Wartime monetary policy: Monetary policy options to adopt during war

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Wartime monetary policy: monetary policy options to adopt during war

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Abstract

Wars occur frequently in the world today. Wars cause economic distortions, and they lead to adverse human, economic and social consequences. Monetary policy actions can be used to cushion the adverse effects of war on the economy. Monetary authorities can respond to war by developing wartime monetary policy frameworks to control inflation and to support the war economy throughout the war. This article explores some monetary policy options that central banks can adopt during war. They include increase interest rate at the start of the war to control inflation expectations, hold interest rate at the same level when there is high uncertainty around war, decrease interest rate when war is battering the economy on multiple fronts, decrease cash reserve requirements on bank deposits during war as was observed in Russia, keep liquidity ratio fixed or increase it during war as was seen in Ukraine, the sale of government securities during war should be considered as well as and the unpopular and least advisable option of printing money to increase money supply during war. The recommended wartime monetary policy options in the study are useful to economists, central banks and governments who are facing war in their countries.

Keywords: Monetary policy; central bank interest rate; monetary policy rate; war; economic impact of war; inflation; cash reserve ratio; money supply; liquidity ratio; interest rate; banks.

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1. Introduction

Historically, the last two centuries have witnessed several wars. These include World War 1 of 1914, World War 2 of 1939, the Cold war of 1947, the Vietnam war of 1955, the Yugoslav Wars of 1990, the Iraq war of 2003, the Donbas war of 2014, the Russia-Ukraine war of 2022, and the recent Israel-Hamas War of 2023. These many wars suggest that wars will continue to be a common occurrence in the world. Often, there are disagreements about the specific cause of a war as warring parties seek to push narratives that favour their own cause (Talbert and Wolfendale, 2018), but there seem to be a consensus in the economic literature that war has economic consequences (Ganegodage and Rambaldi, 2014; Ozili, 2024).

As information or news about on-going wars, or fears of a war starting spreads, economic agents in the warring countries and in neighbouring countries quickly adjust their consumption behaviour, pricing, and investment decisions (Nordhaus, 2002; Ozili, 2024). These adjustments affect the level of output, especially when economic agents anticipate both local and global supply chain disruptions due to the war and which, in turn, encourages the hoarding of essential raw materials needed for production (Field, 2022). This will push prices up, thereby, leading to inflation. War may also lead to increase in budget deficit and currency depreciation which also leads to inflation. Other than inflation, wars have other economic consequences such as reduced access to credit, food scarcity, sudden capital outflows, extreme poverty, domestic insecurity, rising unemployment, increase in economic uncertainty, currency devaluation and increase in public debt. Some of these adverse effects can be mitigated using monetary policy tools. Therefore, the purpose of this paper is to explore monetary policy response in times of war.

Monetary policy refers to a set of policy actions taken by a central bank to influence monetary and financial conditions to achieve price stability which is often interpreted as low inflation (Bekaert, Hoerova and Duca, 2013 Ozili, 2023). Central banks are responsible for the conduct and coordination of monetary policy in a country. During a war, it is the responsibility of the central bank to monitor the economic consequences of the war and prescribe monetary policy solutions to dampen the economic consequences of war on the economy (Poast, 2015). Although there is no manual to guide the conduct of monetary policy during wars, we know that most central banks

will prioritize inflation control – specifically cost push inflation – during wars (Poast, 2015). Therefore, the primary focus of this study will be on the possible monetary policy response to inflation during war.

The study will take a deep dive into historical data to see if there are historical trends from which we can learn something new to guide the conduct of monetary policy for today's war and future wars. We will also review the existing literature on the economic consequences of war to find common monetary policy denominators or solutions that can give clues on how to conduct monetary policy during wars.

This study contributes to the monetary policy literature that examines the impact of monetary policy on the economy. Studies in this literature include Cobham and Song (2021) and Akalpler and Duhok (2018). Our study contributes to the monetary policy literature by presenting an overview of what monetary policy should look like during wars so as to guide central banks into what they should do when they are faced with wars.

The rest of this study is organized as follows. Section 2 presents the literature review. Section 3 presents some recent historical data on inflation and interest rate. Section 4 suggests monetary policy options during wars. Section 5 presents the conclusion of the study.

2. Literature review

In this section, we review several studies in the war economic literature. Regarding the effect of war, Gopinath (2022) showed that war induces persistent structural change in the economy, and it makes it difficult to anchor inflation expectations thereby presenting new challenges for central banks. Danylyshyn and Bohdan (2022) showed that during wars, markets fail to work correctly, prices increase, monetary transmission mechanisms do not work correctly and government direct intervention in the economy increases. Rockoff (2015) examined war financing in the United States and found that, during major wars, the government could not rely on taxes alone to finance the war, and further increase in borrowing came at higher central bank interest rate.

As interest rates rose and became unsustainable in relation to the cost of public debt, the Federal Reserve had to resort to printing new money to finance the war.

Other studies examine monetary policy response during wars. Danylyshyn and Bohdan (2022) recommend increasing money supply during war by purchasing securities in open market operations, the outright purchase of government bonds on the primary market, special targeted refinancing of credit institutions, control of capital flows and direct foreign exchange market regulation. Antipa and Chamley (2017) examined the outcome of monetary policy and fiscal policy in England during the French Wars of 1793 – 1821. They noted that the French Wars exerted unprecedented pressures on the monetary policy and fiscal sustainability of Britain. As the war unfolded, British policy makers made constant adjustment to their monetary and fiscal policy mix, for instance, they had to suspend the gold standard and restore income tax in Britain. These adjustments became necessary because the British government was determined to win the war and it led to a transition to a war economy in Britain without jeopardizing fiscal sustainability. In the monetary policy angle, the Bank of England ensured the provision of sufficient liquidity to the domestic payment system by discounting large amounts of private bills. The Bank of England also financed the war by buying up large amounts of public debt. Friedman (1952) examined the behaviour of prices during three wars: the US civil war, the first World war and the second World war. Friedman showed that to control prices and income during war, the monetary authorities must control the stock of money per unit of output. He also argued that the expansion ratio of the banking system, i.e., the total money created by banks, was the greatest contributor of inflation in both the first world war and the second world war.

Wicker (1969) showed that war may lead to disagreement between the monetary authority and the fiscal authority on whether the central bank should reduce reserve requirements or whether the central bank should undertake discretionary purchases of government securities during wars. Levey (2021) examined the nature of interest rate and inflation in the US during the second world war and showed that, during the war, the government maintained low and stable interest rates to decrease the cost of public debt. There were arguments in support of raising interest rates to curb inflation during the war. But the move to raise interest rate was criticized. It was argued

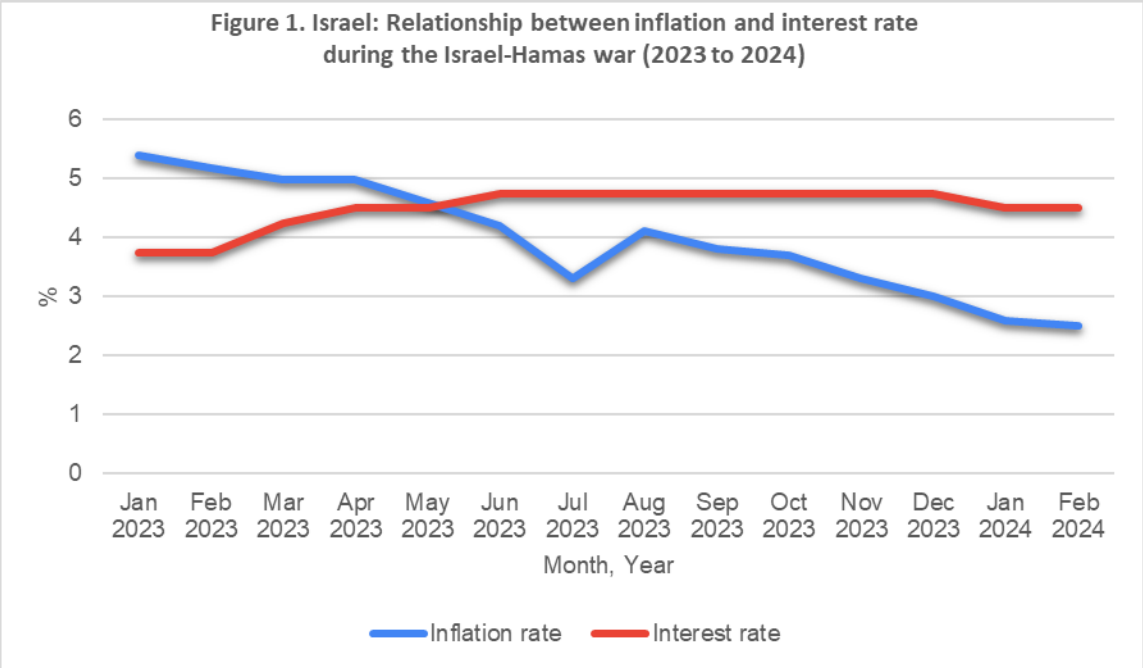
that high rates of interest may not control inflation during the war and that high inflation can be reduced only by increasing production or reducing expenditure, because high interest does nothing to increase production or to reduce government expenditure or consumer expenditure especially during war because these expenditures are usually very small during war.

Balderston (1989) examined the relationship between war finance and inflation in Britain and Germany during the first world war. They showed that there was no significant difference between the fiscal policy of Britain and Germany during the war, and the increase in public debt to finance the war in the two countries had an expansionary effect in Germany than in Britain. Makoto (1967) showed that Japan introduced several economic controls during the war. This was achieved by establishing a war-time finance bank and establishing a managed currency system which made the central bank the supplier of financial and industrial funds. However, Makoto (1967) showed that these economic controls collapsed due to the weakness of Japan's economy during the war. Mouré (2020) argued that governments need a lot of money to fight a war, and that although money is a means to an end, wars create monetary crises and also create opportunity for monetary reforms which is achieved by the tools of monetary policy. In fact, monetary policy seem to be more potent in making funds available to fight wars than fiscal policy. Patel (1953) argued that monetary policy is only effective during war when used in combination with proper budgetary and other policies such as minimizing the cost of public debt.

3. Evidence from war economic data

During the Israel-Hamas war which began on the 7th of October 2023, the Bank of Israel maintained a high interest rate at the start of the war in November and December of 2023 to control inflation and to tame inflation expectations during the war. The Bank of Israel subsequently decreased interest rate in early 2024 when the inflation rate decelerated significantly. This trend can be seen in Figure 1. A similar trend can be seen in Ukraine and Russia. At the start of the Russia-Ukraine war which started on February 22, 2022, the Central Bank of Ukraine raised interest rate from 10% in May 2022 to 25% in June 2022 and held interest rate at the same level for an extended period of time to tame inflation and inflation expectations during

the war. Interest rate was held constant until August 2023 when the central bank was convinced that inflation had decelerated significantly. Afterwards, the central bank began to decrease interest rate as shown in figure 2. In Russia, the Central Bank of Russia significantly increased interest rate at the start of the war to tame inflation and inflation expectations, but the increase in interest rate was only for a short period as the central bank decreased interest rate below the inflation rate for the most part of 2022. In 2023, the Central Bank of Russia began to raise interest rate again to control inflation. What we learn from the data of Israel, Ukraine and Russia war is that, during war, central banks increase interest rate sharply at the start of a war to manage inflation expectations. They tend to hold interest rate at a high level until there is verifiable evidence of a downward deceleration in the inflation rate and inflation expectations. This trend is depicted in figures 1, 2 and 3.



Source: Constructed by the authors using data reported by the Bank of Israel.

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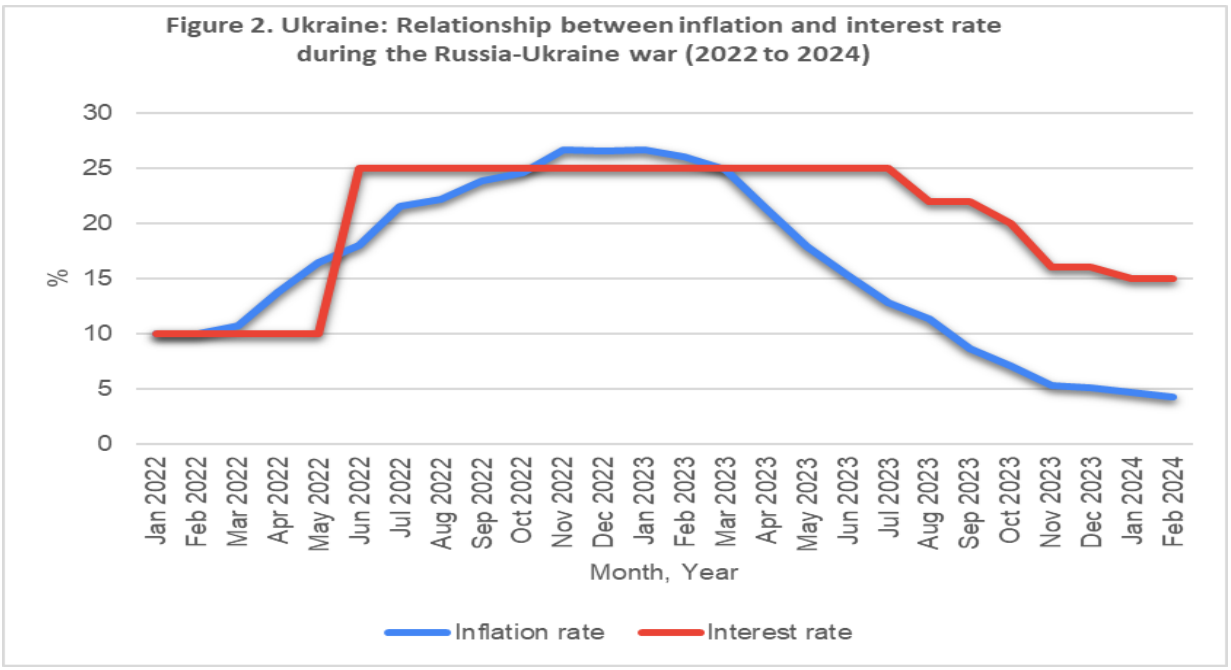

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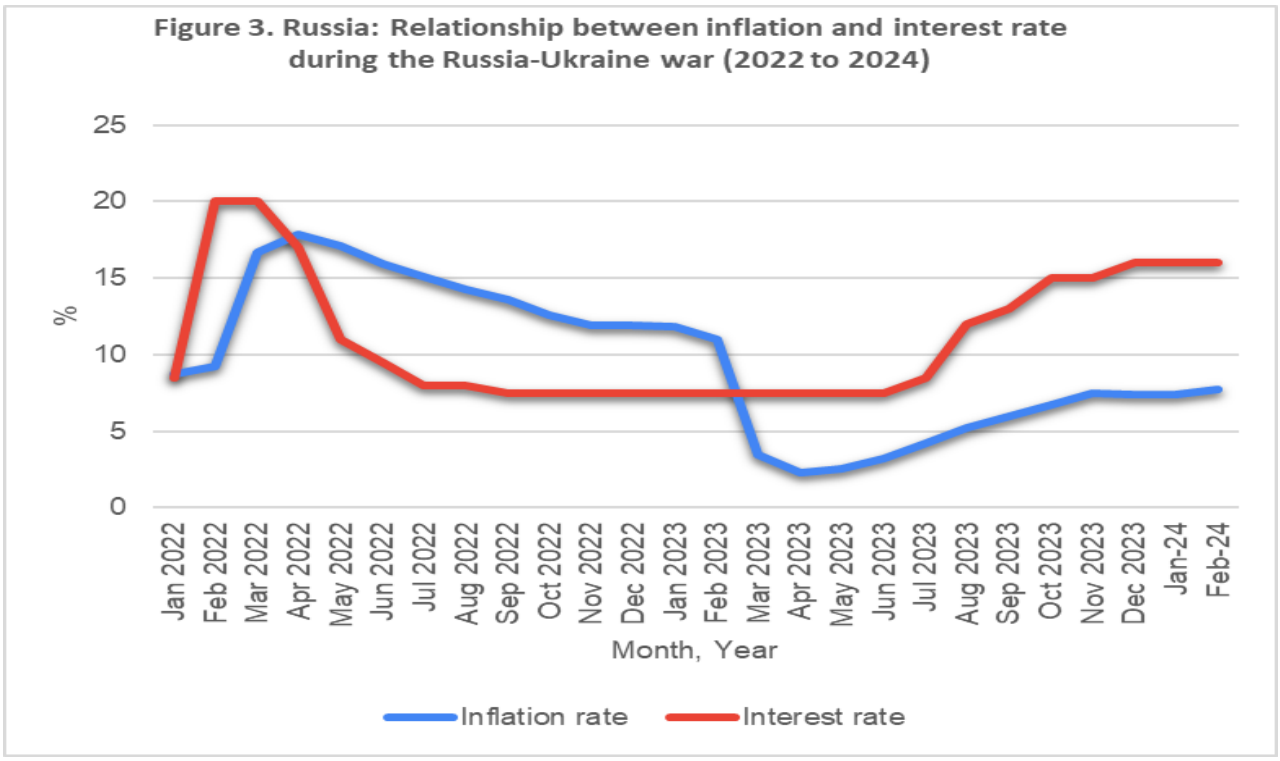
Source: Constructed by the authors using data reported by the Central Bank of Ukraine.



Source: Constructed by the authors using data reported by the Central Bank of Russia.

4. Monetary policy options to consider during war

Below are several monetary policy options that central banks may consider adopting during wars.

4.1. Increase interest rate at the start of the war to control inflation expectations

War may not always give rise to high inflation, but there will be heightened expectations that war will lead to high inflation. The need to control inflation expectations early will lead the central bank to increase interest rate at the start of the war to control both inflation and inflation expectations. Increasing interest rate to control inflation expectations at the start of the war is always a difficult decision because increasing interest rate at the start of the war comes at the cost of stifling access to credit, slowing down economic growth and increasing the rate of unemployment. These costs are the price to pay to control inflation during war. The central bank should increase interest rate at the start of a war and the public should be ready to make the sacrifice of suffering high unemployment and high cost of credit for some period of time (Sniderman, 2020). The increase in interest rate at the start of the war should be significant enough to decrease inflation expectations, reduce core inflation, headline inflation and to eliminate any expectations that inflation will reemerge again (Sniderman, 2020). To validate the potency of using interest rate to curb high inflation at the start of war, we examine data of past wars in figures 1, 2 and 3. We observed that Russia, Ukraine, and Israel increased interest rate at the start of the war to decrease inflation during the war. This indicates that high interest rate at the start of the war played a crucial role in reducing the rate of inflation in Israel, Ukraine, and Russia countries.

4.2. Hold interest rate when there is uncertainty around war

Central banks should hold interest rate when there is high uncertainty about the duration of the war, uncertainty about the outcome of the war, uncertainty about whether the fiscal authorities will go all out to increase or double military spending to finance the war, and when there is uncertainty about whether public debt can sustain war financing. Often, uncertainty surrounding war can complicate the central bank's decision to increase interest rate or to decrease interest rate. In such situation, the central bank need to take a cautious approach by holding interest rate

at the same level as the previous interest rate until such uncertainty dissipate. We saw this happen in Israel and Ukraine (see figures 1 and 2) where the central bank held interest rate for some time due to uncertainty about the impact of sanctions and supply chain disruptions on the economy.

4.3. Decrease interest rate when war is battering the economy on multiple fronts

When war begins to batter the domestic economy on multiple fronts, the appropriate decision of the central bank should be to decrease interest rate. Often, war will have an adverse impact on the domestic economy in all sectors. It can lead to contraction in gross domestic product, decrease in private consumption, decline in investment, increase in unemployment in the real sector, increase in capital flight in the financial sector, sharp decline in export, currency depreciation, balance of payment deficit in the external sector, and large fiscal deficits in the fiscal sector. These adverse effects will require decrease in interest rate to stimulate the domestic economy and reverse these adverse trends. In figure 3, we observed that Russia decreased interest rate in the early months of the war in order to survive the negative economic effect of the international sanctions imposed on Russia at the early stages of the war.

4.4. Decrease reserve requirements on bank deposits during war

Reserve requirement affects the availability of bank credit, making it an important tool of monetary policy. Central banks often increase reserve requirement on bank deposits to ensure the liquidity, solvency, and stability of commercial banks. However, increasing reserve requirement or leaving it unchanged during war will constrain the supply of bank credit to households and firms during war. To stimulate bank lending during war, the central bank should adopt a variable reserve requirement system which allows the central bank to decrease reserve requirement on bank deposit during war and increase reserve requirement in times where there is no war or when the adverse effect of the war has dissipated (Carlson, 2013). Decreasing reserve requirement will release more money to banks and they can lend it out to households and firms during war as the central bank tries to steer the economy towards recovery from the war. Decreasing the cash reserve ratio as a monetary policy strategy during war is supported by the economic data from Russia during the war. Figure 4 shows that the Russian central bank

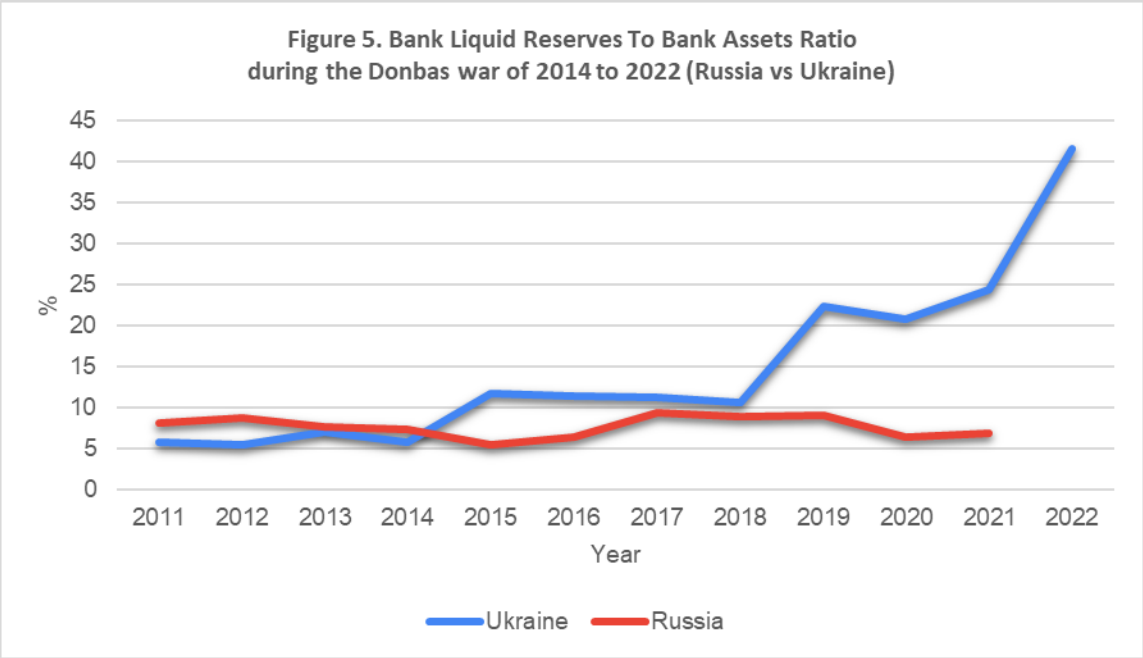
decreased the cash reserve ratio at the start of the war. Decreasing the cash reserve ratio allowed Russian banks to increase lending to support the economy – at a time when heavy international sanctions were imposed on Russia. The cash reserve ratio was gradually increased after the adverse effect of the war began to dissipate in Russia. This is evidence of the adoption of a variable cash reserve requirement system during the war.

Source: Constructed by the authors using data reported by the Central Bank of Russia.

4.5. Keep liquidity ratio fixed or increase it during war

The liquidity ratio is the amount of assets that banks must hold against total deposits (Schmitz, 2013). These assets can be either cash in the bank or near-money assets like government securities that can be quickly converted to cash to meet customers' withdrawal demands (Schmitz, 2013). A high liquidity ratio is a contractionary monetary policy decision aimed at ensuring that banks have sufficient collateral to cover withdrawals. During war, the risk of panic by depositors is high. If this risk materializes, it could lead to a bank run which is a situation where a large number of depositors request to withdraw their money at the same time. Bank runs can lead to bank failure during war especially when banks have insufficient liquid assets that can be

quickly converted to cash to meet customer needs. To mitigate this, central banks can either increase the liquidity ratio or keep the liquidity ratio at fixed rate. This will ensure bank safety during the war and increase banks' ability to meet customers' withdrawal needs during the war. Figure 5 shows evidence of increase in the liquidity ratio in Ukraine during the Donbas war which lasted from 2014 to 2022.



Source: Figures were constructed by the authors using data reported by the Central Bank of Ukraine and Russia.

4.6. Sale of government securities during war

The sale of government securities to the public by the central bank, or the purchase of government securities by banks and the general public, will lead to monetary expansion in favour of the government but lead to monetary contraction for banks and the public (Bernanke, 2020; Mishkin, 2009). As banks and the public purchase government securities via open market operations, more money would flow to the Federal government and the government can use the money to fund the war and support the war economy (Warburton, 1945). Given that the Federal government always make more economical use of money during war, the government can use these funds to lower the cost of public debt and to support the economy during war. Therefore,

the sale of government securities to the public by the central bank, or the purchase of government securities by banks and the general public, should be encouraged during war.

4.7. Creation of money or direct increase in money supply

Although not a popular opinion and not advisable, certain conditions make it appropriate for a central bank to turn to the printing press to print or create new money to finance the war such as to pay for troops allowance and to purchase military equipment and weapons. These conditions include when there is high fiscal dominance, or when the government can no longer borrow, or when no more taxes can be raised (Levey, 2021; Ebeling, 2008). These conditions may leave the central bank with no choice but to create new money. The newly created money will inject additional money to the financial system, but it would lead to inflation which decreases the purchasing power of people. Whenever it becomes unavoidable to print money to finance war, the central bank should ensure that the newly printed money does not rise faster than bank deposits.

5. Conclusion

This article examined monetary policy response in times of war. The study explored several monetary policy options which a central bank may adopt during war. Historical data were used to validate the recommended monetary policy options. Recent historical war data showed that, during wars, central banks tend to increase interest rate at the start of a war and maintain a high interest rate until there is a significant deceleration in inflation and inflation expectations after which they will lower interest rate. Evidence of this was seen in Russia and Ukraine during the Russia-Ukraine war which began in 2022 up until 2024 as well as in Israel during the 2023 Israel-Hamas war. We recommend some monetary policy actions which central banks can adopt during war. These include increase interest rate at the start of the war to control inflation expectations, hold interest rate at the same level when there is high uncertainty around war, decrease interest rate when war is battering the economy on multiple fronts, decrease cash reserve requirements on bank deposits during war as was observed in Russia, keep liquidity ratio fixed or increase it

during war as was seen in Ukraine, the sale of government securities during war should be considered as well as the unpopular and least advisable option of printing money to increase money supply during war. While these monetary policy options are based on sound economic principles, their practicality and effectiveness in controlling inflation during war may differ across countries and will be greatly influenced by the type of war, the duration of the war, the macroeconomic condition of the warring countries, fiscal dominance, and other factors. Therefore, we advise that policymakers should carefully consider the unique macroeconomic condition in their countries before adopting the wartime monetary policy options we recommend in this study.

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