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**On wartime money finance in the Japanese occupied territories during the Pacific War: The case of instant reserve banks as bad central banks<sup>1</sup>**

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**Abstract:** This paper explores how the Japanese government financed war expenditures locally in the occupied territories during the Pacific War. First, the reserve banks, founded instantly by the government, funded the occupation forces by issuing their bank notes in North/Central China, and Southern Regions. Second, the Japanese government financed military expenses by requesting the existing central banks to issue their legal tenders in Manchuria, Indochina, and Thailand. In the years 1943-1945, the first method in the regions with sharp inflations yielded 559.7 billion yen at face value, but only 7.2 billion yen at purchasing power parity (PPP), while the second in the regions with relatively low inflations generated only 5.8 billion yen at face value, but still 3.6 billion yen at PPP. In the former regions, the occupation forces did not acquire that much purchasing power, while in the latter regions, non-negligible portions of the occupied countries' nominal GDP were transferred to the occupation forces.

Key words: money finance, wartime finance, occupation, central bank, reserve bank.

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## 1. Introduction

This paper explores how the Japanese government financed war expenditures locally in the occupied territories during the Pacific War (from December 1941 to August 1945). In particular, it focuses on how much the reserve banks, which were founded instantly by the Japanese government in North/Central China and Southern Regions (except for Indochina and Thailand), contributed to war finance during the years 1943-1945. Such money finance by the reserve banks is compared with the monetary operations developed by the Bank of Japan (BoJ) in the interior on the one hand, and by the existing central banks in Manchuria, Indochina, and Thailand on the other hand.

As long as statistics are concerned, the reserve banks in the occupied territories seemed to contribute substantially to war finance during the Pacific War. According to Table 1, 149.6 billion yen was spent from the special account for extraordinary military expenses (EME special account) during the years 1943-1945. While only 10% was covered by taxes, the remaining 90% was financed by (i) requiring the BoJ to underwrite public debts, and (ii) forcing households in the interior to purchase public bonds. In addition, a considerable portion of the military expenses in the occupied territories (65.7 billion yen) was covered by (iii) borrowing from the reserve banks and the central banks there. Concretely, the BoJ extended credits to the government up to 35.2 billion yen by issuing BoJ notes in the years 1943-1945, and private sectors purchased public bonds up to 39.7 billion yen in 1943 and 1944 with 1945 data not available. On the other hand, the reserve banks and the central banks in the occupied territories provided the military forces with 36.9 billion yen and 5.8 billion yen respectively by issuing local bank notes or legal tenders.

In addition, the Overseas Funds Bank, founded in February 1945 by the Japanese government, intermediated between the occupation forces and the reserve banks in North/Central China and Southern Regions, and extended lending up to 522.8 billion yen completely outside the EME special account. In sum, the reserve banks in the occupied territories contributed 36.9 billion yen inside the EME special account, and 522.8 billion yen outside it in the last three years of the war. Given that nominal GNE amounted to about one hundred billion yen in 1945, the scale of war

finance by the reserve banks was extremely large, and much larger than that by the BoJ or by the central banks in the occupied territories.

However, the above statistics would be somewhat misleading without any explicit consideration for the following facts. First, the Japanese government maintained fixed exchange rates between Japanese yen and local currencies up to the end of the war. Second, the regions where the reserve banks were operated suffered from steep inflations, while inflations were relatively mild in the regions where the central banks funded the occupation forces. The two facts jointly made the purchasing power acquired by the occupation forces deviate substantially from the face value in the former regions.

More concretely, the transfer to the occupation forces through the reserve banks in North/Central China and Southern Regions amounted to 559.7 billion yen at face value, but only 7.2 billion at purchasing power parity (PPP) with December 1941 as a base month. It was equivalent to at most a few percent of the nominal economic scale of China and Southern Regions. On the other hand, the transfer to the occupation forces through the central banks in Manchuria, Indochina, and Thailand reached only 5.8 billion yen at face value, but still 3.6 billion yen at PPP. It accounted for 5% to 20% of the vanquished countries' nominal GDP. This finding is consistent with Huff and Majima (2013) on the wartime transfer to the occupation forces in Indochina and Thailand. Note that the transfer to the Japanese government through the issue of BoJ notes amounted to more than 20 percent of its nominal GNE in 1945.

In this way, the Japanese government developed large scale money finance by forcing the reserve banks in North/Central China and Southern Regions to issue enormous amounts of bank notes, but the occupation forces failed to acquire much purchasing power from such extensive monetary finance. In contrast, the money finance operations that were developed by the BoJ in Japan, and by the central banks in Manchuria, Indochina, and Thailand were relatively successful. A major reason for this sharp contrast is that strong demand for bank notes (legal tenders) as a store of value came from black market dealers in Japan as documented in Saito (2017), and from farmers in rural districts in Indochina and Thailand as discussed in Huff and Majima (2013).

There has not been much work which measures wartime financial exploitation in occupied economies. Huff and Majima (2013) examines in detail the financial exploitation from Southeast Asia by the Japan's World War II occupation, while Occhino et al. (2008) carefully estimate French transfer by Nazi Germany. Scherner (2015) also explores the German system of financing occupation.

This paper is organized as follows. Section 2 describes how the reserve banks and the central banks in the occupied territories funded the Japanese occupation forces. Section 3 compares the transfer to the occupation forces by the reserve banks and the central banks between at face value and at PPP region by region, and evaluates the relative size of the transfer in terms of ratios to the nominal macroeconomic scale of the occupied countries. In addition, it explores how the wartime obligations to the occupied countries were redeemed by the Japanese government in the aftermath. Section 4 discusses that the reserve banks notes failed to fulfill any characteristic of money, a medium of exchange, a store of value, and a unit of account.

## **2. Money finance by the reserve banks and the central banks in the occupied territories**

### **2.1. The reserve banks on the Continent**

Before the military forces invaded North China in 1937, the Japanese government founded the Bank of Taiwan (BoTw) in 1899, the Bank of Chosen (Korea) (BoCs) in 1911, and the Central Bank of Manchou (Manchuria) (CBM) in 1932 as a central bank in each colonial territory on the Continent. The government adopted a currency policy by which each central bank issued not BoJ notes, but its own legal tender in order to protect the interior economy from possible influences of the colonial economies. Each colonial yen was set at par with Japanese yen, and the fixed rate was maintained up to the end of the war.

In North China, three Chinese government-managed banks (the Central Bank of China, the Bank of China, and the Bank of Communications) started to issue legal tenders as nonconvertible bank notes in 1935. Immediately after that, the Japanese government attempted to found a reserve bank in order to challenge the circulation of the legal tender, but it failed to do so.

When the China incidence was extended to the Sino-Japanese War in 1937, the Japanese government set the special account for extraordinary military expenses (EME). Initially, the occupation forces carried yen-denominated military scrips in North China. Such scrips were government-issued notes in the sense that they were eventually backed by the EME special account at the BoJ balance sheet (see Figure 1).

However, the above yen-denominated scrips were not circulated in the occupied territories. Then, the government attempted to circulate BoCs notes instead by requiring the BoCs to purchase the scrips, but BoCs notes served as not a medium of exchange, but a speculative instrument. BoCs notes were depreciated against the Chinese legal tender in Peking, but they were appreciated against it in Shanghai. Given such opportunities of arbitrage, BoCs notes were transferred from Peking to Shanghai, converted to the legal tenders there, brought back to Peking, and then converted again to BoCs notes. Such transfer between Peking and Shanghai repeated itself. Accordingly, BoCs notes were retired from circulation in North China.

After a complete failure of circulating BoCs notes in the occupied territories, the government supported a puppet government's attempt to found reserve banks in North and Central China. Concretely, the Federal Reserve Bank of China (FRBC) was opened in Peking in March 1938, and the Central Reserve Bank of China (CRBC) was started in Nanjing in January 1941. However, neither of FRBC yen notes nor CRBC yuan notes were not circulated widely in the territories, because they still had to compete with the Chinese legal tenders, which were supported indirectly by the US and the UK, and with native bank checks, which were exchanged in a private draft clearing house in Shanghai (called the Wei Wah system).<sup>3</sup> Given such limited circulation, the Japanese government faced difficulties in using FRBC notes or CRBC notes as a monetary instrument of seigniorage.

## **2.2. Bilateral depositing as money finance instruments**

### **2.2.1. With the Federal Reserve Bank of China and the Central Reserve Bank of China**

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<sup>3</sup> See Kojima (1941) and Takaishi (1970a).

When the military forces started to invade Southern Regions in 1941, the Japanese government ordered the BoCs, the BoTw, the CBM, and Yokohama Specie Bank (YSB) to seize foreign banks such as the Hong Kong and Shanghai Banking Corporation (HSBC) and the National City Bank. The three Chinese government-managed banks in North/Central China were forbidden to issue any legal tender. In 1942, the Wei Wah system in Shanghai was taken over by a new clearing system that was operated under the direction of the CRBC.<sup>4</sup> Consequently, the FRBC and the CRBC could enjoy currency monopoly there.

In addition, the government adopted a fixed exchange rate for both FRBC yen and CRBC yuan up to the end of the war in August 1945, thereby attempting to support the value of these currencies. Concretely, FRBC yen was set at par with BoJ yen in March 1938, while 100 CRBC yuan was set at 18 BoJ yen in May 1942. Note that any payment associated with FRBC notes and CRBC notes was recorded in terms of these fixed rates at the EME special account.

Given the above currency monopoly and fixed exchange rates, the government finally decided to use FRBC notes and CRBC notes to cover war expenses in the occupied territories in 1943. A bilateral depositing contract served as a major money finance instrument. In North China, the BoCs made the contract with the FRBC. As Figure 2 shows, bilateral depositing worked as follows.

- (i) The BoCs Tokyo branch received a military payment that was made from the EME special account by the Japanese government.
- (ii) At the Peking branch, the BoCs issued a notional deposit to the FRBC.
- (iii) At the Peking main office, the FRBC instead issued a deposit to the BoCs.
- (iv) At the same time, the BoCs Tokyo branch made uncollateralized credits to the Japanese government.
- (v) The BoCs Peking branch withdrew cash in terms of FRBC notes from its deposit at the FRBC, and deliver FRBC notes to the occupation forces in Peking as an agency of

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<sup>4</sup> According to Kojima (1943), properties such as land were offered as collaterals by commercial and native banks that were participating in the Wei Wah system. In a new clearing system, however, such collateral requirement was abolished. Consequently, CRBC notes and checks were convertible with each other, but both were no longer backed by real assets in the system operated by the CRBC.

the BoJ.

Under the above contract, the notional deposits by the FRBC at the BoCs were cashed only after the uncollateralized loans were repaid to the BoCs by the government. The rates of interest on the uncollateralized loan and the notional deposit were set at rather low levels. In addition, when the loan to the government would be due or by which currency the deposit would be cashed was not specified at all in the contract. In fact, any portion of principal was not repaid to the FRBC through the BoCs at all before the end of the war.

In this way, the BoCs intermediated between the Japanese government and the FRBC, and the government could finance military expenses in North China by the issue of FRBC notes. In the above money finance scheme, the FRBC was not allowed to withdraw the notional deposit at the BoCs Peking branch, unless the uncollateralized loans were repaid by the government. Thus, the BoCs Tokyo office did not have to transfer any BoJ notes or gold bars to its Peking office as reserves or specie. That is, without transporting any specie to the BoCs Peking branch, the government could finance military expenses in North China by the issue of FRBC notes. The YSB made the same bilateral depositing contract with the CRBC, and helped the government to finance military expenses in Central China by the issue of CRBC notes.

### **2.2.2. With the Southern Development Bank and the Overseas Funds Bank**

The government adopted the same money finance strategy for military expenses in Southern Regions except for Indochina and Thailand. For this purpose, the Southern Development Bank (SDB) was founded in Tokyo in April 1942, and its six local branches were opened in Manila (Philippines), Batavia (Java), Palembang (Sumatra), Rangoon (Burma), Singapore (Malaya), and Kuchin (Borneo).

By issuing SDB notes in terms of dollars (Malaya and Borneo), guilders (Java and Sumatra), rupees (Burma), and pesos (Philippines), the SDB replaced local-currency-denominated scrips, which were initially used for military expenses in the occupied Southern Regions. Then, it started to make uncollateralized credits directly to the Japanese government in 1943. Each local currency

was fixed at par with notional yen, which was a hypothetical currency and served only as an accounting purpose. Any military payment associated with SDB notes was recorded in terms of notional yen at the EME special account.

In early 1945, all the above money finance schemes through the reserve banks were taken over by the Overseas Funds Bank (OFB), which was founded as a public financial institution in Tokyo. Now, not the BoCs or the YSB, but the OFB intermediated between the reserve banks (the FRBC, the CRBC, and the SDB) and the Japanese government. One important difference from the previous schemes was that any military payment through the OFB was not included any longer at the EME special account, but in a secret fiscal account separately. A major reason for this was that inflations were sharp in North/Central China and Southern Regions. The EME special account would have amounted to astronomical figures if military payments had been recorded there in terms of fixed exchange rates. By founding the OFB, thus, the government hid skyrocketing military expenses for the occupied territories from the public.

### **2.2.3. With the Central Bank of Manchou, the Bank of Indochina, and the Bank of Thailand**

In Manchuria, Indochina, and Thailand, the government implemented another scheme of money finance by employing not newly created bank notes such as FRBC notes, CRBC notes, or SDB notes, but existing legal tenders issued by central banks on the Continent.<sup>5</sup> In April 1944, the YSB started bilateral depositing with the Central Bank of Manchou (CBM). That is, the YSB helped the government to receive uncollateralized credits from the CBM by the issue of CBM yen notes, whose currency unit was at par with BoJ yen. Similarly, in April 1944, the YSB initiated bilateral depositing with the Bank of Indochina (BoI) through the issue of BoI piastre notes, and the BoJ did the same operation with the Bank of Thailand (BoTh) through the issue of BoTh baht notes. Both piastre and baht were at par with BoJ yen.

The above bilateral depositing arrangements between the Japanese government and the three central banks served as not only a money finance instrument for the government, but also

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<sup>5</sup> Huff and Majima (2013) describe in detail financial arrangements between the YSB and the BoI and between the BoJ and the BoTh.



provisions of yen currency for cross-border settlements for these banks. Immediately after Manchuria, Indochina, and Thailand allied themselves with Japan, they were isolated from dollar/pound blocks, and suffered from a shortage of currency for cross-border settlements. The bilateral depositing scheme thus allowed these central banks to purchase yen by their own legal tender for settlements in a yen block. For this purpose, the central banks could withdraw yen currency from deposit accounts (called 'special yen' accounts), which were made at the YSB or the BoJ under the bilateral depositing contract. For the contracts with the BoI and BoTh, the uncollateralized loans to the government were expected to be redeemed by delivery of gold bars.

### **3. Transfer to the occupation forces from the viewpoint of the occupier and the occupied**

#### **3.1. On scale of the transfer to the occupation forces at face value and at PPP**

Let us first examine in detail the scale of the transfer to the occupation forces at both face value and purchasing power parity (PPP). As shown in Table 2, the occupation forces received large-scale transfer from the FRBC (North China), the CRBC (Central China), and the SDB (Southern Regions) in the years 1943-1945. Concretely, the transfer from those reserve banks amounted to 5.3 billion yen in 1943 and 31.6 billion yen in 1944. When the OFB intermediated bilateral depositing with the reserve banks in 1945, it reached even 522.8 billion yen. In contrast, the transfer from the central banks in Manchuria, Indochina, and Thailand was relatively modest with 2.6 billion yen in 1944 and 3.2 billion yen 1945. As long as these figures are concerned, the transfer to the occupation forces from the reserve banks in North/Central China and Southern Regions was overwhelmingly dominant.

However, the above statistics would be misleading without careful consideration for price differences among the regions. According to Table 3, during the period from December 1941 to December (or September) 1944, wholesale prices increased by only 8.6% per year in Tokyo, but the regions where the transfer was made through the reserve banks experienced sharp inflations. During the same period, wholesale prices skyrocketed annually by 84.7% in Peking/Tianjin (North China), by 198.8% in Shanghai (Central China), and by 355.5% in Singapore (Southern Regions).

On the other hand, the regions where the transfer was made through the central banks were subject to relatively mild inflations. Again during the same period, wholesale prices increased annually by 14.7% in Xinjing (Manchuria), by 37.5% in Saigon (Indochina), and by 53.3% in Thailand. Such a difference between the two regions is magnified greatly once the last year of the war 1945 is included. For example, the annual inflation rate accelerated from 198.8% to 731.8% in Shanghai, but it increased moderately from 37.5% to 42.3% in Saigon.

As mentioned before, the government fixed exchange rates against local currencies up to the end of the war, and any transfer to the occupation forces was recorded in terms of fixed exchange rates at the EME special account in 1943 and 1944 and at the hidden account of the OFB in 1945. Thus, sharp inflations contributed straight to fiscal expansion in the transfer in North/Central China and Southern Regions. To correct for such impacts of high inflations, the face value of the transfer is now adjusted by PPP or  $\frac{P_t^{Tokyo}}{P_t^i}$ , where  $P_t^{Tokyo}$  and  $P_t^i$  denote time- $t$  wholesale prices of Tokyo and region  $i$  respectively. By this adjustment, overvaluation of the transfer in a region with a sharp increase in prices is corrected properly.

Table 4 reports the scale of the transfer to the occupation forces in each region at both face value and PPP with December 1941 as a base month. In North/Central China and Southern Regions, the transfer amounted to 5.3 billion yen at face value and 1.4 billion yen at PPP in 1943, 31.6 billion yen at face value and 2.6 billion yen at PPP in 1944, and 522.8 billion yen at face value and 3.3 billion yen at PPP in 1945. In the years 1943-1945, the transfer in those regions amounted to even 559.7 billion yen at face value, but only 7.2 billion yen at PPP.

In Manchuria, Indochina, and Thailand, on the other hand, the transfer to the occupation forces amounted to 2.6 billion yen at face value and 1.8 billion yen at PPP in 1944, and 3.2 billion yen at face value and 1.8 billion yen at PPP in 1945. In total, the transfer in those regions reached only 5.8 billion yen at face value, but still 3.6 billion yen. In comparison between the two regions, thus, the transfer in the latter regions accounts for only 1% ( $= 5.8/559.7$ ) of the transfer in the former regions at face value, but still 50% ( $= 3.6/7.2$ ) of it at PPP.

Viewing differently, the occupation forces in North/Central China and Southern Regions could not acquire that much purchasing power despite of extremely large-scale transfer at face value. On the other hand, the forces in Manchuria, Indochina, and Thailand could still obtain purchasing power by modest transfer at face value.

Let us finally compare the domestic transfer to the government financed by the BoJ with the transfer to the occupation forces through the reserve/central banks. Here, money finance by the BoJ is measured by an annual increment in outstanding BoJ notes.<sup>6</sup> According to Table 5, the transfer by the reserve banks overwhelmingly dominated money finance by the BoJ at face value, but the latter dominated the former at PPP. In 1945, for example, money finance by the BoJ amounted to 24.6 billion, and money finance by the reserve banks reached 522.8 billion yen at face value. At PPP, however, the latter reduced to only 3.3 billion or 13% of the former. As long as relative prices between Japan and the occupied territories are taken into consideration properly, money finance by the BoJ was still dominant in the war finance of the Japanese government.

## 3.2. Transfer to the occupation forces from the viewpoint of the occupied

### 3.2.1. Real money balances and real seigniorage

How effectively the transfer to the occupation forces was financed by the issue of bank notes depended on how strongly those in the occupied territories demanded such bank notes. A real magnitude of seigniorage ( $S_t$ ) is usually measured by an annual increment in outstanding bank notes ( $\Delta M_t$ ) divided by prices ( $P_t$ ). Thus, real seigniorage can be decomposed into real money balances and monetary expansion as follows.

$$S_t = \frac{\Delta M_t}{P_t} = \frac{M_t}{P_t} \frac{\Delta M_t}{M_t}$$

When money demand is strong, monetary expansion dominates price increases, thereby enhancing real money balances. Consequently, real seigniorage increases with real money balances. Conversely, weak money demand results in declines in both real money balances and

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<sup>6</sup> Hattori and Oguro (2016) estimate the scale of money finance by the BoJ during and immediately after the war by various measures.

real seigniorage.

Table 6 computes real money balances as well as real seigniorage for the monetary operations developed by the central banks (the BoJ, the CBM, the BoI, and the BoTh) and the reserve banks (the FRBC, the CRBC, and the SDB) in the years 1942 to 1945. With help of strong demand for BoJ notes, the BoJ could expand the issue of bank notes under stable price conditions, and improved both real money balances and real seigniorage substantially. Although not as much as the BoJ did, the central banks in the occupied territories, such as the CBM, the BoI, and the BoTh, could successfully raise real money balances as well as real seigniorage. It means that there was strong demand for the legal tenders in those occupied territories.

On the other hand, the reserve banks, such as the FRBC, the CRBC, and the SDB, could not yield much real seigniorage by the issue of bank notes. Both real money balances and real seigniorage peaked in December 1943 in most cases, and declined quickly up to August 1945. In the case of the CRBC, for example, real money balances increased from 100 to 169 in 1943, but declined to 68 in 1945. In the case of the SDB, real seigniorage dropped sharply from 100 in 1943 to 20 in 1945. Some possible reasons for such a sharp contrast between the regions with the central banks and the regions with the reserve banks will be discussed in a concluding section.

### **3.2.2. Scale of the transfer to the occupation forces relative to the occupied countries' economic scale**

Let us next explore the relative scale of the transfer to the occupation forces from the viewpoint of the occupied countries. Concretely, the transfer is examined in the light of a ratio relative to the occupied country's nominal GDP. According to Table 7, the transfer through the CBM accounted for around 10% of nominal GDP of Manchuria in 1944. The transfer through the BoI reached 22.1% of nominal GDP in 1944, and 13.4% in 1945, while the transfer through the BoTh amounted to 6.9% of nominal GDP in 1944, and 5.4% in 1945. In sum, non-negligible portions of nominal GDP of the occupied countries were transferred to the occupation forces through the issue of the legal tenders by the central banks in the occupied territories.

It is rather difficult to obtain nominal GDP of China of the years 1943-45. Hence, hypothetical nominal GDP is computed under the following heroic assumptions. First, real GDP was constant in the years 1940-1945. Second, deflators increased as urban wholesale prices increased. As to urban wholesale price indexes, national averages are available up to 1943, and city averages are available for Tianjin and Shanghai in 1944 and 1945. Thus, the hypothetical nominal GDP of 1944 and 1945 is computed city by city. According to Table 8, the relative transfer through both the FRBC and the CRBC accounted for 0.88% in 1943, from 0.70% to 1.12% in 1944, and 0.87% to 2.23% in 1945.

In the case of Indonesia, the SDB issued its bank notes in Jawa and Sumatra in order to finance the transfer to the occupation forces. Table 9 computes Marshallian  $k$  and relative seigniorage from outstanding SDB notes in Indonesia. Marshallian  $k$  as a measure of strength of money demand is defined as outstanding SDB notes divided by nominal GDP, while relative seigniorage is defined as an annual increment in outstanding SDB notes divided by nominal GDP. As Marshallian  $k$  implies, money demand increased up to 1944, and then it declined suddenly in 1945. On the other hand, seigniorage accounted for 3.23% of nominal GDP in 1943, 4.66% in 1944, and 0.91% in 1945. In sum, the relative scale of the transfer to the occupation forces in North/Central China and Indonesia was not so large as in Manchuria, Indochina, and Thailand.

### **3.2.3. Redemption of wartime obligations at the end of the war**

When the reserve banks (the FRBC, the CRBC, and the SDB) were liquidated at the end of the war in August 1945, the uncollateralized loans to the government were redeemed mainly by funding from sales of gold bars in China.<sup>7</sup> Through the YSB Chinese branches, the OFB sold 35 tons of gold bars just before the end of the war, and raised 502.6 billion yen in China,<sup>8</sup> by which most of 522.8 billion yen obligations were redeemed to the holders of the bank notes in North/Central China and Southern Regions. Given extremely depreciated local currencies as a

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<sup>7</sup> See Ministry of Finance (1955), and Takaishi (1970b) and (1970c) for the descriptions of this subsection.

<sup>8</sup> The sales of gold bars in China were converted in the wartime fixed exchange rates.

result of sharp inflations, only 35 tons of gold bars were good enough to write off seemingly astronomical amounts of the obligations by the OFB.<sup>9</sup>

The uncollateralized loans owed by the government to the BoI (1.3 billion yen) and the BoTh (1.2 billion yen) were also redeemed by delivery of gold bars. In addition, the BoJ kept earmarked gold as liabilities to Indochina and Thailand. While some earmarks were cancelled, 33.1 tons and 38.9 tons of gold were eventually delivered to the two countries respectively after the end of the war. It follows that more gold bars were required in redeeming the obligations to Indochina and Thailand than those to North/Central China and Southern Regions.

The CBM experienced a completely different history in the postwar period. The Red Army of Soviet requisitioned most physical and financial assets in Manchuria just before and immediately after the war. The CBM was also seized entirely by the Red Army. Up to Spring 1947, however, CBM yen bank notes were still circulated widely with the scrips carried by the Red Army, and the legal tenders issued by a central bank of the Nationalist Government of China. The Japanese government liquidated only the CBM Tokyo branch in 1947.

In conclusion, during the Pacific War, the occupation forces could obtain much purchasing power from the CBM, the BoI, and the BoTh, but at the end of the war, large amounts of gold bars were required to redeem the obligations to Indochina and Thailand. In addition, the entire body of the CBM was confiscated by the Red Army. A large amount of war finance in the Japanese interior was repaid by high inflations and heavy levies during the postwar period.

On the other hand, the occupation forces failed to acquire much purchasing power from the reserve banks in North/Central China and Southern Regions as a consequence of rather weak demand for these bank notes. At the end of the war, however, only small amounts of gold bars were good enough to write off the entire obligations in North/Central China and Southern Regions. In this way, the wartime benefits were balanced by the postwar costs.

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<sup>9</sup> Needless to mention, a fact that the monetary transfer to the occupation forces was not that large in North/Central China and Southern Regions does not mean that Japan's labor exploitation and physical confiscation were also small there. See Boldorf and Okazaki (2015) for a wide range of severe exploitations by the Japanese government and the occupation forces in China, Southern Regions, and Manchuria.

#### 4. Discussion

For the following reasons, the reserve banks in North/Central China and Southern Regions could not work effectively to finance the transfer to the occupation forces. First, these reserve banks failed to serve as a standard central bank at all. A central bank provides international currencies for cross-border settlements, facilitates domestic exchange in cooperation of private banks, and stabilizes currency value by maintaining reserves and species. The reserve banks were not successful in either respect. Accordingly, the reserve bank notes could not work as a medium of exchange.<sup>10</sup>

Second, the reserve bank notes were inconvenient not only as a medium of exchange, but also as a store of value. As discussed by Huff and Majima (2013), farmers in rural districts held the legal tenders as a store of value in Indochina and Thailand, while as suggested by Saito (2017), black market dealers held BoJ notes as a store of value in Japan. During the Pacific War, however, households and firms in North/Central China were reluctant to hold the reserve bank notes, and still deposited their savings at native banks, which could provide domestic exchange between cities and hinterlands.<sup>11</sup>

Third, the reserve bank currencies were fixed at arbitrary rates with BoJ yen. Then, conversion by these fixed rates turned out to be misleading in recording the transfer to the occupation forces at the EME special account and the OFB account. In this regard, the reserve bank currencies were not instrumental as a unit of account either. Ironically enough, the above fixed rates created profitable arbitrage opportunities between FRBC yen and CRBC yuan or between FRBC yen and the legal tender yuan in black markets, which in turn allowed native banks to earn huge profits by active speculation, and to compete successfully with the FRBC and the CRBC.<sup>12</sup>

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<sup>10</sup> According to Takaishi (1970a), barter transactions in black markets were dominant in North/Central China in the last years of the war.

<sup>11</sup> See Iwatake (1990) and Zhaojin (2003).

<sup>12</sup> See Iwatake (1990) and Zhaojin (2003).

In sum, the reserve bank notes could not fulfill satisfactorily any characteristic of money, a medium of exchange, a store of value, or a unit of account. For all the reasons, the reserve bank notes failed to be circulated widely as a money finance instrument for the Japanese government. Stating differently, only the well-established central bank currencies could allow the government to finance large-scale war expenses. However, while it was relatively successful during the war, such financial exploitations by occupation had to be repaid in the postwar period by Japanese enormous burdens such as expensive repayments, heavy taxes, and high inflations.

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**Table 1: Financing military expenses at/outside home by  
Bank of Japan, reserve/central banks in the occupied territories, and private saving  
(unit: million yen)**

	Special account for extraordinary military expenses			Changes in outstanding public debts	Financial sources			
	total	expense at home	expense in occupied territories		total	financed by BoJ notes	financed by reserve/central bank notes in occupied territories	net private saving
1937	2,034	1,655	379	2,053	4,016	439		3,577
1938	4,795	3,121	1,674	4,566	4,774	450		4,324
1939	4,844	3,598	1,246	5,644	7,560	924		6,636
1940	5,723	4,441	1,282	7,437	9,808	1,098		8,710
1941	9,487	6,562	2,925	10,784	13,051	1,201		11,850
1942	18,753	14,074	4,679	15,366	14,720	1,170		13,550
1943	29,818	20,031	9,787	27,963	25,057	3,117	5,297	16,643
1944	73,493	30,028	43,465	66,837	64,804	7,480	34,218	23,106
1945	46,254	33,763	12,491	47,503	27,720	24,554	3,166	n.a.
total of 1943-45	149,565	83,822	65,743	142,302	117,581	35,151	42,681	39,749
total of 1937-45	195,201	117,273	77,928	188,152	171,511	40,434	42,681	88,396

**Sources:** Emi and Shionoya (1966), p. 188, and Ministry of Finance (1955), p. 199, for the special account for extraordinary military expenses, Bank of Japan (1966), p. 159 and p. 193, for outstanding public debts and BoJ notes, Ministry of Finance (1955), p. 179, for the issue of bank notes by the reserve/central banks in the occupied territories, and Ohakawa et al. (1974), p. 191, for net private saving. Finance by BoJ notes in 1945 is computed up to August 1945.

**Table 2: Financing local military expenses by reserve/central banks in the occupied territories**  
(unit: million yen)

	Starting date	Intermediation between the Japanese government and a local reserve/central bank	Local reserve/central bank	Credits to the Japanese Government (million yen)			
				1943	1944	1945	total
North China	April, 1943	<b>Bank of Chosen</b> (to Overseas Funds Bank in 1945)	<b>Federal Reserve Bank of China</b>	920	4,210	52,300	57,430
Central China	August, 1942	<b>Yokohama Specie Bank</b> (to Overseas Funds Bank in 1945)	<b>Central Reserve Bank of China</b>	2,727	17,912	462,503	483,142
Southern Regions	April, 1943	<b>Southern Regions Development Bank</b> (to Overseas Funds Bank in 1945)		1,650	9,450	8,000	19,100
			subtotal	5,297	31,572	522,803	559,672
Manchuria (East-North China)	April, 1944	<b>Yokohama Specie Bank</b>	<b>Central Bank of Manchou</b>		1,400	2,000	3,400
Indochina	April, 1944	<b>Yokohama Specie Bank</b>	<b>Bank of Indochina</b>		755	496	1,251
Thailand	April, 1944	<b>Bank of Japan</b>	<b>Bank of Thailand</b>		491	670	1,161
			subtotal		2,646	3,166	5,812
			total	5,297	34,218	525,969	565,484

Source: Ministry of Finance (1955), p. 179 and p. 382.

Table 3: Wholesale price indexes in the interior, the colonies, and the occupied territories

	Tokyo	Taipei	Soeul	Xinjig	Peking/ Tianjin	Shanghai	Thailand	Saigon (Indochina)	Manila (Philippines)	Kuchin (Borneo)	Batavia (Java)	Palembang (Sumatra)	Singapore (Malaya)	Rangoon (Burma)
1936 average					100	100								
Jun-37	100	100	100	100		116								
Dec-37	101		104	100		130								
Dec-38	107	112	123	125		155								
Dec-39	131	126	151	159	261	342								
Dec-40	131	140	157	198	409	567								
Dec-41	145	146	164	208	518	1,650	100	100	100	100	100	100	100	100
Mar-42	148	148	165	210	565	1,782					102			
Jun-42	149	150	167	212	645	2,575					140			
Sep-42	150	149	169	216	618	2,935			186		139			
Dec-42	150	150	173	232	817	3,399	135	129	200	114	134	308	352	
Mar-43	153	152	179	235	1,220	4,733			245	128	150	384	405	705
Jun-43	158	159	186	238	1,184	6,556			247	141	166	432	807	900
Sep-43	160	159	187	242	1,227	8,669			437		199			1,253
Dec-43	163	168	193	254	1,382	11,066	203	169	1,196	153	227	707	1,201	1,718
Mar-44	168	170	200	262	1,504	16,320			1,976		304		2,922	2,629
Jun-44	175	179	207	281	2,156	22,923			5,154	388	492	886	4,469	3,635
Sep-44	182	181	213	303	2,799	33,491			14,084		1,279	1,279	6,471	5,765
Dec-44	185		217		7,055	113,251	360	260	14,285	827		1,698	10,766	8,707
Mar-45	192				13,643	262,150			14,285		1,752	2,253		12,700
Jun-45	219				25,480	1,457,588					2,421	3,252		30,629
Aug-45	226			438	84,840	3,898,815	692	364		4,000	3,197	3,300	35,000	185,648
annual rate from Dec. 41 to Sep. (Dec.) 44	8.6%	8.1%	10.0%	14.7%	84.7%	198.8%	53.3%	37.5%	504.4%	102.2%	152.6%	157.0%	355.5%	336.8%
annual rate from Dec. 41 to Aug. 45	12.9%			22.5%	301.7%	731.8%	69.5%	42.3%		173.5%	157.3%	159.5%	394.1%	678.9%

**Sources:** Huff and Majima (2013), pp. 955-956, for Thailand and Indochina, and Bank of Japan (1966), p. 381, for the other regions. For Xinjig (Manchuria), Peking/Tianjin, and Shanghai, the period between December 1944 and August 1945 is complemented by Minami and Makino (2014), p. 509 and p. 416.

**Table 4: Size of money finance by reserve banks and central banks  
in the occupied territories in terms of face value and PPP  
(unit: million yen)**

	1943			1944			1945			total	
	PPP	face value	at PPP	PPP	face value	at PPP	PPP	face value	at PPP	face value	at PPP
North China	45.3%	920	417	25.4%	4,210	1,068	3.0%	52,300	1,579	57,430	3,064
Central China	25.5%	2,727	695	7.1%	17,912	1,274	0.4%	462,503	1,665	483,142	3,634
Southern Regions	16.3%	1,650	269	2.5%	9,450	232	0.5%	8,000	36	19,100	537
subtotal		5,297	1,381		31,572	2,573		522,803	3,280	559,672	7,235
Manchuria				89.2%	1,400	1,248	74.1%	2,000	1,482	3,400	2,730
Indochina				49.0%	755	370	42.8%	496	212	1,251	582
Thailand				35.4%	491	174	22.5%	670	151	1,161	325
subtotal					2,646	1,792		3,166	1,845	5,812	3,637
total		5,297	1,381		34,218	4,365		525,969	5,126	565,484	10,872

**Sources:** Ministry of Finance (1955), p. 179 and p. 382, for money finance by the reserve/central banks in the occupied territories. The purchasing power parity with December 1941 a base month is computed from the wholesale price indexes reported in Table 3. For Southern regions, wholesale prices are adopted from Singapore.

**Table 5: A comparison in scale of money finance  
between by Bank of Japan and reserve/central banks in the occupied territories  
(unit: million yen and % of nominal GNE)**

	by Bank of Japan	by reserve banks in North and Central China, and Souther Regions		by central banks in Manchuria, Thailand, and Indochina		total		nominal GNE
	face value	face value	at PPP	face value	at PPP	face value	at PPP	
1943	3,117 (4.9%)	5,297 (8.3%)	1,381 (2.2%)			8,414 (13.2%)	4,498 (7.0%)	63,820
1944	7,480 (10.0%)	31,572 (42.4%)	2,573 (3.5%)	2,646 (3.6%)	1,792 (2.4%)	41,698 (56.0%)	11,845 (15.9%)	74,500
1945	24,554 (21.5%)	522,803 (456.7%)	3,280 (2.9%)	3,166 (2.8%)	1,845 (1.6%)	550,523 (480.9%)	29,680 (25.9%)	114,467
total	35,151	559,672	7,235	5,812	3,637	600,635	46,023	

**Sources:** Bank of Japan (1966), p. 193, for outstanding BoJ notes, 1945, Ohkawa et al. (1974), p. 179, for 1943 and 1944 nominal GNE of Japan, and Saito (2017) for 1945 nominal GNE of Japan. For the other data, the same as in Table 4. Money finance by the BoJ is computed as an annual increment in outstanding BoJ notes, where 1945 figure is from January to August, 1945. The number in a parenthesis is the ratio relative to nominal GNE.

**Table 6: Real balances of legal tenders and bank notes in central banks and reserve banks**  
 (unit: thousand yen for outstanding bank notes, and  
 prices, real balances, and real seigniorage standardized at 100 as of Dec. 1942 or Dec. 1943)

	Bank of Japan				Central Bank of Manchou			
	price	outstanding bank notes	real balance	real seigniorage	price	outstanding bank notes	real balance	real seigniorage
Dec-41		5,978,816				1,261,531		
Dec-42	100	7,148,685	100	100	100	1,669,631	100	100
Dec-43	109	10,266,161	132	245	109	3,011,187	165	300
Dec-44	123	17,745,992	201	518	131	5,876,854	270	538
Aug-45	151	42,300,101	393	1393	189	8,800,000	279	379

  

	Federal Reserve Bank of China				Central Reserve Bank of China				Southern Development Bank			
	price	outstanding bank notes	real balance	real seigniorage	price	outstanding bank notes	real balance	real seigniorage	price	outstanding bank notes	real balance	real seigniorage
Dec-41		963,962				237,316						
Dec-42	100	1,581,008	100	100	100	3,477,345	100	100	100	463,261	100	
Dec-43	169	3,761,583	141	209	326	19,150,328	169	149	341	1,954,807	124	100
Dec-44	864	15,840,886	116	227	3,332	139,698,667	121	112	3,059	10,622,956	75	65
Aug-45	10,384	132,603,000	81	182	114,705	2,697,231,000	68	69	9,943	19,468,219	42	20

  

	Bank of Indochina			Bank of Thailand		
	price	real balance	real seigniorage	price	real balance	real seigniorage
Dec-42	100	100		100	100	
Dec-43	131	113	100	150	111	100
Dec-44	202	99	109	267	112	155
Aug-45	282	126	154	513	105	173

**Sources:** Huff and Majima (2013), pp. 955-956, for Thailand and Indochina, and Ministry of Finance (1955), p. 337, for the other regions. Prices are adopted from Table 3. For Southern regions, wholesale prices are adopted from Singapore.



**Table 7: Impacts of the transfer to the occupation forces through central banks on macroeconomies of Manchuria, Indochina, and Thailand**  
(unit: million yen, million piastres, and million baht)

			transfer to government/ forces	relative to nominal GNE/GDP	nominal GNE/GDP
Japan (yen)	Bank of Japan	1943	3,117	4.9%	63,820
		1944	7,480	10.0%	74,500
		1945	24,554	21.5%	114,467
Manchuria (yen)	Central Bank of Manchou	1943			12,059
		1944	1,400	11.6%	
		1945	2,000		
Indochina (piastres)	Bank of Indochina	1944	755	22.1%	3,424
		1945	496	13.4%	3,711
Thailand (baht)	Bank of Thailand	1944	491	6.9%	7,119
		1945	670	5.4%	12,505

**Sources:** Huff and Majima (2013), p. 942, for nominal GDP of Indochina and Thailand, Yamamoto (1997), Table 1, for nominal national income of Manchuria, and Ohkawa et al. (1974), p. 179, for 1943 and 1944 nominal GNE of Japan, and Saito (2017) for 1945 nominal GNE of Japan. The 1943 relative ratio of Manchuria is computed from 1943 nominal national income. One unit of piaster, baht, or Manchurian yen was fixed at one unit of Japanese yen.

**Table 8: Impacts of the transfer to the occupation forces through the reserve banks in North/Central China on Chinese macroeconomy**

	million yen	million yuan	relative to hypothetical nominal GDP	
			Tianjin price	Shanghai price
1943	3,647	20,261	0.88%	0.88%
1944	22,122	122,900	1.12%	0.70%
1945	514,803	2,860,017	2.23%	0.87%

**Sources:** Minami and Makino (2014), pp. 414-416, for urban wholesale price indexes Minami and Makino (2014), p. 452, for nominal GDP. Nominal GDP of 1943, 1944, and 1945 are hypothetically constructed under the assumption that real GDP was constant in the years 1940-1945, and deflators increased as urban wholesale prices increased. As to urban wholesale price indexes, national averages are available up to 1943, and city averages are available for Tianjin and Shanghai in 1944 and 1945. An exchange rate between yuan and yen was fixed at 18 yen per 100 yuan.

**Table 9: Marshallian k and relative seigniorage for Southern Development Bank notes in Indonesia (unit: thousand guilders)**

	Jawa	Sumatra	total	nominal GDP	Marshallian k	relative seigniorage
Dec-42	56,678	25,828	82,506	4,330,250	1.91%	
Dec-43	133,770	234,690	368,460	8,849,400	4.16%	3.23%
Dec-44	665,678	797,726	1,463,404	23,517,900	6.22%	4.66%
Aug-45	1,443,866	1,349,332	2,793,198	145,778,780	1.92%	0.91%

**Sources:** Huff and Majima (2013), p. 942, for Indonesian nominal GDP, and Ministry of Finance (1955), p. 338, for outstanding Southern Development Bank notes. Marshallian k is defined as outstanding SDB notes divided by nominal GDP, while relative seigniorage is defined as an annual increment in outstanding SDB notes by nominal GDP.

**Figure 1: Issuing military scrips by the Japanese government**

<b>Bank of Japan</b>	
asset	liability
(ii) claims against the EME special account	(i) military scrips deposited by the Japanese government

**Figure 2: Financing military expenses by bilateral depositing arrangements between Bank of Chosen and Federal Reserve Bank of China**

<b>Bank of Chosen</b>		<b>Federal Reserve Bank of China</b>	
asset	liability	asset	liability
(i) payments from the EME special account	(ii) notional deposit to FRBC	(ii) notional deposit from BoC	(iii) deposit to BoC
(iv) uncollateralized credits to the Japanese government			(v) withdrawn in FRBC notes by BoC