allocation across sectors during the credit booms. Models of credit cycles predict that times of easy credit lead to disproportionate lending growth in non-tradable sectors, which may lead to slower economic growth through increased financial fragility (Műller and Verner, 2024). Accordingly, Műller and Verner (2024) shows that during credit booms, reallocation of credit occurs towards the non-tradable sectors, especially the construction and real estate industries, along with rapid growth in household credit. They argue two reasons for such systematic reallocation: (i) the firms in the non-tradable sector, which are relatively smaller and more reliant on real estate collateral, are more financially constrained and exposed to collateral feedbacks, and (ii)

[2] There is no evidence of banking crisis in Nepal based on the systematic banking crisis database by Laeven and Valencia (2020)

credit to the non-tradable sector is supported by demand feedbacks. The industries that benefit most during the booms and suffer most during busts include those industries that are less tradable, more-labor intensive, and more reliant on external finance (Dell'Ariccia et al., 2020).

The allocation of credit affects whether credit booms end badly or not. Műller and Verner (2024) shows that credit booms biased toward the non-tradable sector and households suffer from sharp growth reversals and lower real GDP growth relative to credit booms biased towards the tradable sector. Moreover, credit expansion to the non-tradable sector is associated with subsequent GDP growth slowdowns, and increased financial fragility and the risk of financial crisis explain such poor growth performance after the booms (Műller and Verner, 2024). Likewise, Dell'Ariccia et al. (2020) shows the construction sector growth during a boom raises the probability of a bad boom.

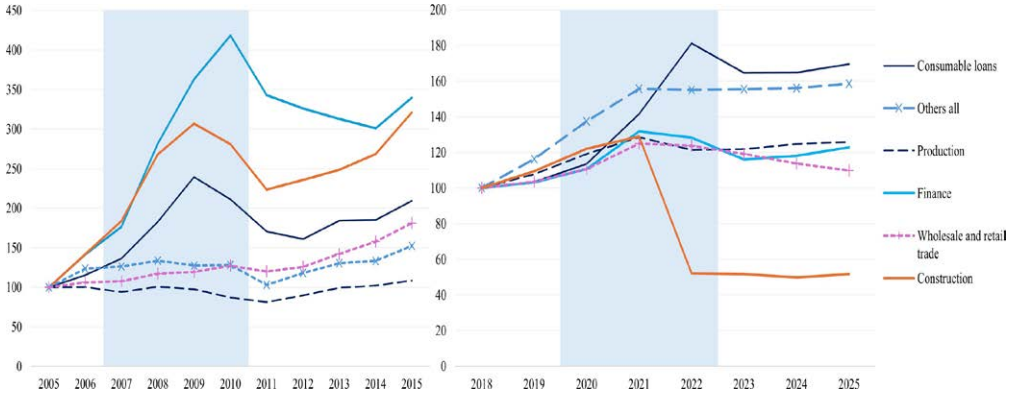

Figure 8: Sectoral credit allocation during credit booms

Note: This figure shows the ratio of sectoral credit-to-GDP for construction, finance, consumable loans, production, wholesale and retail trade, and other sectors around the credit booms. The values are indexed to 100 in 2005 for the boom 2008-2010 and in 2018 for the boom 2020-2022. Other sectors include agriculture, mines, metal productions, machinery & electrical tools & fitting, transportation, communications & public services, service industries, and local governments. Due to the changes in definition in 2022, consumable loans include others and consumable loans defined previously. The sectoral credit data includes only commercial banks for the boom 2008-2010, and all commercial banks, development banks, and finance companies for the credit boom 2020-2022.

I plot the sector allocation of credit during the last two credit booms for which data is available. Figure 8 shows the sectoral credit allocation during credit booms and busts. During the credit boom 2008-2010, there was a large increase in credits towards construction, finance, and consumable loans. During the downswing, these three sectors suffer the most relative to other sectors. The credit to wholesale and retail trade, production, and other sectors was mostly stagnant. During the credit boom 2020-2022, consumable loans, finance, and others gained most. During the downswing, construction lost sharply, followed by consumable loans. Finance and wholesale and retail trade also suffer during downswing, but production credit remains almost stagnant. These findings are consistent with the previous findings in the global context by Műller and Verner (2024) and Dell'Ariccia et al. (2020). Thus, construction, finance, and consumable loans benefit much during booms and suffer most after the booms. These sectoral gains and losses during

credit booms-busts are also consistent with our previous findings that our identified credit booms are bad booms, which are more likely to arise from the credit to non-tradable sectors (construction, real estate) and households.

8 Leverage build-up and deleveraging

Excessive leverage build-up and deleveraging may occur during credit boom-bust cycle. In the credit expansion phase, there may be loosening lending standards and excessive leverage of both lenders (banks and financial institutions) and borrowers. Credit booms may leave large sectors of the economy overleveraged, resulting in impaired financial intermediation after the boom (Dell'Ariccia et al., 2016). About one in three booms end up in a bust. Even without a full-blown crisis, the leverage build-ups during the boom adversely affect corporate and household behavior, resulting in below-trend growth (Dell'Ariccia et al., 2016). Increased leverage among households and firms makes them vulnerable to declines in asset prices, tight credit conditions, and fall in economic activity in the aftermath of the credit boom.

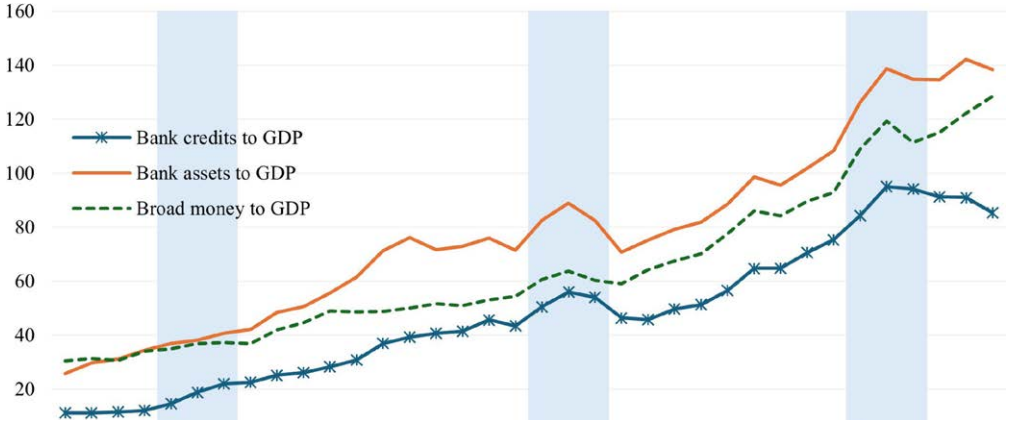

Figure 9: Bank credit, deposits, and broad money (in % of GDP)

Note: This figure shows the credit-to-GDP (solid blue line with cross sign), assets-to-GDP (solid orange line), and broad money to GDP (green dotted line). Bank credit and deposits include commercial banks, development banks, and finance companies since 2001. The light blue shaded area represents the credit booms.

Figure 9 shows the ratios of bank credit, bank deposits, and broad money-to-GDP. In the first credit boom 1994-1996, all three ratios increased smoothly during the boom and even its aftermath. In the second boom 2008-2010, there was a rapid rise in the credit-to-GDP and assets-to-GDP ratios during the upswing, which declined during the downswing and recovered to the level of the boom-peak only after 5 years. The credit-to-GDP ratio increased from 43.5 percent in 2007 to 56 percent in 2009, then declined to 45.8 percent in 2012 and reached boom-peak level in 2015. Likewise, the bank assets-to-GDP ratio increased from 71.4 percent in 2007 to a peak of 89 percent in 2009, then declined and again crossed the level of the boom-peak only after 2015. Both bank credit and assets recovered to the boom-peak level only after five years of the boom. In the last boom 2020-2022, the credit-to-GDP ratio increased from 75.3 percent in 2019 to 95 percent in 2022, and has

since been declining. The bank assets-to-GDP ratio increased from 108.3 percent in 2019 to 138.7 percent in 2022, which has declined and is still below the level of the boom-peak year. These facts suggest that, in the last two booms, there was excessive leverage build up during the credit boom. In the aftermath of the boom, deleveraging occurred, with declining bank credit-and assets-to-GDP ratio, indicating impaired financial intermediation.

9 Policy responses and macro-financial development

9.1 Macro-financial variables around credit booms

Figure 10 shows the stock market boom-crash cycles and policy responses around the credit boom. During the 2008-2010 credit boom and associated stock market boom-bust shown in the left plot of Figure 10, the NEPSE index reached its maximum of 1128.13 on 6 August 2008. On the first monetary policy tightening on 29 September 2008, the NEPSE was at 962.55, after which it crashed. After the second monetary tightening on 26 July 2009, NEPLSE crashed further and reached its pre-boom level. In the credit boom 2020-2022 and associated stock market boom, shown in the right plot of Figure 10, the NEPSE reached its peak of 3178.91 on 12 August 2021, and the first monetary policy tightening occurred in the next market opening day 15 August 2021. After the tightening, the NEPSE began to decline and crashed, following the second monetary tightening on 17 February 2022. Both stock market booms ended in a bust and crashed after monetary tightening.

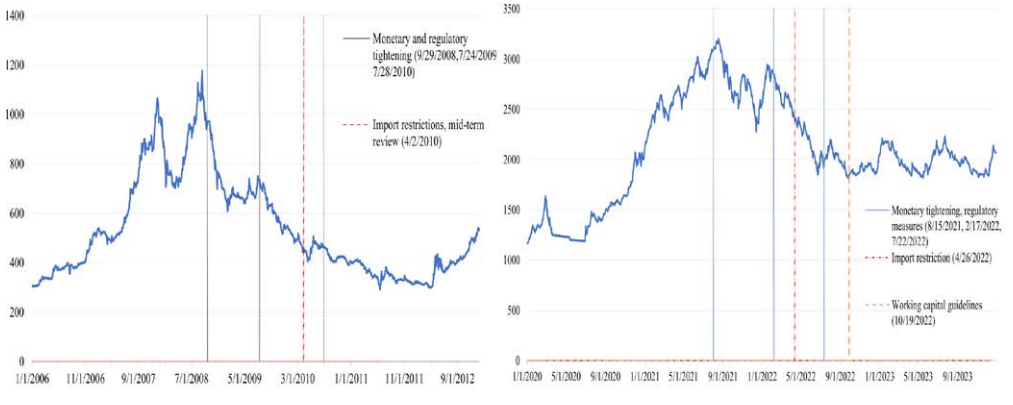

Figure 10: Evolution of NEPSE index and policy responses around the boom

Note: This figure shows the evolution of NEPSE, and the dating of policy responses around the credit booms.

Figure 11 shows the credit growth, deposit growth, and borrowings by the BFIs from NRB around the credit booms and the timing of policy responses. In the credit boom 2008-2010, credit growth continued despite the monetary policy tightening on 6 August 2008 and 26 July 2009. Credit growth exceeded 20 percent until May 2010, and it slowed after the decline in deposit growth, that began in August 2009. Even after the decline in deposit growth, credit expanded during December 2009-June 2010 which is partly supported by increased borrowings from the NRB. The borrowings from the NRB during this

period was more than 3 percent of total outstanding private sector loans. Credit collapsed after the tightening of monetary and macroprudential measures in July 2010. In the credit boom 2020-2022, shown in the right plot of Figure 11, monetary policy tightening began in August 2021, and credit started declining after September 2021, but deposits began declining after February 2021. The gap between credit growth and deposit growth was partly filled by the borrowings from the NRB, which started increasing from January 2021, and reached 7.6 percent of total outstanding loans of the BFIs in June 2022. The credit collapsed after the second monetary tightening and import restrictions in April 2022, and then crashed completely after the second monetary and regulatory tightening in July 2022. It further declined after the implementation of the Working Capital Guidelines in October 2022.

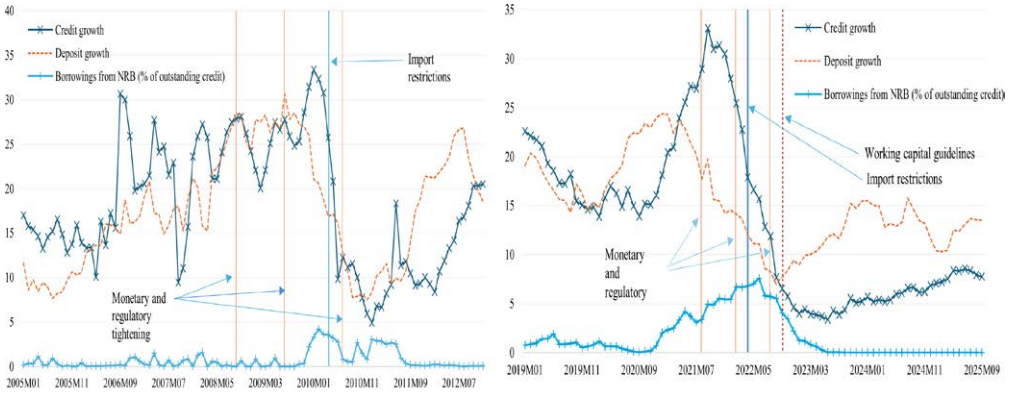

Figure 11: Credits, and deposits of the BFIs around credit booms and policy responses

Note: This figure shows the growth of deposits, credits, and borrowing of the BFIs from the NRB around the credit booms and the dating of policy responses.

Figure 12 shows the evolution of import growth and FX reserve growth around the credit boom and the timing of policy responses. During the boom 2008-2010, import growth started to decline after import restrictions, monetary tightening, and introduction of macroprudential measures in June 2010 (the left plot of Figure 12). The imports collapsed, and FX reserves began to increase after October 2010. During the credit boom 2020-2022, import growth began to decline after the first monetary tightening in August 2021, and reserve growth began to improve in February 2022. Despite signs of a slowdown in import growth and a declaration in FX reserve growth, import restrictions were imposed in April 2022, causing a collapse in imports in August 2022. And tight monetary and macroprudential measures adopted in July 2022 further reduced imports.

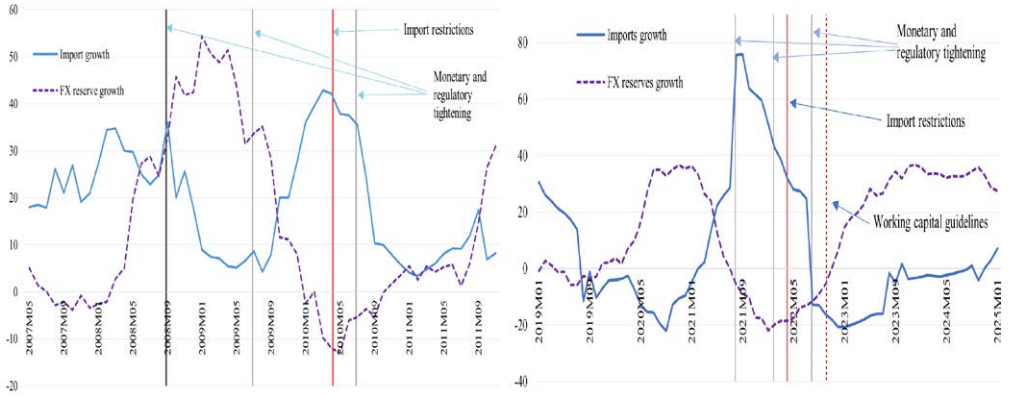

Figure 12: Imports and FX reserve growth during credit booms and policy responses

Note: This figure shows the growth of deposits, credits, and borrowing of the BFIs from the NRB around the credit booms and the timing of policy responses.

9.2 Policy measures around the boom

Several policy measures were implemented during and after the credit boom. I begin with a brief discussion of policy measures taken during each credit boom. At the end of the 1994-1996 boom, the current account deficit widened, and the balance of payments went into deficit, resulting in low level of reserve adequacy. To correct this widening deficit, NRB tightened the monetary policy in November 1995. As a result, 91-day Treasury bills increased from 8.5 percent in July 1995 to 12.8 percent in July 1996, and interbank rate increased from 6.61 percent to 9.31 percent over the same period. The policy was kept tight until April 1997, as reflected in by a higher 91-day T-bill rate of 9.77 percent until April 1997, and later declined to 5.62 percent in July 1997 (Figure 13). There seems to be timely monetary policy tightening, along with rapid credit growth and a worsening external sector position. This tighter policy action stabilized the external sector position.

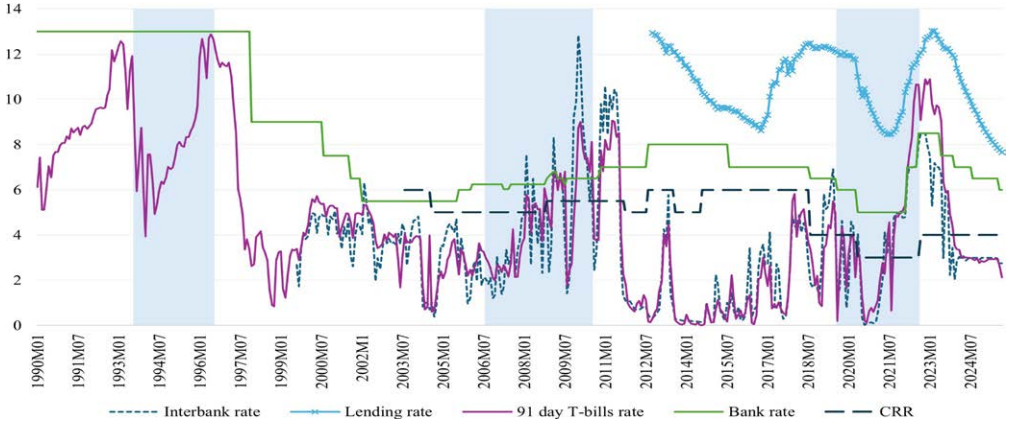

Figure 13: Evolution of interest rates Note: This figure shows .

During the boom 2008-2010, the NRB tightened monetary policy and introduced several macroprudenital measures to address the rapid credit growth and worsening external sector situation. A summary of the policy measures taken in response to the credit boom includes the following.

- Tight monetary policy was signaled by raising the cash reserve requirement from 5 percent to 5.5 percent and the bank rate from 6.25 percent to 6.5 percent on 29 September 2008.[3]
- Through the monetary policy on 24 July 2009, the single borrower limit was reduced from 50 percent to 25 percent of primary capital, which must be met initially by July 2010, and later the deadline was extended to January 2011. Likewise, the statutory liquidity ratio (SLR) was increased to 8 percent for commercial banks, 3 percent for development banks, and 2 percent for finance companies, which must be met by mid-July 2010. On 24 July 2009, the moratorium on bank licensing applications was introduced along with the review of the licensing policy. On 8 April 2010, it was lifted for microfinance banks and development banks (previously applied with a working area up to 3 districts) with the aim of expanding banking access in rural areas.[4]
- On 17 December 2009, the real estate exposure limit, loan-to-value ratio limit, and credit-to-deposit ratio limit were introduced.[5] First, banks are required to lower exposure to real estate loans (real estate and housing) to 25 (40) percent of total loans by mid-July 2010, which must be reduced to 15 (30) percent by mid-July 2011 and 10 (25) percent by mid-July 2012. Loans above the limit is penalized by provisioning on the basis of a risk weight of 150 percent. Second, banks are required to limit the loans up to 60 percent of the fair market value of the collateral or project. Third, the credit-to-deposit ratio must be limited to 95 percent by mid-July 2010, 85 percent by mid-July 2011, and 80 percent by mid-July 2012.
- On 2 April 2010, the mid-term review of monetary policy limits on certain foreign exchange transactions and gold imports. First, the foreign exchange for passport facility was limited to two times a year, and USD 500 for workers going for foreign employment. Second, only commercial banks are allowed to import gold, and the maximum limit for gold import was set at 10 KG per day. And 40 percent cash margin was introduced for the silver imports. Third, the import payments through draft/T.T. was reduced from USD 50000 to USD 25000. Fourth, the limit on silver imports was set at 100 KG per day on 13 April 2010. Fifth, 100 percent cash margin was set for the gold import on 6 June 2010. Fifth, the limit on gold import per day

3 Monetary Policy for 2008/09 was announced on 29 September 2008, which can be accessed from NRB Website.

4 Monetary Policy for 2009/10 was announced on 24 July 2009. Mid-term Review of Monetary Policy for 2009/10 was announced on 2 April 2010. Later, the NRB circular based on this mid-term review was issued on 8 April 2010.

5 These policy changes were announced through NRB circular issued on 17 December 2009, which can be accessed from the NRB Website under Bank and Financial Institutions Regulation Department.

was set 20 KG on 7 June 2010. Sixth, the limit on passport facility was set at USD 2000 on 21 June 2010. Sixth, the complete ban on gold import was placed on 3 September 2010, which was later relaxed to 15 KG per day on 27 December 2010.[6]

- On 28 July 2010, monetary policy was further tightened, and new macroprudential measures were introduced, which came to implementation on 10 August 2010.[7] First, the bank rate was increased from 6.5 percent to 7 percent. Second, the SLR was increased to 15 percent for commercial banks, 11 percent for development banks, 10 percent for finance companies, 6 percent for development banks and finance companies not allowed to collect current deposits, and 4 percent for microfinance financial institutions (allowed to collect deposits). Third, the loan against collateral of shares is limited to 60 percent of the average price of the last 180 days or 60 percent of the current market price, whichever is lower. Likewise, the promoters who have more than one percent share in the BFIs are not allowed to take loans of more than 50 percent of their promoter shares. And, the valuation of promoter shares is based on 50 percent of the average price of ordinary shares in the last 180 days or the last transaction price of the promoter share, whichever is lower. BFIs are allowed to extend up to 60 percent of this price.

In the credit boom 2020-2022, the NRB also introduced several policy measures during and after the boom. The policy measures were implemented after the rise in external sector pressure due to the increased current account deficit and declining FX reserves at the end of 2021. I briefly summarize these measures sequentially.

- On 13 August 2021, the reversal of unconventional policies adopted after the COVID-19 pandemic began. These measures were implemented on 24 August 2021.[8] The lower bound of the interest rate corridor was raised by increasing the deposit collection rate from 1 percent to 2 percent, and the repo rate (policy rate) from 3 percent to 3.5 percent. Likewise, the single obligor limit for the margin nature loan against the collateral of shares was set at a maximum of Rs. 40 million from a single institution and a maximum of Rs. 120 million from all banks and financial institutions.
- On 17 February 2022, monetary policy was further tightened. The bank rate was increased from 5 percent to 7 percent. The repo rate (policy rate) increased to 5.5. percent, deposit collection rate to 4 percent, and standing liquidity facility rate to 7 percent. Likewise, the credit-to-deposit ratio limit was set at 90 percent with a deadline of mid-July 2022. On 23 February 2022, the risk weight of 150 percent was set for the personal overdraft loans, personal hire purchase/

6 NRB circulars including these policy changes were issues on 13 April 2010, 7 June 2010, 21 June 2010, and 3 September 2010, and 27 December 2010. These circulars can be accessed from NRB Website under FX Management Department.

7 NRB Circular based on the monetary policy was announced on 10 August 2010, which can be accessed from NRB Website under Bank and Financial Institution Regulation Department.

8 NRB circular based on the monetary policy was announced on 24 August 2021, which can be accessed from NRB Website under Bank and Financial Institution Regulation Department.

personal auto loans, real estate loans for land acquisition and development, and lending against shares.[9] Likewise, the risk weight of 120 percent was set for trust receipt loans for trading firms. Loans to these sectors were categorized as high-risk claims.

- Tightening of foreign exchange measures and import restrictions began at the end of December 2021.[10] First, the foreign exchange for the passport facility was reduced to USD 1500 from USD 2500 on 21 December 2021. Second, 100 percent cash margin was required for the imports of goods under the categories of a total of 47 harmonic codes (such as items under footwear/headgear, stones/metals, animal and animal products, beauty products) on 9 February 2022. Third, on 6 March 2022, the limit for gold imports was reduced from 20 KG per day to 10 KG per day. Fourth, on 26 April 2022, import restriction was placed on certain goods such as junk foods, alcohol, cigarettes, diamonds, expensive mobile sets (price more than USD 600), cars, vans, motorcycles (above 250 CC), dolls, and cards.[11]
- On 22 July 2022, monetary policy was further tightened, and some tight macro-prudential measures were also implemented. These measures were implemented on 3 August 2022.[12] First, the bank rate increased to 8.5 percent, the policy rate to 7 percent, and the deposit collection rate to 5.5 percent. Second, the cash reserve ratio was increased from 3 percent to 4 percent. Third, the SLR was set at 12 percent for commercial banks, and 10 percent for development banks and finance companies. Fourth, for the loans with no specific purpose against the collateral of land and houses, such as overdraft loans, mortgage loans, property loans, and personal term loans, the loan-to-value ratio was set at a maximum of 30 percent inside Kathmandu valley and a maximum of 40 percent outside Kathmandu valley. Fifth, a limit for margin type loan against the collateral of shares from a single financial institution or all financial institutions was set at a maximum of Rs. 120 million per borrower. Sixth, most of the regulatory relaxations introduced during the COVID-19 pandemic were removed.
- The Working Capital Guideline was introduced on 23 August 2022. The guidelines introduced the provisions related to loans for working capital, such as the limits on working capital loans, renewal, collateral, monitoring, variance analysis, and loan utilization, among others. Later, the guideline was revised with further relaxation on 4 January 2023, 30 August 2023, and 17 March 2026.

9 NRB circular based on the mid-term review of monetary policy was issued on 23 February 2022, which can be accessed from NRB Website under Bank and Financial Institution Regulation Department.

10 NRB circulars related to FX measures were issued on 21 December 2021, 9 February 2022, 6 March 2022, and 26 April 2022, which can be accessed in NRB Website under foreign exchange Management Department

11 Passport facility was increased to USD 2500 on 28 July 2023, the gold import limit was increased to 20 KG on 27 September 2023, the provision of cash margin was removed on 19 January 2023, and import restrictions was removed 28 December 2022.

12 After the policy announcement, NRB circular was issued on 3 August 2022 which can be accessed from NRB Website under Bank and Financial Institution Regulation Department.

10 Conclusion

This paper identifies the credit booms in Nepal for the period 1990-2025, and explores macroeconomic dynamics and policy responses around the credit booms. I identify three credit booms: 1994-1996, 2008-2010, and 2020-2022. These booms occur following the financial sector reforms and loose monetary conditions for a longer period. The last two booms are associated with stock market boom-busts and leverage build-up in the banking system, followed by the deleveraging aftermath of the booms. These booms end up in an external sector crisis, with increased current account deficit and low foreign exchange reserve adequacy. Moreover, these booms are bad ones, with subpar macroeconomic performance after the booms. During the upswing, credit reallocation occurs towards the construction, finance, and consumebale loans, followed by the largest loss to these sectors during the downswing. Nepal Rastra Bank adopted several monetary and macroprudential measures in response to the credit booms to address excessive credit and a large current account deficit. However, there may be questions regarding the timing of the policy responses relative to credit growth and external sector pressures.

The findings of the paper have important policy implications. First, observing the rapid credit expansion, especially above the threshold of 10 percent growth in the credit- to-GDP ratio, is important because of the rising current account deficit and external sector pressure. Given the exchange rate peg, it is crucial to implement monetary and macroprudential policy measures in timely manner to address the credit booms and the external sector crisis. Second, the policy mix and timing of responses to address credit booms is crucial since the booms Nepal experienced became bad because of the exchange rate peg. Third, policy coordination among different authorities is equally important for the effectiveness of monetary and macroprudential measures.

Disclosure

I would like to thank participants for the comments provided during my presentation in NRB Executive Discussion Program on 16 January 2026. The views expressed by the authors do not represent the Nepal Rastra Bank. All remaining errors are our own.

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Annex 1

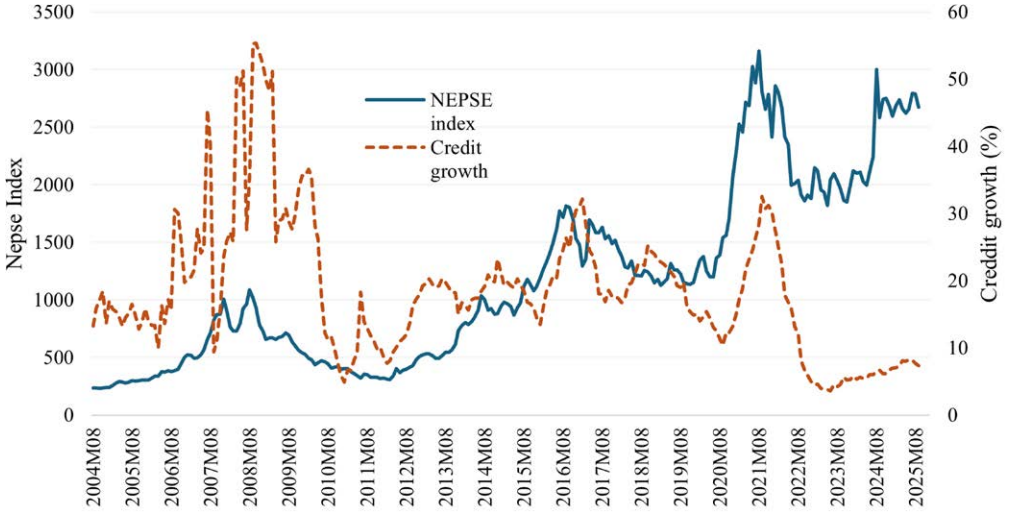

Figure 14: Evolution of NEPSE index and private sector credit growth

Note: This figure shows the evolution of NEPSE (solid blue line), and private sector credit growth (dashed orange line).