

Confronting the Costs of War Project

War Finance Data Documentation

Version 2.0

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Introduction

This data set was initially built in order to understand how states have financed interstate wars for the last two centuries. However, its uses are far reaching as war finance affects the nature of warfare, state building, democratic accountability, and leadership survival. Moreover, the study of war finance sheds light on themes important to understanding a state's economic health such as economic growth, inflation, and the redistribution of wealth. Finally, war finance has implications for macroeconomic management such as the role of the financial community during wartime, the effect of war finance on banking and capital markets, debt creation, and the interaction between fiscal and monetary policies. It is my hope that future researchers will use this data set to add to our understanding of these themes as well as other research topics not addressed here.

Thus, the purpose of this manual is two fold. Its primary purpose is to provide a methodological discussion of issues related to the selection and construction of the data set as well as provide transparency to the collection process. The secondary purpose of this manual is to provide a “war finance dictionary.” Given that war finance has been such a neglected subject, it is my hope that anyone interested in a particular case can use this codebook as an initial guide for primary and secondary sources.

Overview of Version 2.0

The initial version of this data set was the result of several years of effort undertaken at the University of Pennsylvania as part of a dissertation project for the subsequent book, *Cash, Guns, and Power: How States Pay for Wars*. Two major updates have taken place during the summer and fall of 2013. First, additional detail was added to various data points to improve the

quality of coding decisions. Second, data was collected for various missing data points.

Descriptive statistics are featured in *How States Pay For Wars* (Cappella Zielinski 2016).

Parameters

The data set is constructed using **interstate wars listed in the Correlates of War Project (COW)**.¹ The war finance data set, which spans from **1823 to 2003**, encompasses all interstate wars in COW **over six months** whose participants are **principal belligerents**. Principal belligerents are “those states considered major decision-makers in the war, those whose contributions to the fighting force (i.e. number of troops) are sufficient to make them independent decision-makers about the course of the war” (Fazal, Fortna, Stanton, & Weisiger DATE). For example, in the Korean War, only the United States, China, North Korea, and South Korea are considered principal belligerents.² I exclude non-principal belligerents in an attempt to isolate states whose war efforts place economic stress on their economies.

Longer wars have an inherently different dynamic than short wars, as shorter wars have different revenue needs and limit the state’s war finance tool kit.³ Thus, I exclude wars less than

¹ I draw from COW v4.0.

² According to COW, other participants in the Korean War include: Thailand, the Philippines, Turkey, Australia, Greece, France, Belgium, the Netherlands, the United Kingdom, Columbia, and Canada.

³ Long wars have different revenue needs. Short wars are expenditure bursts. Leaders want to win the war; once a war begins, they want to avoid instant defeat. Therefore, their primary focus is to ensure that the military is outfitted as best as possible as fast as possible. Consequently, the initial needs of the war must be met using money that is immediately available, either using existing coffers, printing or, in some cases, debt. Once a short war turns into a long war, the needs of the state change, as does the leader’s time horizon. At war onset, leaders finance the war they expect to fight. Once the war is perceived to be a long war, the leader becomes concerned with maintaining a winning war effort while protecting the state’s economy from the negative effects of economic mobilization for a long war. The state needs renewable sources of revenue that have the least disastrous effect on the state’s economy. Second, short wars not only have different revenue needs, they also have a limited war finance tool kit. Certain forms of revenue are available immediately while other forms are not. When a state draws upon existing coffers or prints money, it does not have to wait for its bureaucracies to implement, collect, and process revenue. Thus, printing, particular forms of debt, and taxes collected at the time of transaction are immediately available, whereas direct taxes, income, and corporate taxes are collected only about once a year. For statistical purposes, I refer to wars over six months long as “long wars.” However, what matters is when a state switches policies from the expenditure burst financing method of short wars to the policy realization that the war can’t be won outright and that

six months long. There are few “long wars” in COW, as the average war is about four months long. Thus, to ensure a significant number of observations, I include wars over 180 days. Of the **95 cases in the data set**, 25 observations (i.e. belligerents or country-war) take place in the post-World War II era. Geographically, over half of the wars fought involve participants from European states, Russia, and the United States.⁴

The **unit of analysis is war finance by participant, aggregated over the entirety of a war**. War finance can be an endogenous process, as war finance in year one affects war finance in year two. Unfortunately, war finance information by country-year is not readily available for the majority of observations in the data set. To compensate for data limitations, I use country-war. I use the United States’ financing of World War I as an example: Instead of taking the percentage of World War I financed by taxation by the United States for each year—1917, 1918 and 1919 (about 30%, 25%, and 22%, respectively)—I aggregate over the entire war, of which 26.5% was paid for by taxation.⁵

While a state has a myriad of means to confront the cost of war, this data set only captures the primary means in which a state can finance war. Thus, I account for how much of the war was met by **taxation, domestic borrowing, funding from outside the state’s borders, printing, and plunder**. Moreover, I account for the **presence of borrowing and the location of borrowing—if the state borrowed from either the United States or Soviet Union**.

the war is going to last, and thus, leaders have to adapt the war financing strategy to the new reality. Each war is unique. Leaders might take a week or might take a year to come to this realization.

⁴ There are 9 African, 6 Middle Eastern, 12 Central and South American, and 18 Asian countries in the data set.

⁵ **United States’ Financing of World War I by Taxation** (in millions of dollars in current year currency)

Year	Cost of the War	War Tax Revenue	Percentage of the War Financed by War Tax Revenue
1917	\$1,361	\$409	30%
1918	\$13,079	\$3,253	24.8%
1919	\$17,821	\$3,874	21.7%
Total	\$32,428	\$7,536	26.5%

Source: Seligman, E. R. A. (1919). The Cost of The War and How it was Met. *American Economic Review* IX(December): 739–770.

A Note on the Cost of War and War Finance

This data set strives to explain how states confront the costs of fighting a war. Before we can understand “war finance,” we need to address what we are financing, for the cost of war can mean several different things. For the purposes of this data set, I only address the narrow concept of cost or what I term the **budgetary cost of the war**: the direct financial outlays to pursue military objectives. This narrower conception of the cost of war excludes many pertinent expenses. Excluded are pre-war armament programs, demobilization, occupation, or arms races. Also excluded are indirect costs to society such as veterans’ costs, the effect of loss of life on a state’s economy, or interest payments on the debt accumulated to pay for the war. While preparation and demobilization are expensive proceedings, this project is concerned with understanding the financial and political dynamics during conflict. The focus of this data set, like that of state leaders themselves, is procuring money for specific military operations within a specific theatre and for a specific duration.

War finance, therefore, is the means by which the state meets the costs of executing the war effort. It is the manner by which the state redirects or procures monetary resources to meet government outlays to continue the war.

You will notice there is no cost-of-war variable in the data set. Data limitations prevent me from confidently creating the variable. Perhaps surprisingly, there is more data available for how a war is financed rather than how much it cost. The section “Sources, Quality, and Caveats” will further address data limitations. However, I will include an example here of the difficulties of creating a cost-of-war variable. An excellent example of coding difficulty is Cambodia during the Vietnamese-Cambodian War. During this war, there was no Cambodian currency. Market prices were established by supply and demand in Vietnamese dong, Thai baht, gold, and rice (R.

R. Ross, 1987; Vickery, 1986). However, there is data on how the war was financed overall. We know that a small percentage of the Cambodian war effort was financed by domestic taxation, while the rest of the war was financed via external funding, primarily from the Chinese.⁶

Coding Rules

The data set is comprised of a combination of **discrete ordinal variables and dummy variables**. The discrete variables are captured by using an ordinal scale of 0–4:

- 0 = none of the cost of the war was met by X variable;**
- 1 = under 25% of the cost of the war was met by X variable;**
- 2 = between 25–50% of the cost of the war was met by X variable;**
- 3 = between 50–75% of the cost of war was met by X variable;**
- 4 = over 75% of the cost of the war was met by X variable.**

For various reasons that will be discussed in the following section, “Sources, Quality, and Caveats,” data limitations limit my ability to provide continuous variables for war finance.

Ordinal Variables

War Tax: A tax that is raised whose revenues are specifically earmarked for the war effort.

Domestic Taxation. This variable captures how much of the war was paid for out of domestic tax revenues. It includes revenues from war taxes and other tax revenue that was not necessarily earmarked for the war effort.

Domestic Borrowing. How much of the war was paid for by borrowing from within the state? Domestic borrowing includes all forms borrowing, ranging from a bond campaign to general public debt to banks or wealthy individuals.

⁶ For data on domestic taxation and rice production, see Twining, 1989. For data on Chinese military aid see An, 1978, p. 283; Jackson, 1978, p. 80; Morris, 1999, p. 76; Pike, 1978, pp. 11–15; R. S. Ross, 1988, pp. 107–109; *Sino-Soviet Competition in Indochina*, 1978.

Print. How much of the war was paid for by printing money? Printing occurs when the state issues non-monetized debt from its central bank.

Plunder. Did the state engage in plunder to pay for the war? Plunder occurs when goods are taken by force from the area of conflict.

Domestic War Finance. Domestic war finance is a broad variable that encompasses all domestic revenues, including but not limited to taxation, existing coffers, domestic borrowing, and printing money. It is an attempt to capture how much of the war burden was met by the state.

External Funding. Did the state use money or aid from abroad to fund its war effort? External extraction is a broad variable. It includes all forms of aid from outside a country's borders, including plunder, grants, loans, or other.

Total Borrow. How much did the state borrow to pay for the war? This includes all forms of borrowing, both domestic and from abroad.

Dummy Variables

Borrow. Did the state borrow? Here "borrow" is an expansive category of borrowing. It includes all forms of borrowing, both domestic and from abroad.

Borrow Abroad. Did the state borrow from abroad to pay for the war effort?

Borrow United States/Soviet Union. Did the state borrow from the United States or Soviet Union to pay for the war effort?

Sources, Quality, and Caveats

A careful triangulation amongst primary and secondary sources allowed me to paint a picture for a majority of observations in the data set.⁷ In general, during the interwar years, the League of Nation's statistical publications were an excellent source, particularly for the various Sino-Japanese wars. In the post-World War II era, primary sources include documents collected from the *Foreign Relations of the United States* (FRUS). During the Cold War, United States'

⁷ The concept of triangulation is borrowed from Lustick (1996). Triangulation is the construction of a background narrative of a historical event through the identification of claims made by different historians, despite their approach from difficult archival sources and/or implicit theoretic or political angles.

intelligence estimates from various agencies provide a plethora of information for the various “proxy wars.” Specifically, intelligence estimates were helpful to understand funding for the various Southeast Asian wars and Arab-Israeli wars. While primary sources are useful, secondary sources provided the core of information for the data set.

It is important to note some of the data is in the form of “numbers,” or numerical estimates of how much of a particular war was financed by a specific mean. However, other data is qualitative in nature. Data availability of the Russian and Turkish war-finance effort during the Russo-Turkish War of 1877 provides an example. Data on the Russian war effort are in “numbers.” We have an estimate of the actual amount borrowed and printed.

Since April 12, 1877,...The cost of the campaign has been enormous. In November 1877, we concluded three domestic loans for 350,000,000 paper roubles [*sic*] and one foreign loan for 93,750,000 paper roubles or 125,000,000 paper roubles. In addition to this, 285,000,000 roubles were advanced by the Imperial bank, the aggregate sum of the cost amounting to at least 800,000,000 roubles. Beckoning the expensive of the return march at 50,000,00 roubles, we have a grand total of 850,000,000 roubles, which will take 45,000,000 roubles a year in interest and sinking fund. Now as the outlay occasioned by the Imperial debt is given at 108,000,000 roubles a year in the Budget for 1877. It follows that the war has raised our debt nearly one-half...It is estimated in this country that the war has cost in one way and another about L100,000,000. (“Monetary Commercial English News,” 1878, p. 407)⁸

Just before the outbreak of the Russo-Turkish war, the notes in circulation amounted to a little over 780,000,000 rubles. During the war there was an additional issue of 417,000,000 rubles. (Karel, 1896, p. 38)

In contrast, data for Turkey’s war effort is qualitative, as shown by the data collected below. We know Turkey attempted to raise taxes. Unfortunately, the war effort hampered the state’s ability to do so. As a result, the army was forced to plunder, and the state had to borrow. However, as

⁸ For secondary sources on borrowing to finance Russia’s war with Turkey, see Crisp, 1953; Karel, 1896; Maurice, 1905, pp. 244–245.

the data is more descriptive in nature, the manner in which Turkey financed its war effort is more ambiguous.

They [Turkish Parliament] did, however, accept all the heavy expenditures required for the war, which produced a substantial deficit, and they approved increases in income, property, and animal taxes to compensate. They also approved a compulsory internal loan requiring property owners and civil servants alike to purchase government bonds according to their wealth and means. (Shaw & Shaw, p. 185)

A forced loan was voted by the Parliament before its dissolution and was to have come into operation in August; but owing to the poverty-stricken condition of the people, it was found impracticable to enforce the payment of the double taxes. (Hozier, 2005 (1878), p. 605)

If the ordinary taxes could have been possibly collected by the Turks during the campaign, they certainly need not have been embarrassed for lack of the “sinews of war,” considered the rather sweeping reductions in their payments. Not only, however, an enemy occupy their most lucrative province, but that enemy, on the 31st July, issued a decree which was to have an important bearing on the payments by those who had hitherto been Turkish tax-payers. (Hozier, 2005 (1878), p. 605)

The Turkish army was recruited solely from the Mohammedan population, Christian subjects of the Sultan were not allowed to bear arms, but paid a poll-tax in lieu of military service. It would perhaps be more accurate to say that they were compelled to take out annual licenses to carry their heads, the receipt of the tax bearing the words “The bearer is entitled to keep his head for one year.” Exemptions from service were frequent, and easily obtained by the upper classes. (Maurice, 1905, p. 14)

The Army lived almost entirely on the country it occupied. (Hozier, 2005 (1878), p. 605)

By 1876 the prosecution of the war had forced the treasury to assume an additional burden of 7.45 billion kuruş of debt... (Shaw & Shaw, p. 222)⁹

The two examples above, Russia and Turkey in the Russo-Turkish War of 1877, demonstrate the complexities of data collection. However, they also demonstrate information

⁹ Turkey also did not pay her troops and repudiated her debt to aid in the war effort: “The Turkish troops had during the twenty months received no regular pay: they were merely lodged and fed by the State, and got, but at the rarest intervals, a few piastres: yet they continued to fight with undiminished zeal, and desertions and insubordination were never heard of amongst the regular troops” (Hozier, 2005 (1878), p. 604); “Some partial explanation of the mystery was afforded by the fact that the Government was not paying official salaries” (Hozier, 2005 (1878), p. 605); “...that they payment of the foreign debt was left in abeyance” (Hozier, 2005 (1878), p. 605).

availability. To overcome data limitations and still be confident that I am correctly capturing how a state financed a war, the data set is comprised using a mix of dummy and discrete variables rather than point values. Thus, to continue with my least ambiguous example, the United States' financing of World War I, the percentage of the cost of war met by taxation was 26.5%; therefore, it is coded as a 2.

Most of the data collected is not as unambiguous as the United States' World War I experience. Typically, the data resembles the examples above describing Russia and Turkey's financing of the 1877 war effort. Consequently, difficult coding decisions must be made. I will use Turkish war finance to highlight difficult coding. We know that Turkey attempted to raise taxes. However, Russian confiscation of Turkish territory and its parliament's decision not to engage in a forced loan suggests that taxes financed a very small percentage of the war effort, less than 25%. Thus, I code taxation as a 1 for Turkey during the Russo-Turkish War of 1877.

Notes on the Format of Datafile "XXXX_2.0.csv"

The file XXXX_2.0.csv contains version 2.0 of the Interstate War Finance Data Set (1823–2003). The file is in "comma-separated variable" (comma-delimited) form, a flat text format which may also be read automatically into computer software packages such as Microsoft Excel, or read using specific commands into other programs (e.g., using the "insheet using XXXX_2.0.csv" command in Stata). The first line of the data set contains the variable names. The data set contains the following 11 variables, in order. Missing values are indicated by the value "-9". Users must ensure that their statistical analysis software takes this coding into account.

Position	Variable	Description
1	“war”	Name of the War
2	“statenum”	COW country code
3	“stateabb”	COW 3 letter country abbreviation
4	“yrbeg1”	Year of War Onset
5	“yrend1”	Year War Ended
6	“wtax”	Dummy Variable—War Tax Raised
7	“domtax”	Discrete Variable—Amount of War Financed by Taxation
8	“dombrw”	Discrete Variable—Amount of War Financed by Domestic Debt
9	“print”	Discrete Variable—Amount of War Financed by Printing
10	“domwf”	Discrete Variable—Amount of War Financed by Domestic Sources
11	“mnyabrd”	Discrete Variable—Amount of War Financed by Sources from Abroad
12	“brwyn”	Dummy Variable—The State Borrowed to Pay for the War
13	“brwabrdyn”	Dummy Variable—The State Borrowed from Abroad to Pay for the War
14	“brwsoviets”	Dummy Variable—The State Borrowed from the Soviet Union to Pay for the War
15	“brwus”	Dummy Variable—The State Borrowed from the United States to Pay for the War
16	“totalbrw”	Discrete Variable—Amount of War Financed by Debt (Domestic + Foreign)
17	“plunder”	Discrete Variable—Amount of War Financed by Plundering

War Finance from 1823 to 2003

The following section provides an overview of the various wars in the data set. I discuss how each war was financed, address any large discrepancies in the various sources, and provide bibliographic references.

FRANCO-SPANISH WAR (1823)

FRANCE

Overview:

Borrowing dominated the financing of the French war effort in the Franco-Spanish war. French war expenditures in 1823 amounted to 1,118,025,162 francs (Niles 1825, 104). According to Niles, the issue of four million rentes as well as receipts of 1,123,456,392 francs further covered the cost of the war in 1823 (Niles 1825, 104). The role of debt as a source of finance is corroborated by Lieber's 1825 *History of France*: 100 million franc loan was required in 1824 to cover the costs of 1823 (*History of France* 1825, 228).

Caveats and Concerns:

Precisely how much of the war expense was covered by debt is unclear. It is also unclear who held the debt and its overall source, whether the debt was domestic or foreign. For the purposes of this dataset a rentes is a form of borrowing as the principal is paid back overtime and may or may not include interest. For a discussion of French rentes see (Kindleberger, 167–168).

Notes:

None.

SPAIN

Overview:

Information on Spanish war finance is sparse. During the war, public expenditure increased more than receipts did (Comín 2010, 214). It appears, that borrowing financed these increased expenditures, as there was a large increase in public debt.

Caveats and Concerns:

No exact figure exists for Spanish war expenditures, and other than the fact that costs exceeded revenues, little is known about how the war was financed.

Notes:

None.

RUSSO-TURKISH WAR (1828–1829)

RUSSIA

Overview:

Russia's war costs are estimated between 58 million to 100 million rubles (Kagan 1999, 107–109; Moltke 1854, 410). This cost was largely funded domestically through loans and the printing of paper rubles. Foreign war finance also appears to have played a minor role. Russia was able to secure some loans from Holland (Kagan 1999, 97). There is also some evidence that the Russian army plundered and foraged but to what extent is not clear (see Chesney 1854 and Kagan 1999).

Caveats and Concerns:

There is some discrepancy in terms of how much the war exactly cost.

Notes:

For information on war costs and finance, see Kagan (1999, 96–97, 107–109), Chesney (1854), and Moltke (1854, 410). For more information on foreign borrowing, see Chesney (1854, 195) and Kagan (1999, 97). For more on domestic borrowing and money printing, see Chesney (1854, 76). For more on plunder, see Chesney (1854, 102); and Kagan (1999, 105).

TURKEY**Overview:**

Taxation played a large role in paying for Turkey's involvement in the Russo-Turkish War. According to Shaw and Shaw, "excise taxes imposed on shops and markets to finance the cost of the new army as well as the war against Russia" (1977, 46). Household taxes were also imposed (Aksan 2007, 239). Significant steps were also taken to organize the army's financial system, including the development of a separate military treasury—the revenues of which included timars and property confiscated from Janissaries (Shaw and Shaw 1977, 46). The confiscation of the estates of "enemies" was a key source of war finance (Aksan 2007, 282–283). Egypt also supported Turkey's efforts by sending funds—this despite the fact that Turkey had actually requested troops instead (Aksan 2007, 267).

Caveats and Concerns:

There are no exact figures concerning the cost of the war to Turkey or the exact contributions of various forms of finance to the overall effort.

Notes:

For more information on war costs and finance, see Aksan (2007, 282–283).

MEXICAN-AMERICAN WAR (1846–1848)**MEXICO****Overview of Mexico:**

To finance the war with the United States, Mexico relied primarily on revenue from domestic and foreign loans. It is estimated that domestic loans totaled between 3.291 million and 3.5 million pesos (Cummings 2009, Chapter 5). The majority of loans were obtained through church and state loans and other forms of individual citizen debt. Records show that 1 million pesos was raised through forced contributions from 65 Mexican firms and individuals on the basis of a government decree requiring wealthy individuals to purchase drafts from the government

(Cummings 2009, 96; Tenenbaum 1986, 80–81). About 264,000 pesos were obtained from reduced wages to be paid back after the war and about 3.85 million pesos through a combination of church loans and short-term bonds covered by the Church (Cummings 2009, Chapter 5). Foreign loans entailed British bonds at an estimated value of \$800,000 (J. H. Smith 1919, 254–255). Supplementing domestic and foreign loans was plunder. Taxation does not seem to have constituted a significant source of revenue to finance the Mexican war effort.

Caveats and Concerns:

The overall cost of war cannot be thoroughly documented due to the unaccounted-for financing of the war through plunder. The available sources show a discrepancy of 0.209 million pesos in the total estimates of domestic loans. The discrepancy may be attributed to incomplete loan records on account of the state, clergy, or individual recordkeeping. On the other hand, there is only one available source capturing foreign borrowing that cannot be cross verified against other available records.

Notes:

For an estimate of the overall cost of war see Mead (2002, 68). For further discussion on domestic forms of borrowing refer to Cummings (2009) and Tenenbaum (1986). For more information on foreign loans see J. H. Smith (1919, 254–255). Specific information on forced domestic government loans can be found in Cummings (2009, Chapter 5) and Tenenbaum (1986, 80–81). For further discussion on church borrowing and individual door-to-door fundraising consult Cummings (2009, 101). For more information on plunder through seizing silver from mines owned by foreigners and requisitioned from the surrounding territory see Cummings (2009, 99).

UNITED STATES

Overview:

The overall cost of war for the United States is reported between \$63.6 million (J. H. Smith 1919, 266) and \$71 million (Studenski and Krooss 1952, 123). The war was financed primarily through bank loans, increase in tax revenue, and gains from plunder. Studenski and Krooss reported that about \$49 million was raised by selling 10- and 20-year bonds with 1-year treasury notes at \$33.8 million, supplementing the \$49 million (Studenski and Krooss 1952, 123). Gold discoveries in California in 1848 were reported as being instrumental in creating bank credit to finance business activity.

Caveats and Concerns:

There are some discrepancies in the specific figures reporting the overall cost of war, but these do not appear to affect the overall war finance picture. Specifically, the CRS reports estimate total cost of war for the United States at \$71 million (Daggett 2008), which is \$7.4 million higher than the total reported in (J. H. Smith 1919, 266). The overall borrowing estimates also vary. While J. H. Smith (1919, 266) reported the amount of \$49 million as revenue obtained from selling both bonds and treasury notes, Studenski and Krooss (1952, 123) reported the same amount, \$49.2 million, as covering only the 10- and 20-year bonds and suggested an additional \$33.8 million in 1-year Treasury notes. In addition, Cummings (2009) mentioned “three large loans totaling \$49 million,” but did not reference the \$33.8 million reported in Studenski and Krooss (1952, 123). This discrepancy could be a result of a reporting method and the use of

categorization of loans, bonds, and notes. The total of borrowed \$82.8 million through bonds and notes (Studenski and Krooss 1952, 123) does not align with the estimated overall cost of war of \$71 million at the high end, as the amount in loans alone (not accounting for tax revenue or plunder) would exceed this estimate by about \$10 million.

Notes:

For further discussion on general cost of war, see J. H. Smith (1919, 266) and Studenski and Krooss (1952, 123). For particular forms of war financing, consult Cummings (2009), J. H. Smith (1919), and Studenski and Krooss (1952). Specific references on borrowing through treasury notes and bonds can be found in Studenski and Krooss (1952, 123–124) and Cummings (2009). For discussion on tax revenue, see J. H. Smith (1919, 255), Studenski and Krooss (1952, 123), and Goldin (1980). Further information on plunder can be found in Cummings (2009, 6–10).

FIRST SCHLESWIG-HOLSTEIN WAR (1848)

DENMARK

Overview:

Denmark's military intervention in the Schleswig and Holstein duchies was largely paid for domestically out of the state's coffers. The Danish budget ran a surplus in the 1848 fiscal year, which coincides with the months of conflict ("The Financial Condition of the Continental States: Denmark" 1851, 634). The surplus suggests that the government was able to absorb a great deal of the war's cost through the existing revenue structure. The Danish government also used domestic funding strategies like the issuance of exchequer bills and specie dollars to raise additional funds (Burke 1849, 350; Beatty 1849, 110). While there is some indication that money was borrowed, it is not clear what the source of this credit was. When hostilities were renewed in '49 and '50, money was borrowed from the Bank of Copenhagen and some bonds were floated in London (Evans 1850, 21).

Caveats and Concerns:

The budgetary figures for 1848 appear to contradict the war costs. Svendsen (2007) states that "The Danish army had expenses for nearly 13 million RBD in 1848" and that "Denmark reported their total expense as 49.7 million RBD (Rigsbankdaler)" (Svendsen 2007, 152). These figures are problematic because (a) it is unclear how the 1848 Danish budget could allow for an army's expense of 13,000,000 RBD when the total budgetary expenditure of that year was 16,686,502 RBD. It would be difficult to assume that the government operated on a budget of slightly more than 3,500,000 RBD when in 1837 it had a total expenditure of about 14,500,000 RBD (see Macgregor 1844, 196–197; Fenn 1854, 151–153). This may mean that certain war-related expenses were not included in the annual budget. If this is so, then (b) this poses problems for Svendsen's total-cost figure, since an extra-budgetary accounting of the costs of war would make it difficult to know if the figure he is reporting represents the total expense for the series of conflicts revolving around the Schleswig and Holstein duchies (from 1848–1851), also known as the "Three Years' War," or if this really is the extra-budgetary cost of operations in 1848. There are also conflicting accounts as to how much public debt was accrued during the years of conflict (see Fenn 1854, 151–153; "The Financial Condition of the Continental States: Denmark" 1851,

634). Despite these inconsistencies, the general war finance structure is the same.

Notes:

For additional reading on pre-war Danish budget, see Macgregor (1844, 196–197). For 1848 budgetary surplus, see “The Financial Condition of the Continental States: Denmark” (1851, 634). For information on the issuance of exchequer bill and specie dollars, see Burke (1849, 350) and Beatty (1849, 110). For more on sources of borrowing, see Beatty (1849, 110), Fenn (1854, 151–153), and Evans (1850, 21).

GERMANY

Overview:

At the time of the First Schleswig-Holstein War, Germany was a confederation and, thus, there is therefore no estimate of the total military expense. The Schleswig-Holstein community received support from Germany, but still used a large part of its resources for the war effort (Svendsen 2007, 152). There is evidence that taxes were raised as “the Schleswig Holstein estate owners complained over the increased taxes as they were funding the bulk of the war effort” (Svendsen 2007, 153). Plunder also appears to be to have played a large part in financing the war effort. When Rendsburg was captured, the Schleswig Holsteiners also captured the stored Danish military funds there, which came to about 2.5 million RBD. This probably only covered part of the Schleswig-Holstein expenses for the first year” (Svendsen 2007, 152). Furthermore, “After the move into Jutland, General Wrangel demanded that the local populations supply his army with provisions. The burden of this was onerous and was only possible for a short time at each place; therefore the task of patrols was to collect provisions, e.g., a force of two battalions and two squadrons reached the towns of Aarhus and Horsens where they succeeded, by taking the local prefect as hostage in collecting provisions at a value of 40,000 Rigsbankdaler. After the initial collection of goods and after Wrangel had been ordered to leave Jutland he decided on 18 May to collect a special war tax as compensation for the losses which the German society had endured due to the naval blockade. The tax amounted to two million species (equivalent to four million Rigsbankdaler). Although the war tax was announced it was never collected. Additionally the Schleswig Holstein army was ordered to collect 450 horses. The Danish local authorities resisted this but the Schleswig Hostein soldiers succeeded in collecting 346 horses” (Svendsen 2007, 67–68)

Caveats and Concerns:

Given the financial disaggregation of the German confederation, it is hard to have a clear picture of the sources of war finance. Furthermore, the extent to which the war was paid for by plunder versus taxation is unclear. There appears to be no evidence of borrowing.

Notes:

None.

LA PLATA WAR (1851–1852)

ARGENTINA

Overview:

Argentina used a variety of methods to finance the La Plata War. There was an attempt to implement a capital tax, though it never succeeded (Rock 1987, 61). Land rents were successfully implemented but never made a significant impact financing the war (Alemann 1989, 99). As a result of these failed attempts, the government resorted to printing as the primary means of war finance. Haimann reports that 200 million pesos were printed to cover the costs of the war that was associated with significant currency devaluation (Haimann 2013, 2). Edwards reports that the Argentine peso was devalued by 40% in 1851 after several previous significant devaluations before the war (Edwards 2009, 17).

Caveats and Concerns:

No figure exists concerning the exact cost of the war to Argentina. Likewise, the exact figures raised by land rents/capital taxes remain unknown. In addition, while the printing of pesos is associated with meeting the costs of war, there are conflicting reports as to when the actual printing took place.

Notes:

For additional reading on Argentine war finance efforts, see Centeno (1997).

BRAZIL

Overview:

One source reports that the war cost Brazil “no less than \$5,000,000” (“Financial Condition of Brazil,” 1855, 108). Foreign loans dominated Brazilian war finance. Brazil borrowed L1.04 million loan through N. M. Rothschild in 1851 (Ferguson 1999) and another £1,035,100 loan in 1852 (“Financial Condition of Brazil,” 1855, 108). Britain also reported that Brazil was borrowing heavily from the British government as well (McLean 1995, 181). Taxes, however, were not a significant source of revenue for the Brazilian government. “Taxes on wealth and production contributed less than 4% of ordinary revenue even during the war years” (Centeno 1997, 1578). The overall effect of the war on Brazilian finance was quite negative, cumulating in 50% devaluation and a doubling in the amount of Reais available (Centeno 1997, 1578).

Caveats and Concerns:

The printing of Reais came after the war’s end, so we can only speculate that the printing came as a result of the war; it could also have been due to the global economic downturn or a postwar economic depression. Also, the precise amount borrowed from Britain is unknown, as is whether or not Brazil borrowed from other countries as well, including sympathetic Argentines (see Furtado 2000).

Notes:

For more on domestic financing efforts, see Buescu (1974, 89–91) and Cavalcanti (1989, 326). For more on printing money, see Cardoso (1992, 105), Badman (1988, 140), and Nogueira (1988, 313).

CRIMEAN WAR (1853–1856)

UNITED KINGDOM

Overview:

The total cost of war has been reported at £69.28 million on the low end and at £77.6 million at the high end (Buxton 1888). The two primary forms of war finance were secured through taxation with estimates ranging from 25% (Anderson 1963, 318) to 47.4% (Daunton 2001, 124), and government loans reported to comprise 52.6% (Daunton 2001, 124) to 75% (Anderson 1963, 318) of general war finance. Another source of revenue for the government came from gradual increases of the income tax and the introduction of indirect taxation of spirits, malt, and sugar. Income taxes were raised immediately at the onset of war from 7% to 10.5% and later reached 14%, which was maintained for the duration of the war (Buxton 1888, 151). In terms of war financing philosophy, the policy of Mr. Gladstone as a chancellor of the exchequer from 1853–1855 relied more heavily on taxation, while his successor Sir G. Lewis placed additional emphasis on raising money through government loans.

Caveats and Concerns:

The reported numbers for the total cost of war for the UK vary slightly but fall around the £70-million mark. The variation can be attributed to the accounting methodology. One prevailing approach in determining the total cost of war seems to take the difference between the total government expenditures at the end of the war and those before the war. As Buxton cites: “Sir George Lewis estimated the total cost of the war at £77,600,000. He arrived at this result by comparing the total expenditure of the three years—1854 to 1856—the last year including also expenditure in the nature of war expenditures—with that of the preceding three years, and assuming that the difference of cost was due to the war” (Buxton 1888). This approach, however, tends to overestimate the cost of war by making a *ceteris paribus* assumption for the war years. The more accurate estimate seems to arise from the more “bottom-up” approach that adds actual military expenses: “...as Mr. Chisholm truly points out, only the expenditure on the army and navy should be taken into account . . . this estimate of the cost of war—the total of which is £69,277,000” (Buxton 1888).

Notes:

For further discussion on general cost of war and war finance, see Anderson (1967, 201), Hirst (1915, 297), and Buxton (1888, 149). Across the board, the most consistent reference to the total cost of war for the UK is just over £70 million. For more detailed discussion on the ratio of revenue obtained from taxation vs. through loans, consult Anderson (1963, 318) and Daunton (2001, 124). Anderson provides citations that have loans accounting for 2/3 of the total war finance: “...[Earl Gray] took £49,047,522 as the cost of the war to [March 1856], and gave £17,045,030 as the amount raised by taxation and £33,659,000 as that raised by loans” (Anderson 1963, 318). Daunton reports a slightly more balanced ratio with taxation accounting for 47.4% of the war cost and loans for 52.6%. For more detail regarding taxation, see Buxton (1888, 151). For more information on loans under Sir G. Lewis, consult Anderson (1963, 317).

FRANCE

Overview:

Hirst estimated that the total cost of war for France at 1,650,000,000 francs (Hirst 1915, 244–245). The prevailing method of financing the war consisted of public subscription loans totaling 1,538,000,000 francs (Hirst 1915, 244–245). This war finance method came with a unique set of problems: “Loans were generally much oversubscribed by speculators and the policy certainly had the effect of disseminating ‘rents’ among the French people. In 1830 the number of rentiers

was 125,000; in 1869, it had risen to 1,254,000, and in 1881 to 4,000,000” (Hirst 1915, 244–245). There seems to be no record of substantial financing of the war through taxation, foreign borrowing, or plunder.

Caveats and Concerns:

There is variation reported in how much the war cost. Some reports estimate the total cost of war for France at £127.9 million (Badem 2010, 299) while others report an amount of 1,650,000,000 francs (Hirst 1915, 244–245).

Notes:

For further discussion on the cost of war, see Hirst (1915, 244–245) and Badem (2010, 299). For more information on war financing through public subscription loans, consult Hirst (1915, 244–245).

RUSSIA

Overview:

Russia relied on a number of financing schemes for the war, which is reported to have cost £160 million (World Affairs Institute 1869, 119). Internal borrowing did not seem to constitute a major source of revenue for the Russian government, as internal loans were not in wide use before the 1880s. Overall, significant revenue was obtained voluntary public and church contributions to the Russian government. Raising revenue from taxation proved problematic. The taxation system, which relied on the “soul” tax, the salt monopoly, and the tariff, was very archaic and did not provide significant revenue for the government (Kipp 1975, 449). Lastly, the Russian war effort was also supported through plunder. When Russia claimed possession of Moldavia and Wallachia, it was able to divert supplies from these provinces towards the war effort.

Caveats and Concerns:

None.

Notes:

For discussion on general war finance, see Pintner (1959, 85–87), Kelly (1854, 464–465), Badem (2010, 299), and World Affairs Institute (1868, 119). For more detailed description of the tax structure and the economic backwardness of Russian national economic system, refer to Kipp (1975, 437–459). For further information on plunder from abroad, consult Chesney (1854, 286). For a discussion of the effects of war finance, particularly inflation, see Pintner (1959, 85) and Crisp (1953, 156).

TURKEY

Overview:

The total cost of war to Turkey is reported at £17.3 million (Badem 2010, 299). There are some reports that put the cost of war at £11.16 million for the period from May 1853 to September 1855 and at £14.26 million for the period from March 1853 to March 1856 (Badem 2010, 296). The financing scheme for the war was supported by an increase in state revenues (from 948.77 million piastres to 1,121.7 million piastres) (Badem 2010, 298, Table 2). This increase was sustained most notably through considerable increases in non-budget revenues as well as in their

share in total state revenues. This non-budgetary revenue was raised through a number of financing schemes, namely a special tax in the form of donations, internal borrowing from the Galata *sarrafs*, bonds or share certificates (*esham-l mumtaze*) issued on Istanbul's customs revenues, and two large foreign loans totaling £7.5 million (Badem 2010, 297). However, foreign loans from Great Britain and France became problematic soon after the powers declared war against Russia, driving down the issue prices of all loans. It is speculated that it was also for this reason that Rothschild gave up the £5 million loan he issued in 1855 (Badem 2010, 309–310). It was also reported that the Turkish people donated money, jewelry, or horses and men, troops, and ships rushed from some of the neighboring countries.

Caveats and Concerns:

The reported estimate of the total cost of war is considerably smaller than that of other belligerents. This could be explained by the fact that “in the middle of the nineteenth century, the Ottoman bureaucracy did not possess any economic theory or idea going beyond the immediate necessities of financing the state apparatus...” (Badem 2010, 288), potentially leaving the support for the war effort largely on donations and foreign loans. In lieu of this, it is also questionable whether all the donations were included in the reported total cost of war and whether the total cost may be underreported. On the other hand, “if we accept the above mentioned figure of 14.26 million pounds as total war expenses, then we must conclude that approximately half of the actual Ottoman war expenditures was financed by foreign loans” (Badem 2010).

Notes:

For more information on the total cost of war, see Badem (2010, 296–299). For a general war finance ideology of the 19th-century Ottoman bureaucracy, consult Badem (2010, 288). For further discussion on non-budgetary revenues, see Badem (2010, 310); on foreign loans, see Badem (2010, 297); on fear of foreign borrowing, see Badem (2010, 306); on difficulty in foreign loans, see Badem (2010, 309–310); and on Rothschild's loan, see Ferguson (1999, 76). For more information on the benefits of war tax to the merchants and shopkeepers, consult Badem (2010, 300).

FRANCO-MEXICAN WAR (1862–1867)

FRANCE

Overview:

France primarily financed its efforts in Mexico through loans. One source notes that the French debt increased by 129 million francs “mainly owing to the Crimean, Mexican, and Italian Wars, to the undertaking of huge public works and the necessity of meeting budget deficits” (Hirst 1915, 245). France also issued Mexican bonds on the Paris stock market known as “petits bleus,” the revenues from which were used to cover the costs of war (Topik 2000, 718).

Caveats and Concerns:

No exact figure exists for the total cost of the French war effort. And even though the public debt rose, it is difficult to determine how much of that rise can be attributed to war, let alone the Franco-Mexican War among all the other wars France was engaged in at the time. And while revenues

from the “petits bleus” financed the war, we do not know exactly how much money was raised from these bonds.

Notes:

None.

MEXICO

Overview:

Mexico’s involvement in the Franco-Mexican war was financed through a variety of means, including domestic and foreign loans and printing money. Though no exact figure for the cost of the war exists, data from 1867, the last year of the war, shows that the government spent \$16,500,000—of which the Ministry of War spent 40%, or about \$6,600,000 (López Camarra 1967, 171). That same year, Mexico’s debt amounted to \$80,000,000 internally and \$85,000,000 externally (López Camarra 1967, 172), indicative of French-born Finance Minister Jose Yves Limantour’s to attract European investment (Topik 2000, 25) as well as the exorbitant interest rates the Mexican government offered to domestic lenders (Centeno 1997, 1585). The United States also offered loans to Mexico, although Congress ultimately rejected them due to the Civil War (U.S. Department of State). The country also printed large amounts of money: 7,000 pesos in 1865, and increasing amounts in 1866, culminating in the introduction of 1,000 peso notes in 1867 (Bazant 1968, 178).

Caveats and Concerns:

Though a figure exists for the cost of the war in 1867, its last year, a cumulative figure would allow us to better understand the relative importance of each financing technique. Specifically, the extent to which foreign finance was used to support Mexico’s efforts is unknown. Also, there are conflicting reports about whether or not American investors financed the war despite Congress’ decision not to do so (Topik 2000, 31). Furthermore, beyond the 1865 printing, it is unknown exactly how much money the Mexican Treasury printed in each subsequent emission. The accounts of French financing also remain unclear and distorted, since France was Mexico’s opponent in the conflict.

Notes:

For more on printing money and domestic loans, see Centeno (1997, 1578). For more on printing money, see Bazant (1968, 178). For more on domestic loans, see López Cámara (1967, 171–72) and López Gallo (1967, 98). For more on foreign financing, see Topik (2000, 25, 31).

LOPEZ WAR (1864–1870)

(Also known as the Paraguayan War and War of Triple Alliance)

BRAZIL

Overview:

The cost of the Lopez War to Brazil has been estimated at £30,610,000 (1873). Taxation played a small role in war finance, with tax revenues representing “less than 4%” of overall revenues (Cavalcanti 1989, 326). Loans were reported to cover 12% of the country’s war costs (Doratioto 1998). The Rothschilds loaned Brazil £3,855,307 in 1865 and £6,363,613 in 1867 (McLynn

1984, 81). Britain also extended a direct loan to Brazil (Rippy 1959, 30). Plunder was also a part of the Brazilian strategy (McLynn 1984, 97), as was printing money (Centeno 2002, 133).

Caveats and Concerns:

There appears to be disagreement over how much the Lopez War cost Brazil. The figure provided here is a conservative one from that period. More recent accounts (McLynn 1984, 90) suggest that the overall cost could have been much higher based on known costs of various specific elements. And while British loans to Brazil (public and private) are well documented, there is less information available concerning how much money was printed.

Notes:

For more on foreign borrowing, see Centeno (2002, 132–134), Penalba (1982, 468), Abente (1987, 59), C. Shaw (2005, 7), and Whigham (1991, 84). For more on the total cost of war, see McLynn (1984, 90–97).

ARGENTINA

Overview:

It is estimated that the Lopez War cost Argentina £9,000,000 from 1862–1866 (McLynn 1984, 90). Like Brazil, much of this was raised via foreign loans, including two loans of a million pounds each from Brazil in 1865 and 1866 (McLynn 1984, 90), and loans from British bankers, including a £1,982,000 loan from Barrings in 1868 (McLynn 1984, 91). About one-fourth of Argentina's war costs were covered with private British loans (McLynn 1984, 91). Beyond this, there was little domestic borrowing, though there were some direct loans of about £14,000,000 directly from the British government (Penalba 1982, 474).

Caveats and Concerns:

While the cost of this war is relatively well documented, the involvement of Brazilians in financing Argentina's efforts is uncertain. Though two loans are officially noted, it is likely that there are many more that remained secret due to the nature of the conflict (Whigham 1984, 85). The loans from Britain, however, are extensively noted and in little question.

Notes:

For more on foreign borrowing, see Platt (1983, 34–38), Abente (1987, 59), and Whigham (1991, 84).

PARAGUAY

Overview:

Printing provided the basis for Paraguayan war finance, supplemented by a foreign loan. When the war broke out, Paraguayan President Lopez attempted to pay for the war through the selling of yerba mate and loans guaranteed (the Paraguayan Congress authorized a loan of 25,000,000 pesos) by yerba and land revenues. This strategy failed due to the increasingly effective blockade of the Parana River, the decrease in yerba harvesting, and the consumption of yerba by troops (Reber 1999, 23). At the same time, the president attempted to raise £200,000 sterling on the money markets of Buenos Aires but found no buyers. The republic now had to depend solely on its internal financial reserves, which included property confiscated from the president's political rivals and seized from enemy nationals. Paraguay turned to paper emission of

2,900,000 pesos in March 1865, more than doubling the amount of paper pesos in circulation. In the same month, Solano Lopez decreed that all government purchases would be paid solely in paper currency, rather than one-third in specie and two-thirds in paper as in the past

Caveats and Concerns:

None.

Notes:

For more on foreign borrowing, see Leuchars (2002, 159). For a discussion on the cost of war see Martin (1877, 499). For a broad discussion on war finance, see Whigham (2002, 247) and Centeno (2002, 126)

SPANISH-CHILEAN WAR (1865–1856)

SPAIN

Overview:

No information was found concerning Spain's financing of its involvement in the Spanish-Chilean War.

CHILE

Overview:

While the cost of the war to Chile is unknown, it is known that Chile financed its efforts primarily through natural resources and foreign borrowing. A *New York Times* article from the period suggests that because Chile could not print bills and bonds, it was forced to borrow significant sums from Brazil (*New York Times*, 12 March 1866). Taxes were also not a significant part of the war finance formula (Centeno 1997, 1578).

Notes:

For more on natural resources, see Tucker (2009).

FRANCO-PRUSSIAN WAR (1870–1871)

FRANCE

Overview:

At the beginning of the war, France had recently filled its coffers with a major loan in 1868 (Fenn 1898, 329). Despite this surplus of funds, France financed its military through a series of domestic loans and at least one foreign loan. Fenn (1898) and Griffin (1904) identify four loans, and they both indicate that the J. P. Morgan & Co., under the authority of the French government, issued some of these bonds to be sold in both England and France respectively. They both also indicate that some funds were either borrowed or requisitioned from the city of Paris (Rand 1903, 327–328; Giffen 1904, 61). The government also received additional support from other individuals and towns. Printing francs also offset the cost of war (Bonnet 1976, 3–4).

Caveats and Concerns:

Since the war only lasted 10 months, there is a wide range of interpretations as to what actually counts as war cost. This figure is further complicated by the fact that (a) costs are reported in

different currencies, and (b) some estimates do not specify whether the post-war indemnity payment to Germany is included in the total cost of war figure. For example, Bonnet (1976) put the war cost figure at \$1,857,776,400 (3–4). Adams (1887) estimated that 11,471,000,000 francs were spent (54). Crammond (1915) estimated that £507,000,000 were spent (361–362), which is not too far off of Bush’s (1871) estimate of £550,000,000 (51). Neither of these indicates whether these sums include the war indemnity paid to Germany. Fenn (1898) reported that £371,515,280 was spend on the war, £200,000,000 of which went to the German indemnity settlement; Rand (1903), on the other hand, estimated the war cost £416,000,000, which includes interest on loans and £224,478,000 in sums paid to Germany (327–328). Also, there is some discrepancy as to whether the money collected from the city of Paris was “requisitioned” or “borrowed” (see Rand 1903, 327–328; Giffen 1904, 61); it is clear what financial entity represented the city of Paris. It should also be pointed out that the reported sums of the French loans didn’t always add up. There is some discrepancy between the sums of the four loans provided by Fenn (1898) and Giffen (1903). In any case, the type of funding remains the same.

Notes:

For more information on general finance and war costs, see Giffen (1904, 30), Crammond (1910, 227), Bloch (1899, 131), Crammond (1915, 361–362), Adams (1887, 54), Bush (1871, 51, 56–57), Fenn (1898, 330, 338), and Rand (1903, 327–328). For more on printing, see Bonnet (1976, 3–4). For more on domestic borrowing, see Fenn (1898, 329, 331) and Rand (1903, 327–328). For information on foreign borrowing, see Fenn (1898, 331) and Rand (1903, 327–328). For information on general borrowing, see Bush (1871, 80) and Giffen (1904, 61).

GERMANY

Overview:

The cost of this war may have been upwards of £60,000,000 (Giffen 1904, 30). This was funded, for the most part, domestically, though existing coffers, loans, issuing treasury bills and bonds, and plunder (Giffen 1904).

Caveats and Concerns:

Giffen provided what may be an inflated war cost figure. This is part due to the fact that Germany made a profit from the war stemming from the indemnity payment levied against France at the war’s end, as well as the acquisition of French territory, Alsace and Lorraine (Rand 1903, 327–328). In addition to this, the cost of war figure is difficult to calculate given that the German states and Prussia each contributed to war finance by local funding mechanisms. Also, it is not totally clear what the sources of Germany’s war time loans were.

Notes:

For information on war finance, see Crammond (1910, 228) and Griffen (1904, 11, 33). For information on treasury bills, bonds, and loans, see Griffen (1904). For information on plunder, see Giffen (1904, 8).

RUSSO-TURKISH WAR (1877–1878)

RUSSIA

Overview:

Russia spent £130,000,000 on the war against Turkey (Appleton 1886, 17; Plunkett 1879, 125–147). The war was largely funded domestically, though some foreign loans were made. Domestic funding strategies included: stopping the sale of specie in order to free up treasury funds to pay for government expenditures, printing millions of paper rubles, taking out at least three Oriental loans, and the purchasing of bills of exchange on the St. Petersburg bourse (Bierstadt 1883, 105–106). Foreign loans were granted from German, Dutch, and French lenders (Bierstadt 1883, 105–106).

Caveats and Concerns:

There is some variability in terms of reported war costs. Crammond (1915) estimated a total expenditure of £102,000,000 (361–362); Appleton (1886) estimated that £130,000,000 was spent (17); Plunkett (1879) estimated war costs as being over £130,000,000 (125–147); Lawson (1912) put the total cost at £153,628,000 (33); and, at the higher end, Bloch (1899) claimed the war cost £161,309,497, though this appears to include military expenditure from 1876 to 1880 (131). Despite these minor differences, the funding structure remains the same.

Notes:

For more information on general Russian finance and war costs, see Bloch (1899, 131), Crammond (1915, 361–362), Appleton (1886, 17), Bierstadt (1883, 105–106), Plunkett (1879, 114–125), Hirst (1915, 298), Crisp (1953, 156), Lawson (1912, 33), and Maurice (1905, 244–245). For more on stopping the sale of specie, see Bierstadt (1883, 105–106). For more information on printing rubles, see Karel (1896, 38), Plunkett (1879, 125–147), and Bierstadt (1883, 105–106). For more information on domestic loans and purchasing bills of exchange, see “Monetary Commercial English News” (1878, 407), Plunkett (1879, 125–147), and Bierstadt (1883, 105–106). For more on foreign borrowing, see “Monetary Commercial English News” (1878, 407), Plunkett (1879, 125–147), and Bierstadt (1883, 105–106). For more on general war-related borrowing, see Crisp (1953, 156) and “Monetary Commercial English News” (1878, 407).

TURKEY

Overview:

The Russo-Turkish War cost Turkey about 7.45 billion kurus and resulted in a substantial deficit for the country despite a rise in income, property, and animal taxes and a domestic sale of government bonds (Shaw and Shaw 1977, 185, 222). These efforts, especially the taxes, did not come easily given the extreme poverty common in Turkey at the time (Hozier 2005, 605). A more creative solution came from a “poll tax” levied against Christian Turks, who were not required to serve in the all-Muslim Turkish army (Maurice 1915, 104). Soldiers in the army, however, were not paid. In regards to plunder the Army lived almost entirely on the country it occupied (Hozier 2005 (1878), 605)

Caveats and Concerns:

The exact amount raised by bond sales and taxes is unknown. Also, there is some evidence that Turkey borrowed from abroad, though few additional details are available (See Hozier 2005, 605).

Notes:

For more on Turkish war finance, see Hozier (2005).

PACIFIC WAR (1879–1883)

CHILE

Overview:

Chile attempted to use taxes as a key element to support its role in the Pacific War. In 1880, facing declining government revenues, it began charging an export duty of 2.5 shillings per centum weight (Sicotte et al. 2009). The country also began charging an income tax during the war (Slater 1979, 98). Chile also saw the price of its foreign bonds on American and European markets increase with its military successes, contributing significant funds to the war effort (Sicotte et al. 2009). Chile's dominance in the war also allowed it to control the disputed territory of Tarapacá, which allowed it to profit from exports of guano and nitrates (Sicotte et al. 2009). Some domestic loans were used, but the printing of paper money played a more important role (Sicotte et al. 2009). Citizens also made direct donations to support the military (Sater 1973, 140–141), and there was ongoing plunder throughout the war (Farcau 1996, 152; Mason 1883, 66).

Caveats and Concerns:

There is some disagreement about how much the Pacific War cost Chile (Farcau 1996, 194; Edwards 1900, 10, 15). Furthermore, it remains unclear just how much taxes actually supported the war; although many taxes were enacted, some sources suggest that government revenues continued to decline. In particular, the effectiveness of the income tax is in question (Sater 1986, 131). Likewise, it is difficult to determine the impact of informal strategies such as donations and looting, records do not exist concerning the sale of natural resources, and there are no figures for the amount of money printed or borrowed domestically.

Notes:

For more on citizen donations, see Sater (1973, 140–141). For more on taxes, see Farcau (1996, 152), Centeno (1997, 1578), Sicotte et al. (2009), and Slater (1979, 97–98). For more on foreign borrowing, see Farcau (2000, 80). For more on printing, see Farcau (1996, 194) and Sicotte et al. (2009). For more on natural resources, see Sicotte et al. (2009).

PERU

Overview:

Peru had significant difficulty financing its efforts in the Pacific War. Efforts to raise an internal loan of 10 million soles resulted in only 1 million soles (Bonilla 1978, 99). Similarly, because Peru depended so heavily on guano/nitrate exports to raise revenue before the war, the loss of resource-rich territories significantly decreased Peruvian revenues (Sicotte et al. 2009). There was, however, some success in the levying an export tax on sugar. Peru also had significant difficulty raising money abroad once it became clear that the country would lose the war (Sicotte et al. 2009). After the war, the only way the government could resolve its debts was to allow sovereign debt holders to own the country's railroads (Sicotte et al. 2009). As a result of these difficulties, Peru's only choice was to print money; this accounted for 25–30% of revenues in 1878–1879. Peru also received donations from its citizens (Mason 1883, 48) and may have engaged in plunder (Sater 2007, 79).

Caveats and Concerns:

As one source noted, “Reliable estimates for Peruvian revenues from 1881 to 1883 are not available, because of political chaos, and the Chilean occupation of Lima” (Sicotte et al. 2009). It is likely that this chaos makes it impossible to determine how much the war cost Peru and precisely how the country financed its entry into the war. Specific questions remain over what taxes were levied and how much revenue they raised.

Notes:

For more on donations, see Mason (1883, 48). For more on taxes, see Sater (2007, 272) and Ugarte (1926, 165–168). For more on plunder, see Sater (2007, 79). For more on natural resources, see Sicotte et al. (2009). For more on foreign borrowing, see Sicotte et al. (2009).

SINO-FRENCH WAR 1884-1885**CHINA****Overview:**

The war was financed primarily through borrowing. The majority of loans were financed through the Baring Brothers Bank (Stanley, 1961, p. 56). In 1884 the French stepped up their pressure on Formosa and moved on the Shanghai area by attacks on Woosung and along the Whangpoo River. To provide funds for counter French movements, the government borrowed £1,500,000 from Barings. This was to be repaid in ten years, and was guaranteed by the four customs at Tientsin, Chefoo, Shanghai and Hankow. There were also internal loans. “Soon after the outbreak of conflict with France, Tso Tsung-t’ang was ordered to return to Fukien to take charge of operations . . . he estimated that it would require over Tls. 400,000 per month for military supplies and salaries. Though this sum was to be made up by regular grants-in-aid from other provinces, remittances were not coming in a stipulated. In the twelfth month of Kuang-hsu 10 (Jan 16–Feb 14, 1885), Tso received authorization to borrow funds sufficient for the year. In the first month of the following year (Feb 15–March 16, 1885), the inspector general of customs was ordered to negotiate a loan of Tls. 4,000,000 from the Hongkong and Shanghai Bank. Repayment was to be guaranteed by the customs receipts. Interest was at 9 per cent for ten years . . . In the second month (March 17–April 14, 1885), at the insistence of the Bank, the amount was changed £1,000,000, the equivalent of Shanghai Kuping Tls. 3,934,000” (Stanley 1961, 57). China's foreign loans were guaranteed by increasing domestic sources of income: tax revenue, customs, and duties levied on domestic consumption (He 2013, 154).

Caveats and Concerns:

There is some discrepancy in terms of how many loans were actually taken out by the Qing government. This may be due to the fact that some provinces negotiated their own loans. If so, it may be difficult to know precisely how much was borrowed for the war in total. For instance, in one case, the Kwangtung Province borrowed over 13 million taels. To cover this loan, the local government petitioned for tax remission, increased commercial taxes, extracted forced loans from the local gentry, and cut salaries of province officials (Bays 1970, 332).

Notes:

For more on war costs and general war finance, see Chere (1988, 189), He (2013, 154–163), and Leng (2001, 141). For more on foreign loans, see Stanley (1961, 56–57), “The Clash of Arms”

(1885), King (1987, 548–549, 557), Bays (1970, 332), and Chen (1963, 268–269, 276–278).

FRANCE

Overview:

The war cost France roughly 335,000,000 francs (Bodart 1916, 154). The war was funded domestically, through taxation and state bonds (Schremmer 1989, 397–399).

Caveats and Concerns:

The sources of income for the French government may have included credits or loans (Schremmer 1989, 397–399). Since the funding for the war was appropriated through votes in the Chamber of Deputies, it is unclear what the exact primary funding source was.

Notes:

For more information on war cost and general finance, see Fourniau (1989, 75, 85), Bodart (1916, 154), and Schremmer (1989, 397–399). For more information on Premier Jules Ferry's governments wartime appropriations, see Burlette (2007, 23–25), Pisani-Ferry (1969, 422–424), Ennis (1973, 49), and Power (1944, 158, 170–171, 175–176, 190).

FIRST SINO-JAPANESE WAR, 1894–1895

JAPAN

Overview:

The war cost Japan an estimated 250,000,000 yen (Kobayashi 1922, 40). This sum was funded entirely through domestic means: treasury surplus, special account funds, loans from the Bank of Japan, and the issuance of war bonds and public loans (Kobayashi 1922, 40; Ono 1922, 47).

Caveats and Concerns:

While there is general agreement that 250,000,000 yen was allocated to cover the costs of the war, there is disagreement as to how much of this fund was actually used. Kobayashi estimated that the actual output for the war did not exceed 200,475,508 yen (Kobayashi 1922, 40). This figure roughly concurs with the Bank of Japan's [Nihon Ginko] estimate of 200,480,000 yen. (Nihon Ginko Vol 1. 1982, 461–462). Ono, however, argued that the total outlay for the war came to 233,523,252 yen (Ono 1922, 35). Also of concern is China's indemnity payment of 82,171,650 yen at the war's conclusion (Ono 1922, 77–78). This money was transferred to the special account for war expenditures. It is unclear if the 250,000,000 allocation includes this indemnity figure.

Notes:

For more information on war financing, see Kobayashi (1922, 40), Ono (1922, 35–36, 38–42), Paine (2003, 269–270), and Nihon Ginko (Vol. 1., 1982, 461–462, 481). For more information on domestic funding, see Kobayashi (1922, 40–42, 45–50, 55–56), Ono (1922, 47–48, 58–64, 68, 71–73), and Nihon Ginko (Vol. 1., 1982, 462–464, 466–468). For information on Japan's objection to foreign loans, see Nihon Ginko (Vol. 1., 1982, 478–479).

CHINA

Overview:

The war cost China roughly 119,838,648 taels, which does not include the additional 263,176,701 taels they were required to pay in indemnity to Japan at the war's end (Feuerwerker 1980, 66–67). China was able to fund its military operations primarily by borrowing from foreign banks. The Chinese government took out a series of loans from Hong Kong and Shanghai Bank, the National Bank for Deutschland, Cassel Bank, and the Syndicate of Paris and St. Petersburg banks (Feuerwerker 1980, 67). Some funds, however, were raised domestically: The Chinese government deducted upwards of 30% from the salaries of civil servants, the emperor ordered four Chinese banks to provide 10 million taels for the war, taxes were raised on sugar and salt, and various war loans were raised in regional provinces (Paine 2003, 147; Liu 2009).

Caveats and Concerns:

It is difficult to get a clear estimate as to China's war total war expenses largely due to the fact that the Chi'ing government was in the position of needing to negotiate with the provincial authorities for contributions to the nation's war fund. In fact, the half million pound sterling loan raised at the Hong Kong and Shanghai Bank in London was the "first loan in Chinese history to be negotiated directly by the Peking government instead of through a provincial authority" (Paine 2003, 147). At this period of time, the government was not centralized and funding was dispersed.

Notes:

For more information on war financing, see Feuerwerker (1980, 66–67), Li (1956, 142), Liu (2009). For more on foreign loans, see Feuerwerker (1980, 66–67), He (2013, 173), Liu (2009), and King (1987, 535, 547–550, 557). For more on domestic funding, see Paine (2003, 147), Liu (2009), Huang (1919, 14), and Cheng (2003, 104–105).

SPANISH-AMERICAN WAR (1898)

UNITED STATES

Overview:

The estimates of the total cost of war for the United States range from \$200 million (Alger 1899, 227) to \$283 million (Daggett 2008, 2). The war effort was financed domestically through taxation and loans. Taxation is estimated to have brought in internal revenue of \$102.5 million within the 12 months after the war began ("United States" 1917, 468). Specifically, special taxation sanctioned by a revenue bill of June 1898 affected a broad spectrum of items such as beer, tobacco and cigars, proprietors of theaters and circuses, as well as bankers' capital, pawnbrokers, and commercial brokers. In addition, an excise tax was placed on sugar and petroleum refiners and a federal tax on inheritances. The war loan, which was intended to raise revenue in the amount of \$200 million, was oversubscribed in a month and reached a value of \$1,500 million ("United States" 1917, 469). This success is attributed to the fact that the loan was offered for popular subscription and the bonds were for small amounts, which opened up investment opportunities for more investors of small means. Specifically, "the bonds were issued in denominations as low as \$20...More than half of the entire issue was taken by 230,000 of these small subscriptions, and no subscription of more than \$4,500 was accepted" (Plehn 1898, 433).

Caveats and Concerns:

The sources report that the revenue for war financing was mostly obtained through levying of special taxes and through loans; however, partly because of the time lag between the decision to levy special taxes and their actual collection set in the context of the short timeframe of the war, the exact estimate of the tax to loan revenue ratio is difficult to ascertain.

Notes:

For general estimates of the total cost of war see Watterson (1898, 583–584), Alger (1899, 227), and Daggett (2008, 2). For further discussion on taxes and war tax revenue yield see “United States” (1917, 468–469) and Plehn (1898, 425–428). For a detailed list of specific items that were subjected to the special tax, consult “United States” (1917, 468–469). For references on the war loan, see “United States” (1917, 469) and Plehn (1898, 431–432). For more information on the war chest, refer to Plehn (1898, 429). For more detail on the nature of borrowing from investors of small means, see Plehn (1898, 433) and “United States” (1917, 469).

SPAIN**Overview:**

The cost of Spanish engagement in the war is reported in Alger (1899). Also, it appears that there are no reports on the actual ways of financing of the Spanish effort in battling the American involvement in essentially Cuban rebellion against the Spanish colonial rule.

Caveats and Concerns:

The estimate of the war cost comes from a single available source and therefore its plausibility cannot be verified by cross-checking with other reports. However, given the importance of the sugar business as a source of revenue for the Spanish Empire, it is plausible to assume that Spain was fully vested in waging war against the United States and Cuban opposition and financed as much military force as she could muster. In the end, however, Spanish effort proved insufficient and became to be known as “The Disaster” in the Spanish national historical consciousness.

Notes:

For further discussion on the cost of war see Alger (1899, 227).

RUSSO-JAPANESE WAR (1904–1905)**JAPAN****Overview:**

The war cost Japan about Y1.207 million (Hoad 1904, 41; Kobayashi 1922). Japan’s war effort was financed mainly with revenue raised from increased taxation, domestic and foreign loans, and retrenchment of ordinary expenditures, as well as the opening-up of special accounts. A domestic borrowing scheme seems to have provided the largest revenue for financing the war. Relying on a combination of funds from public loans, exchequer bonds, and temporary loans, the government was able to raise about Y851 million (Kobayashi 1922). Revenue derived from increased taxation provided the government with additional Y212.8 million (Kobayashi 1922). Foreign loans have been reported to amount to \$343 million (Miller 2005) .

Caveats and Concerns:

At first glance, the data on Japan's war expenses and revenue as reported in Hoad (1904) seems to suggest a significant discrepancy with the information presented by Kobayashi (1922); however, upon closer examination, the estimate of Y1.207 million as war cost appears consistent. Some of the confusion might stem from the fact that Hoad, published during the first year of the Russo-Japanese War, presents a table with data on the "Detail of Receipts and Expenditures in Connection with the Russo-Japanese War" yet does not explicitly specify the period under consideration. This may lead to an assumption that the data covers the entire period of the Russo-Japanese War; however, upon a close examination of the data provided by Kobayashi (1922), it is confirmed that the estimates in Hoad (1904) coincide with those in Kobayashi (1922) and refer only to the year of 1904. Another source of confusion might be attributed to the choice in using categories that sound similar but actually refer to different sets of data. For example, one source uses the term "Special Account for Extraordinary War Expenditure" in relation to the total estimate of war expenses in the amount of Y1.721 million. However, other sources refer to funds borrowed from "special accounts," which are reported at Y38 million (Kobayashi 1922), then there is "extraordinary war expenditure" in the amount of Y380 million (Hoad 1904) or a term "total expenditure" of Y576 million, all being treated as separate items tied to the financing of the Russo-Japanese War. An analysis of the available data, however, leads to the same conclusion. Specifically, the total war expenses for 1904 seem to be around Y400 million (Y380 million cited by Hoad [1904]) and Y420 million in Kobayashi [1922]) and Y787 million for 1905 (Kobayashi 1922), resulting in the total cost of war of Y1.278 million. Out of this amount, the revenue for financing the war effort can be broken down as follows: special taxes—Y62.2 million in 1904 and Y150.6 million in 1905; public loans, exchequer and temporary loans—Y280 million in 1904 and Y571 million in 1905; and special accounts—Y30 million in 1904 and 8 million in 1905 (Hoad 1904; Kobayashi 1922). The total revenue from the exchequer appears to come to the total of Y160 million for the war years (Kobayashi 1922).

Notes:

For further discussion on the cost of war see Hoad (1904, 40–41), Crammond (1910, 222), and Kobayashi (1922). For a general overview of war revenue and its specific breakdown, go to Hoad (1904, 40–41) and Kobayashi (1922). Further discussion on national debt during the war years can be found in Crammond (1910, 224). For more detail on borrowing and different kinds of loans see Hoad (1904, 37–38, 41) and Kobayashi (1922). For further discussion on foreign borrowing, see Miller (2005).

RUSSIA

Overview:

The total expenditure caused by the Russo-Japanese War amounted to 3,016 million rubles (Michelson et al. 1928). For the years 1904 and 1905, war expenditure consumed 40% of the total revenue (Long 1974). Russia attempted to raise taxes and curtail expenditures to pay for the war, raising the urban property tax (33%), excise taxes on beer (33%), yeast and matches (100%), and fuel oils (20%), as well as increasing stamp and death duties (50%). The government also increased the sale price of vodka (a state-owned monopoly), customs duties on certain imports, and railway charges for the transports of passengers and goods. This tax effort, however, was only able to pay for about 5% of the war (Michelson et al. 1928). Taxation appears not to have been a viable option as Russia slumped into a financial crisis accompanied by inflation around the same time that the war broke out, and the taxation system was incapable

of handling additional demands. By the end of the first month of the war, the necessity for a new Russian loan was already being bruited in Paris (Ananich 2005). Russia entered negotiations with France for a loan of 800 million rubles, and in 1904, France floated a loan of 700 million rubles. However, in early 1905, loan negotiations failed and Russia was forced to accept the German and Dutch offer, under which the finance committee authorized Mendelssohn to raise a short-term loan of 150 million (Ananich 2005; Long 1974).

Caveats and Concerns:

Ananich (2005) placed the cost of the war at 6.554 billion rubles. However, this estimate includes the interest on domestic and foreign loans, which amounted to 3.944 billion rubles. When this interest on the debt is excluded, the war cost is 2.610 billion rubles (Ananich 2005). Michaelson et al. (1928) placed the cost of the war at 2,295 million rubles (including 2,113 million rubles spent in the years 1904–1906, and 182 million rubles spent in the succeeding years) later in the text (Michaelson et al. 1928).

Notes:

For general discussion on the cost of war, see Crammond (1910, 225). For more information on taxation, consult Crammond (1910, 225). Further detail on borrowing can be referenced in Crammond (1910, 225). For further discussion on national debt, see Crammond (1910, 226).

SECOND SPANISH-MOROCCAN WAR (1909–1910)

SPAIN

Overview:

No sources found.¹⁰

MORROCCO

Overview:

No sources found.¹¹

ITALO-TURKISH WAR (1911–1912)

ITALY

Overview:

Italy's war with Turkey was financed domestically through the Bank of Rome, which cost around \$80,000,000 (Merivale 1913, 406). The war was paid for by budget surpluses. The Italian government was in the position that it didn't need to tax or pursue foreign financing for this war. As the Credito Italiano (1920) noted, it left "no visible mark on the budget since the expenses of the campaign were debited to special accounts" (229). There is some indication that treasury bonds were issued and that some bank notes were printed (*The Literary Digest* 1920, 1246). Some weapons were confiscated from the Arab-Turks, but such plunder played a negligible role in the Italian military campaign.

Caveats and Concerns:

¹⁰ Please contact cappella@bu.edu if you have any suggestions for citations.

¹¹ Please contact cappella@bu.edu if you have any suggestions for citations.

Some discrepancies in terms of the total cost of the war, and it is not clear exactly how deficit spending was carried out.

Notes:

For more information on general finance and cost of war, see McGuire (1927), Vecchi (1912, 50), Seymour (1918, 218–219), Banca Commerciale Italiana’s “Statistical summary of economic conditions in Italy” (1919, 96), Jordan (1912, 73), Merivale (1913, 406), Credito Italiano, “The Economic Resources of Italy” (1920, 229), and Beehler (1913, 82). For information on funding through budget surpluses, see “How Italy Feels the War,” *The Literary Digest* (1912, 1246), Irace (1912, 316–317), Clark (1984, 134), and Beehler (1913, 61). For more information on domestic sources of funding, bonds, and money issue, see “How Italy Feels the War” (1912, 1246), McCullagh (1913, 21), Abbott (1912, 120), “Statistical summary of economic conditions in Italy” (1919, 14), Clark (1984, 134), Credito Italiano, “The Economic Resources of Italy” (1920, 229), and McGuire (1927, 73–74). For more on plundered materials, see “Reports of the Italian General Staff” (1914, 34, 56–57).

TURKEY

Overview:

Turkey funded the war against Italy through a combination of foreign aid, domestic borrowing, and taxation. Turkey’s finances were improving but still largely in disarray at the time of the war with Italy. In fact, it is not entirely clear how much control Turkey actually had over its financial management since the Ottoman Public Debt Administration—a board of mostly Western Europeans who refinanced and managed Ottoman debt—was founded in the 1880s (Childs 1990, 13). By the time the war broke out, Ottoman debt was manageable, down to about 26% (Hall 1918, 199). With an improved credit rating, the Turkish government could again borrow from the Great Powers. According to the *Special Report on the Ottoman Public Debt* (1914), the Ottoman empire seems to have issued lottery bonds and enacted various “supertaxes,” i.e. “provisional war taxes,” on items such as salt and spirits to raise funds for the war in Libya (9). In addition, the Ottoman Empire received substantial donations from throughout the Muslim world (Abbott 1912, 2; Bennett 1912, 24). The Italian military continually voiced concern about military contraband for Arab-Turkish fighters being smuggled into Libya through Egypt (Beehler 1913, 54).

Caveats and Concerns:

While there is a great deal of information as to the amount of public debt the Ottoman Empire carried, it is difficult to determine what specific debts were a result of the war with Italy, as the war only lasted 11 months and was followed immediately by the First Balkan War. The fact that Turkey essentially subsisted off of foreign loans makes it difficult to determine how much of these loans went directly to military spending and how much were simply for the subsistence of the government. While there are some estimates as to foreign donations, there is no way to determine how much material was donated to the Turkish military and/or smuggled into Libya during the conflict.

Notes:

For more information on general finance and public debt, see Childs (1990, 13), Beehler (1913, 61), Hall (1918, 199, 201), and Oxford Pamphlets (1914, 5–6). For more on foreign loans and

credit, see Hall (1918, 230), Geyikdağı (2011, 49), and Block (1914, 38–39). For more on bonds, see Geyikdağı (2011, 46). For more on taxes, see Beehler (1913, 82) and Block (1914). For more on Muslim donations and smuggling, see Abbott (1912, 2, 229), Bennett (1912, 24), Beehler (1913, 54), and Irace (1912, 195). For more on the Red Crescent, see Irace (1912, 193–194).

BALKAN WAR I (1912–1913)

GREECE:

Overview:

The first Balkan War cost Greece about 467,000,000 francs (Hall 2000, 138–139). The Greek government was able to finance a majority of these costs domestically, largely due to budget surpluses and the effective management of pre-war loans (Cassavetti 1914, 208–209). Upon the declaration of war, Greece also discounted Treasury bonds and received advances from the Greek National Bank (“Report of the International Commission to Inquire into the Cause and Conduct of the Balkan Wars” 1914, 261–262). France also extended Greece some credit. Since Greece’s tax system was somewhat antiquated and the population was widely dispersed, this made tax collection difficult; there were no discrete war taxes (Mazower 1991, 61). Diaspora remittances also supplemented the wars cost. The Greek expat community in the United States deposited 2,476,385,000 drachmas in Greek banks from the outset of the war in 1913 (“Report of the International Commission to Inquire into the Cause and Conduct of the Balkan Wars” 1914, 385–394).

Caveats and Concerns:

None.

Notes:

For general finance and war costs, see Martin (1913, 123), “Report of the International Commission to Inquire into the Cause and Conduct of the Balkan Wars” (1914, 260, 385–394), Cassavetti (1914, 208–209), Martin (1913, 115), Hall (2000, 138–139), Gibbs and Grant (1912, 11), Mazower (1991, 60–61). “Spent \$500,000,000 on the Balkan War” (1913), “The Cost of the Balkan Wars” (1913), and “Lack of Funds May End Balkan War,” (1913). For information relation on pre-war loans and budget surpluses, see Cassavetti (1914, 208–209). For information on the issuance of treasury bonds and credit advances from France and the Greek National Bank, see “Report of the International Commission to Inquire into the Cause and Conduct of the Balkan Wars” (1914, 261–262) and Mazower (1991, 60). For more on donations from the Greek community in the United States and Red Cross donations, see “The American Red Cross Bulletin” (1913, 82) and “The Ninth Annual Report of the American Red Cross” (1914, 52–53). For more on Greek plunder, see “Report of the International Commission to inquire into the Cause and Conduct of the Balkan Wars” (1914, 323–324).

TURKEY

Overview:

Turkish financing of the Balkan I reflects its financing of the Italo-Turkish War, an emphasis on debt and minimal reliance on taxation. Turkey’s finances were improving but still largely in disarray at the time of the war with Italy and, subsequently, the Balkan states. In fact, it is not entirely clear how much control Turkey actually had over its financial management since the

Ottoman Public Debt Administration—a board of mostly Western Europeans who refinanced and managed Ottoman debt—was founded in the 1880s (Childs 1990, 13). By the time the war with Greece broke out, Ottoman finance had improved to the point that it could again borrow from the Great Powers and Egypt (Hall 1918, 230). There is a great deal of information as to the amount of debt the Ottoman Empire carried; it is difficult, however, to determine what specific debts were a result of the war with Italy and which were a result of the First Balkan War. According to the *Special Report on the Ottoman Public Debt* (1914), a report compiled by Sir Adam Bond, a representative of the Administrators of the Ottoman Public Debt, the Ottoman empire seems to have issued lottery bonds, and enacted various “supertaxes,” i.e. “provisional war taxes,” on items such as salt and spirits to raise funds (9). Also, the Red Cross and Crescent both donated to Turkey (“The American Red Cross Bulletin” 1913, 82). Indian Muslims donated to the Ottoman cause (Ozaydin 2003, 13).

Caveats and Concerns:

While there is a great deal of information as to the amount of public debt the Ottoman Empire carried, it is difficult to determine what specific debts were a result of the war with Greece, as the war was recently preceded by the Italo-Turkish war of 1911–1912. The fact that Turkey essentially subsisted off of foreign loans makes it difficult to determine how much of these loans went directly to military spending and how much were simply for the subsistence of the government. While there are some estimates as to foreign donations, there is no way to determine how much material was donated to the Turkish military and/or smuggled into Libya during the conflict.

Notes:

For more on general finance and Public Debt, see Hall (2000, 138–139), Childs (1990, 13), Oxford Pamphlets (1914, 5–6), Block (1914, 37–39), “Spent \$500,000,000 on the Balkan War” (1913), and “The Cost of the Balkan Wars” (1913). For more on foreign loans, see Hall (1918, 230), Geyikdağı (2011, 46, 49), and Block (1914, 37–39). For more on lottery bonds and war-taxes, see Block (1914, 9, 37–39) and Geyikdağı (2011, 46). For information on Red Cross, Red Crescent, and Muslim donations, see “The American Red Cross Bulletin” (1913, 82) and Ozaydin (2003, 13).

WORLD WAR I (1914–1918)

General Overview:

Overall cost of WWI is estimated at a gross amount of \$208.3 billion, with the Allied expenses approximated at a gross total of \$145.3 billion, that of Germany at \$40.2 billion, of Austria-Hungary at \$20.6 billion, and of Turkey and Bulgaria at \$2.2 billion (Bogart 1920, 267). The total sum of advances to Allies is estimated at about \$22.1 billion, bringing the overall net cost of WWI to \$186.2 billion (Bogart 1920, 267).

Caveats and Concerns:

The reported estimates for the total cost of WWI in Bogart (1920) are a bit lower than those in Seligman (1919).

Notes:

For further discussion on the general cost of WWI see Bogart (1920, 267) and Seligman (1919, 739–770).

RUSSIA

Overview:

Actual war expenditure for the period from August 1914 to December 1917 is estimated between \$22.6 billion (Bogart 1920, 140) and \$26.5 billion (Seligman 1919, 746). War expenditures were met primarily by internal and foreign loans, comprising about 74% of war revenue (Bogart 1920, 140), as well as by printing of paper money. Frequent and relatively small loans became characteristic of the Russian borrowing scheme during the war period. By the end of October 1917, total debt issued was estimated at \$18 billion (Bogart 1920, 141). Records show that foreign financing came mostly from advances by Great Britain (\$2.84 billion) and supplemented by the U.S. Government (\$188 million), Japan (\$333 million), private loans in the United States (\$162.5 million), and bills discounted in France (\$1.085 billion) (Bogart 1920, 141). Printing was a prominent form of war revenue as well. Towards the end of 1917, the ruble was quoted at 70.5% below par, paper money was issued at a rate of \$500 million worth of rubles per month, and the overall note circulation reached the ruble equivalent of \$8.9 billion, an amount significantly higher from \$817 million estimated at the outbreak of the war (Bogart 1920).

Taxation does not appear to have been a consistent or reliable source of revenue for the Russian government. For example, in 1915, several proposals to obtain about \$250 million through taxation were considered. However, receipts fell short of estimates. In 1916, an excess profit tax and income tax were introduced without much success. The excess profit tax proved particularly ruinous due to an increase in the price of raw material and labor. In 1918, the Soviet government imposed a capital levy on wealth, which is estimated to have actually brought in only a tenth of the projected \$5 billion (Bogart 1929, 139).

Caveats and Concerns:

The deviation in the estimates of total war expenditures may result from the accounting method that was used. For example, the estimated total of \$22.6 billion increases to \$24.3 billion when the total war expenditures entail actual war expenditures as well as the increase in civil budgets in the amount of \$1.79 billion (Bogart 1920, 140). This higher number also coincides with the estimated growth of government debt between the onset and the end of Russian involvement in WWI. In terms of war financing, taxation as a means of raising war revenue proved to be a failure most likely due to the extreme decentralization of power, nationalization of industry, and reliance on contributions, which were essentially forced payments in kind. Another source of complication for war financing can be attributed to the fact that “the legal limit on note issues increased and the ratio between gold reserves and notes declined” (Bogart 1920, 123). The problem with raising enough war revenue was further exacerbated by the practical cessation of foreign trade and its consequent decrease in the collection of custom duties.

Notes:

For further detail on Russian war expenditures and revenue see Seligman (1919, 746) and Bogart (1920, 140). For more information on taxation and civil expenditures consult Bogart (1920, 120). For more detail on taxation per war year see Bogart (1920, 132, 136–137, 139). Further information on the issues concerning printing of paper money can be found in Bogart (1920). For a breakdown of Russian internal and foreign war loans from October 1914 to April 1917, see

Bogart (1920, 122, 141). For a general overview of war financing per year using gold, short loans, and treasury bonds, as well as note circulation, consult Bogart (1920, 134).

AUSTRO-HUNGARIAN EMPIRE

Overview:

The estimate of the total cost of the governments' involvement in WWI from August 1914 to December 1917 is reported at \$24.86 billion (Seligman 1919, 747). The Austro-Hungarian war effort was financed via a combination of revenue from domestic borrowing, foreign loans, and taxation. Austrian and Hungarian governments entered into several domestic borrowing schemes involving getting eight war loans amounting to \$10.6 billion, advances from the Imperial Austro-Hungarian Bank in the total amount of \$5.7 billion, advances from other banks in the value of \$2.5 billion, and treasury notes totaling \$1.3 billion (Bogart 1920, 255). Starting in 1914, the Austrian government indirectly engaged the Imperial Austro-Hungarian Bank as a brokerage firm to secure the amount of \$190 million, and both Austrian and Hungarian governments made two direct loans from the bank in the total amount of \$800 million. In 1915, this revenue was supplemented by a loan to the Austrian government in the amount of \$160 million in 1915 (Bogart 1920, 237). In addition, during the first two years of the war, Austria-Hungary reportedly received a \$110 million loan from Germany (Bogart 1920, 238). Taxation was the third reported source of war revenue. The income came from raised rates applicable to income tax, special earnings tax, directors' fee, land revenue and interest tax, and customs duties, which are reported to have yielded about \$40 million annually up to one year after the end of the war (Bogart 1920, 252), as well as from an increase in the rates of court fees and duties on inheritance effective as of January 1916. The revenue from the latter two forms of taxation was projected to yield about \$4.6 million (Bogart 1920, 253).

Caveats and Concerns:

Reportedly, Austria-Hungary had a war-financing philosophy that differed from that of Germany. As Bogart writes, "The sentiment was never so strong in Austria-Hungary that the cost of the war would be met wholly out of indemnities levied upon a conquered country, nor was there the same hope or likelihood that even a successful war would yield them the profits upon which Germany counted" (Bogart 1920, 253). Although the Austro-Hungarian war effort was mostly financed by war loans, it is perhaps also due to the Empire's war financing philosophy that, in order to meet increasing war expenditures, had to resort to many tax increases beginning in 1916. In terms of the reported data, it should also be noted "there were no budgets for Hungary during 1916 or 1917, ...figures are estimated upon a proportionate increase or decrease in the Austrian budget estimates" (Bogart 1920, 254).

Notes:

For more detail on total cost of Austro-Hungarian engagement in WWI see Seligman (1919, 747, 769) and Bogart (1920, 238). For further discussion on domestic loans refer to Bogart (1920, 237, 239, 255). More information on Austro-Hungarian national debt can be found in Bogart (1920, 255). More detail on foreign loans is offered in Bogart (1920, 238). For further discussion on various modalities of raising tax revenue see Bogart (1920, 253–254).

GERMANY

Overview:

The overall cost of Germany's involvement in WWI is estimated at about \$40.7 billion, with purely military expenses amounting to \$29 billion and mobilization to \$250 million (Bogart 1920, 228). The primary source of revenue for financing Germany's war effort come from loans with minimal reliance on taxation and gold and silver reserves. The government adopted a philosophy according to which direct war expenditure was financed through loans and the civilian budget through tax revenue. According to the reports, Germany borrowed a total of \$32.9 billion (Bogart 1920, 234). The government subscribed to about \$24.6 billion in loans (Bogart 1920, 207–230), secured \$1.5 billion in treasury bills (Bogart 1920, 234). The government appears to have committed to the largest loan subscription in the amount of \$1.2 billion at the beginning of war. In the period from 1915–1918, annual loan subscription ranged between \$5 and \$6 billion per year (Bogart 1920, 207–230). Furthermore, in order to finance its war effort, German government endeavored to increase its gold reserves. Germany started filling-up the “war chest” during the years prior to the war, and by July 1914, the sum totaled about \$51 million (Bogart 1920, 196). Tax revenue seems to have reached the final value of \$241.7 million. In the three-year period from 1913 to 1916, it consisted mostly of the *Wehrbeitrag* tax on income and property. In 1916, it became apparent that in order to meet the interest charges of the war debt, new taxes on war profits, tobacco, cigarettes, and increased postal rates had to be introduced. The following year, taxation continued to increase; for example, new taxes on coal, railways, a 20% increase in the war profits tax, and a tax on the Reichsbank were set up. In the last year of the war, new revenue-raising actions had to be taken with more than 11 new financial measures being adopted in hope of raising \$750 million (Bogart 1920, 230). Tax adjustments were imposed on almost all beverages, exchange and business transactions, luxuries, and war profits, as well as postal rates. Germany's total advances to Allies seemingly amounted to about \$ 2.4 billion (Bogart 1920, 228; Seligman 1919, 747).

Caveats and Concerns:

In terms of recorded war expenditure estimates, the \$48.6 billion total in Seligman (1919, 747) covers the period from August 1914 to October 1919 and is therefore bound to exceed the \$40.1 billion estimate provided by Bogart (1920, 228) covering the years 1914 though 1918. Also, if we assume the 1:4 ratio of USD to the Deutschmark, the \$32.9 billion war expenditure estimate seems to be in the same rough ballpark as Fairchild's number of 97.6 marks (Fairchild 1994, 107). Germany's heavy reliance on financing war expenditure through loans seems plausible mostly due to the adopted financing scheme, which was set-up in such a way that allowed for broad public participation: “In order to bring them within the reach even of the humblest buyer, they were issued in denominations as low as 100 marks (\$25)” (Bogart 1920, 207). Taxation, however, proved to be a more problematic source of revenue due to difficulties in tax enforcement: “The taxes voted were, however, not merely belated; they were also slow in being put into effect. By the middle of August 1917, the Empire had not yet received a single penny of the war taxes. The war-profits tax was still unpaid after three years of war” (Bogart 1920, 226–227).

Notes:

For a more detailed discussion on the total cost of war including an itemized expense list and breakdown of expenditures per war year, consult Bogart (1920, 228). For an alternative estimate of Germany's war expenses see Seligman (1919, 747). For further detail on German war loans, including treasury bills, see Fairchild (1994, 107) and Bogart (1920, 234, 228). For further detail

on domestic borrowing, consult Bogart (1920, 207–230). For a specific breakdown of the amount, character, loan, and maturity dates for German war loans, refer to Bogart (1920, 207–230). Further information on the war chest can be found in Bogart (1920, 196–198, 203). More detail on taxation can be found in Bogart (1920, 196–197, 213, 219, 226–227, 230–231). A specific annual breakdown of source of taxation for the period from 1916 to 1919 can be found in Bogart (1920, 231). For more information on Germany's advances to Allies go to Seligman (1919, 747) and Bogart (1920, 228).

FRANCE

Overview:

The net cost of the war for France is \$25.8 billion (Bogart 1921). This cost was met by four domestic war loans totaling \$11.01 billion, other domestically floated debt totaling \$4.8 billion, advances from the Banks of France and Algeria (\$3.43 billion), Great Britain (\$2.17 billion), and the United States (\$2.4 billion), and tax revenue totaling \$5.2 billion.

Caveats and Concerns:

The government's reliance on loans as a primary financing measure for France's war expenditures seems to be consistent with the blueprint for war financing that was set-up in the past. Therefore, the lack of information on taxation as a potential source of war financing does lead to a reasonable conclusion that it did not comprise a significant source of revenue; however, more detail on France's war financing philosophy could shed more light on the reasons behind omission of taxation.

Notes:

For further detail on the cost of war and loan data see Seligman (1919, 746). Further discussion on France's loans to Allies can be found in Seligman (1919, 746) and on loan income in Seligman (1919, 752). For more detail on revenue data, see Seligman (1919, 750).

GREAT BRITAIN

Overview:

The cost of the British war effort totaled around \$41.997 billion (Seligman 1919, 747). This is expenditure was met by a mix of domestic and foreign debt with a smaller reliance on taxation. About 28% of war expenditure was met via taxation (Seligman 1919, 749). Non-debt revenue sources included a customs and excise tax, estate duties, stamp tax, land tax, house duty, income tax, excess profit tax, and a land values tax (Seligman 1919, 760). In regards to war loans, Britain floated three, one in March 1915, the second in June 1915, and the third in April 1917 (Seligman 1919, 765). Britain also floated a series of exchequer bonds and national war bonds as well as treasury bills. Britain also borrowed a small portion from the United States. Total British debt amounted to \$37.2 billion (Seligman 1919, 766).

Caveats and Concerns:

None.

Notes:

For more information on the cost of war and loan data see Balderson (1989, 277), Seligman (1919, 749), and Bogart (1921). General overview of data on war revenue and percent break-

down can be found in Seligman (1919, 749) and Grady (1927). More detail on loans to Allies can be found in Seligman (1919, 746). War expenditure details can be referenced in Seligman (1919, 749).

UNITED STATES

Overview:

The estimates for total war expenditure for the U.S. government in WWI appear to be fairly consistent at around \$32.3 billion for the period from 1917–1919 (Studenski and Krooss 1952, 298; Gilbert 1970, 69, Table 19; Seligman 1919, 747). The United States appears to have resorted to financing the war mostly through loans and a smaller amount via taxation (between 25 and 30%) (Seligman 1919, 757). The reported estimates of the U.S. subscribed domestic loans range from \$21.5 million (Studenski and Krooss 1952, 291–299) to \$22.2 billion in Seligman (1919, 747) to \$24 billion (Gilbert 1970, 139).

Caveats and Concerns:

The total cost of war estimate of \$33.8 billion in Studenski and Krooss (1952, 298) covers the period from April 1917 to June 1920. Based on this data, the total cost of war for the years of 1917 to 1919 comes to \$32.4 billion, which seems consistent with the \$32.3 billion estimate from Gilbert (1970, 69, Table 19). The \$1.4 billion in war expenditures for half a year in 1920 recorded in Studenski and Krooss (1952, 298) compares to \$5.4 billion for 1920 in Gilbert (1970, 69, Table 19). This would suggest that the estimate from Studenski and Krooss may be on the low end or that war related expenditures in the second half of 1920 exceeded those in the first half, which seems an unlikely scenario.

Notes:

For further discussion and data on the cost of U.S. involvement in WWI consult Seligman (1919, 746), Studenski and Krooss (1952, 69, 298–299), and Gilbert (1970, 69, Table 19). For more information on U.S. domestic loan revenue see Seligman (1919), Studenski and Krooss (1952, 291–299), and Gilbert (1970, 139, Table 141). For more information on U.S. loans to Allies, see Seligman (1919, 746). More information on war revenue and the ratio of war expenditure to war revenue for the period from 1916–1919 can be found in Seligman (1919, 757) and Gilbert (1970, 72–73).

ESTONIAN WAR OF LIBERATION (1918–1920)

ESTONIA

Overview:

Estonia's War of Independence was funded by printing of money, agrarian reform (i.e. promises of land grants for those who enlisting in the national army), Great Power aid (primarily from England and the United States), regional aid (from Finland), and by direct regional military support (Baltic Germans, Latvians, Finns, Danes, Swedes, and White Russians). By far, the largest amount of aid came from Great Power donors. The U.S. Relief Administration and the U.S. Liquidation Commission in France were the main vehicles of U.S. aid, and the Estonian government was able to mortgage several years of flax and timber exports in order to secure loans and credits from Britain (Parker 1920, 30; Tarulis 1965, 228). Virtually all of the direct military support from the Allies came from the British Royal Navy. The British navy bombarded

Bolshevik strongholds, transported Finnish volunteers, and delivered arms and munitions (Miljan 2004, 494). The British navy also supplied the Estonians with what would become the core of its nascent navy: two captured Russian destroyers (Twardowski 1980, 351).

Caveats and Concerns:

During the time of conflict with Russia, Estonia was in the position of establishing statehood. This meant that war financing was taking place while the country was developing its financial system. In a relatively short period of time, Estonia went from having no paper currency to having millions of notes in circulation. Consequently, it is hard to differentiate between how much currency was printed (i.e. non-monetized debt) versus money placed in circulation that was properly monetized

Notes:

For more information on general finance and war costs, see Hiden and Salmon (1991, 77), “The Baltic States: A Survey of the Political and Economic Structure and the Foreign Relations of Estonia, Latvia, and Lithuania” (1938, 135), Moody (1922, 316), and *Estonian War of Independence 1918–1920* (1938–1939, 15). For information on money issue, see “The Baltic States: A Survey of the Political and Economic Structure and the Foreign Relations of Estonia, Latvia, and Lithuania” (1938, 29, 132). For information on military funding through agrarian reform, see Smith (2001, 13). For more on foreign aid, loans, and credit, see Parker (1920, 30), Mullendore and Lutz (1941, 42), Tarulis (1965, 228), Miljan (2004, 494), Moody (1922, 316), *Estonian War of Independence 1918–1920* (1938–1939, 17, 45), Sarkees and Wayman (2010, 124), Raun (2001, 107–108), Dillon and Wykoff (2002, 157), and Clemens Jr. (1991, 33). For information on direct military aid, see Benton (2011, 241), Smith (2001, 13), Tarulis (1965, 123–124), and Raun (2001, 108). For information on plunder, see Miljan (2004, 494), Twardowski (1980, 35), and *Estonian War of Independence 1918–1920* (1938–1939, 45).

RUSSIA

Overview:

Russia’s war effort in Estonia [and Poland, given that they were fought at the same time and, thus, funded the same] was funded domestically. The Russian economy was in shambles due to the Russian Revolution. “After the October coup [1917], the tax system fell apart and the new government counted on the printing presses to finance government spending. In 1918, notes were printed in denominations up to 10,000 rubles. By October 1918, prices had grown to 102 times their 1913 level, and to 923 times in October 1919. The government used gold holding to buy printing supplies abroad. Nearly 50 percent of the treasury’s budget went for the cost of printing paper money. In 1919, the supply of paper money in circulation grew to 225 billion. In 1920, it reached 1.2 trillion and doubled again in the first half of 1921” (Allen 2009, 203). “In other words money lost its effective function within the state sector of the economy, and had precious little function at all. In 1919–20 workers’ wages were largely paid in kind, the meager ration being free. Overcrowded tramcars and trains, insofar as there were any, were free also, as were municipal services. By 1920 there was even an attempt at a moneyless budget” (Nove 1984, 64–65).

Upon entering the war, the Bolsheviks had in their possession vast amounts of gold captured and confiscated from the imperial gold reserves. These reserves almost doubled when the White Army was defeated in early 1920. These reserves were further supplemented by plunder from

various campaigns fought over the territories of the former Russian Empire. In February of 1920, the Bolsheviks established the Russian State Treasury for the Preservation of Valuables that served as a centralized storehouse for all manner of plundered valuables from territories from the former Russian Empire. The Bolsheviks also resorted to alternative means of funding, i.e. embezzlement, smuggling, and plundering. The Russians smuggled gold and bank notes to Stockholm where it could begin to make orders for war-material. The Soviets were able to buy a negligible amount of liquidated World War I material from the United States (the lowest amount purchased by any country) and other liquidated material from the demobilized German army. If foreign goods were purchased out of the gold reserves, most domestic spending was funded through the printing of bank notes and through the establishment of domestic quotas of contribution on the part of citizens. The Bolsheviks initiated a program called “War Communism,” which was defined by the policy of *prodrazvyorstka*. The government set rigid foodstuffs quotas for confiscation, and armed units forcibly confiscated the goods for the war effort. This policy was extended to newly acquired territories as well. When, for instance, during the six-month period in which the Bolsheviks occupied Latvia, they initiated a policy of nationalization of industry and forced quotas.

Caveats and Concerns:

There are several difficulties that arise when attempting to determine Russia’s war financing. First, and most obviously, the Soviet Russian regime was fighting multiple wars simultaneously, including a civil war. It is difficult to know, then, the discrete costs of each war. Plunder from one conflict very likely was applied to the next. The multiplicity of fighting fronts is further complicated by the fact that the Bolshevik government was still in the process of solidifying its control domestically. The policy of *prodrazvyorstka*, then, could be considered either a kind of domestic plunder or a kind of tax. And finally, the ideological nature of both the fiscal and monetary policy of the Bolsheviks may pose problems in terms of how to classify certain funding tactics. For instance, there seems to be some evidence that the Soviet government was printing massive amounts of bank notes in an attempt to devalue the ruble to such a degree that the shift to a moneyless society would be not only possible but necessary (see Malle 1985).

Notes:

For more on budgets and general finance, see Malle (1985, 169–171, 176–1978), Debo (1992, 157), and Nove (1984, 64–65). For more on the capture of imperial gold reserves, see McMeekin (2009, 130). For more on the smuggling and embezzling of money and gold to finance material purchases, see McMeekin (2009, 131–132). For information on the limited amounts of foreign sources for material, see Borzęski (2008, 9) and Parker (1920, 30). For more on money issue, see Malle (1985, 172), “Russia” (1923, 589); Hanke, Jonung, and Schuler (1993, 41), Allen (2009, 203), and Munting (1982, 53). For more on domestic plunder, “War Communism,” and *prodrazvyorstka*, see Pipes (1993, 389), Malle (1985, 195, 396, 399, 408), Dreifelds (1996, 25), Mangulis (1983, 49), Munting (1982, 42), Tarulis (1965, 115–116), McMeekin (2009, 135–136), and Arnold (1937, 72–74). For more on plunder from military campaigns, see Lincoln (1989, 405) and Davies (1972, 86).

LATVIAN WAR OF INDEPENDENCE (1918–1920)

LATVIA

Overview:

Latvia's War of Independence was funded through domestic borrowing, Great Power aid (from England, France, and the United States), and direct military support from regional allies (Baltic Germans—but only against the Bolsheviks—Estonians, Poles, and White Russians). By far the largest amount of foreign aid came from the Great Powers. The U.S. Relief Administration and the U.S. Liquidation Commission in France were the main vehicles of U.S. credit; both the British and French governments also provided some credit (A.K. 1920, 41; Bilmanis 1947, 341–342). There was also some direct military support from the Allied Navy in the form of transport and bombardments (Tarulis 1965, 123–124). A good deal of the war was funded domestically; Latvia took out at least two domestic loans to fund the military operations (“The Baltic States: A Survey of the Political and Economic Structure and the Foreign Relations of Estonia, Latvia, and Lithuania” 1938, 135). The Latvian government also issued a substantial number of Latvian Roubles (A.K. 1920, 41).

Caveats and Concerns:

During the time of conflict with Russia, Latvia was in the position of establishing statehood. This meant that war financing was taking place while the country was developing its financial system. In a relatively short period of time, Latvia went from having no paper currency to have millions of notes in circulation. Consequently, it is hard to differentiate between how much currency was printed (i.e. non-monetized debt) versus money placed in circulation that was properly monetized.

Notes:

For information on general finance, see Hiden and Salmon (1991, 77), Bilmanis (1947, 341–342), “The Baltic States: A Survey of the Political and Economic Structure and the Foreign Relations of Estonia, Latvia, and Lithuania” (1938, 135), and “Annual Report of the Director of the Mint” (1921, 201). For more on domestic borrowing, see Ekis (1943, 79). For more on money issuance, see Balabkins and Aizsilnieks (1975, 38). For more on foreign credit, loans, and aid, see Bilmanis (1947, 341–342), “The Baltic States: A Survey of the Political and Economic Structure and the Foreign Relations of Estonia, Latvia, and Lithuania” (1938, 135), Parker (1920, 30, 114–116), Mullendore and Lutz (1941, 42), Mangulis (1983, 47, 64), O’Connor (2003, 80), Clemens Jr. (1991, 35), Balabkins and Aizsilnieks (1975, 39), and Ekis (1943, 79–80, 95). For more information on direct foreign military support, see Mangulis (1983), “The Baltic States: A Survey of the Political and Economic Structure and the Foreign Relations of Estonia, Latvia, and Lithuania” (1938, 25), and Tarulis (1965, 123–124).

RUSSIA**Overview:**

See the Estonian War for Liberation.

RUSSO-POLISH WAR (1919–1920)**POLAND****Overview:**

Poland was funded in great part by foreign sources, notably the Western powers: the United States, France, and Britain. Poland was the largest recipient of the United States’ wartime liquidation of surplus material from WWI (Parker 1920, 30). France also offered the Polish

government a line of credit to purchase war-related materials (Davies 1983, 92; Pipes 1993, 179). While somewhat more reluctant, the British did offer some direct support, for instance, by sending warships to Danzig in order to ensure that imported supplies were unloaded (*Annual Register* 1921, 202–203). It also appears that General Haller's army, which fought on behalf of Poland, was under French authority when it came to the aid of the Polish army (though it is not clear who funded this mercenary army) (Cisek 2002, 6). The newly formed Polish government also received a sizable loan from the 2.4 million-strong Polish-American Diaspora—the Polonia (Lachowicz 2011, 96). An estimated 24,260 American Poles signed up to serve in the Polish army, as well as 17 (non-Polish American) pilots that made up the famous Kościuszko Squadron (Cisek 2002, 5–6). Much of the paper money newly printed by the Polish treasury went to the war effort. And finally, given that Western aid was conditioned on limited Polish aggression (resisting imperial aims and sticking to ethnic boundaries), when Poland counter-advanced, they were funded in a greater part by plunder (*The Annual Register* 1921, 198).

Caveats and Concerns:

During the time of conflict with Russia, Poland was in the position of establishing statehood. This meant that war financing was taking place while the country was developing its financial system. In a relatively short period of time, Poland went from having no paper currency to having millions of notes in circulation. Consequently, it is hard to differentiate between how much currency was printed (i.e. non-monetized debt) versus money placed in circulation that was properly monetized (see Watt 1998, 203).

Notes:

For information of war costs and military spending, see Adams (2009, 12) and Davies (1972, 41). For information on foreign credit and aid, see Adams (2009, 12–13), Watt (1998, 203), “America's Credits to Poland” (1920, 8), Parker (1920, 30), Cisek (2002, 22), Pipes (1993, 179), Davies (1972), and Landau and Tomaszewski (1985, 43). For information on direct military aid, see Cisek (2002, 6). For more on the loan from Polish-Americans and non-Polish nationals volunteering for military service, see Pease (1986), Cisek (2002, 5), Lopata and Erdmans (1994, 100), and Lachowicz (2011, 96). For additional information on money issue, see *Soviet Russia*, (1920, 450) and Watt (1998, 203). For more information on the role of plunder in Polish military campaigns, see *Annual Register* (1921) and Borzęski (2008, 23).

RUSSIA

Overview:

See the Estonian War for Liberation.

FRANCO-TURKISH WAR (1919–1921)

FRANCE

Overview:

The French military budget for 1921, the last year of the Franco-Turkish War, shows 2.814 billion francs in expenditures, of which about half were earmarked for wars in Syria, Turkey, and Morocco (Friedman 1922, 119). Taxes were the most significant source of revenue for France during the war with Turkey. In 1920, a series of special and general income taxes were introduced along with taxes on real estate and mining income (Friedman 1922, 120). It is

estimated that these taxes raised 3.6 billion francs (Gide 1919, 129). Domestic borrowing may have played a minor role; the Bank of France is estimated to have loaned between 37 and 40 billion francs to the French government (Gide 1919, 133).

Caveats and Concerns:

While tax measures and revenues are well documented, much remains unclear about French war finance in the immediate aftermath of World War I, which ended in 1918. It is impossible to ascertain which measures can be directly attributed to covering the costs of war (let alone this war among the others France was engaged in at the time) versus covering the costs of World War I. Likewise, the instability after the war means that what few records that do exist are largely incomplete and/or inaccurate.

Notes:

For more on taxation and domestic loans, see Gide (1919, 129–137). For more on taxation, see Friedman (1922, 119–121).

TURKEY

Overview:

Foreign borrowing was the main strategy for Turkey's financing of its involvement in simultaneous wars with France and Greece in 1919–1922. The Khilafet Committee, an Indian Muslim group, sent funds to Mustafa Kemal for use in these conflicts (Kinross 1968, 298). The Bolsheviks in Russia also provided support in the hopes of distracting the West from the ongoing Russian Civil War (Kitabevi 2000, 87). In 1919, the first year of the war, Turkey's total expenditures amounted to £T 51,969,711, with revenues of just £T 34,016,698. By 1921, the debt had reached £T 465,673,338, £T 234,155,138 of which was associated with the costs of war (Colby 1922).

Caveats and Concerns:

Just because foreign funds were sent to Turkey does not mean that the funds were spent. Evidence suggests, for example, that Mustafa Kemal opted not to spend funds received from India (Kinross 1968, 298). Exact figures for Russian contributions are also unclear.

Notes:

For more on the cost of war, see Colby (1922).

GRECO-TURKISH WAR (1919–1922)

GREECE

Overview:

The 1920–1921 budget for Greece shows total war expenditures of 532,115,487 drachmas, with revenues of 1,033,579,740 drachmas including 472,500,000 in loans (Keltie & Epstein 1922, 991). By 1922–1923, the total overall cost of war expenditures was estimated at more than 4 billion drachma—"roughly two-thirds of total government spending" (Mazower 1991, 63). The war was domestically financed, including some loans from the National Bank (including a 150 million drachma advance in December 1921) and a heavy income tax authorized in 1920 ("The Kingdom of Greece" 1922, 41). The government also launch a forced domestic bond campaign

in 1920: All paper currency was required to be physically cut in half, with one half of the currency bearing one-half of the original note's value, and the other half representing a Greek government bond (Pratt 1922, 84). This measure was able to raise 1.3 billion drachmas without printing new notes (Mazower 1991, 64), though many notes were printed later in the war (Mazower 1991, 60). International finance played little-to-no role in Greek war finance, since Greece was largely "excluded from foreign capital markets" at the time (Mazower 1991, 60).

Caveats and Concerns:

Given the general instability in Greece at the time, estimates of the cost of war and the contributions of various forms of finance are not certain to be totally accurate. Likewise, the precise amount of money raised via printing and taxation is not known.

Notes:

For more on the total cost of the war, see Keltie and Epstein (1922, 991) and Mazower (1991, 63–64). For more on domestic borrowing, see "The Kingdom of Greece" (1922, 41). For more on taxation and borrowing, see Mazower (1991, 63). For more on the forced domestic bond campaign, see Pratt (1922, 84) and Mazower (1991, 64). For more on printing money, see Mazower (1991, 62).

TURKEY

Overview:

See the Franco-Turkish War.

SECOND SINO-JAPANESE WAR (1931–1933)

JAPAN

Overview:

The war cost Japan about 549,400,000 yen (Economic Intelligence Service 1938b, 9). For this conflict the Japanese government did not set up a separate war account as it had done in the Sino-Japanese War, 1894–1895, and the Russo-Japanese War, 1904–1905; instead, the war was funded domestically by a process known "Takahashi finance," which was essentially a government bond issuance campaign that sought to cover wartime expenditure without resorting to raising taxes (Takahashi 1967, 654). The war was additionally funded by budgetary surplus from other budget items and from contingency budget reserves (Nihon Ginko 1948, 72–73).

Caveats and Concerns:

None.

Notes:

For more information on war finance, see Economic Intelligence Service (1938b, 9–10), Nihon Ginko (1948, 25, 70, 72–73), Takahashi (1967, 654), and Hirai (2003, 114). For more on domestic borrowing, see Takahashi (1967, 654), Hara (1998, 233), Sokolsky (1933), Economic Intelligence Service (1938b, 13), Cho (1967, 581–583), and Nihon Ginko (1948, 20–21).

CHINA

Overview:

The war cost China roughly \$997,400,000 (Economic Intelligence Service 1938a, 8). This sum includes the funds raised by the central government and some of the funds contributed by the many provincial and local governments. The central government's involvement in war finance was principally in the form of domestic borrowing, while the provincial governments each had control of their own tax policy (Eastman 1986, 139–140). Even though the rural tax burden appears to have increased during the war, the variation of tax policy between localities and the paucity of data make it difficult to definitively say that war taxes were used to fund the war (Eastman 1986, 155).

Caveats and Concerns:

Since China's central government had a relatively limited control of the nation's fiscal policy, and since provincial governments largely set their own tax policy (and these varied widely), it is difficult to know precisely how the war was funded, much less how much it precisely cost. It, however, remains the case that there was no direct foreign funding related to the war effort.

Notes:

For more information on war finance, see Economic Intelligence Service (1938b, 8) and Feuerwerker (1983, 99–109). For information on domestic borrowing, see Feuerwerker (1983, 108–112), Eastman (1986, 139–140), Young (1971, 37, 94–96, 433–440, 463–466), Economic-Intelligence Service (1938a, 8–10), Kong and Liu (2007, 98), and Cheng (2003, 115–116, 118).

CHACO WAR (1932–1935)

PARAGUAY

Overview:

Paraguay's war effort was financed by foreign borrowing ("Chaco: War of Oil Finance" 1934). With loans from Europe and other Latin American countries, including a \$5 million loan from Argentina, Paraguay was able to spend \$125 million during the war (Shea 2013, 18, Farcau 1996, 199). Likewise, Paraguay also arranged deals with European contractors to receive military equipment at very low costs (Shea 2013, 18). Domestic elites also made significant contributions to the Paraguayan war effort (Shea 2013, 18). Plunder was also part of Paraguay's war finance strategy (Zook Jr. 1960, 241).

Caveats and Concerns:

The actual cost of the war to Paraguay is unclear. While one source notes that the \$125 million spent by Paraguay was "far more" than Bolivia spent (Shea 2013, 18), another account notes that Bolivia spent more than \$200 million (Lehman 1999, 72). Similarly, it is hard to know just how much Paraguay raised through informal channels such as plunder or donations. Contributions from domestic lenders also appear to be largely undocumented.

Notes:

For more on Paraguayan domestic and foreign borrowing, see Shea (2013, 17–19). For more on oil and international finance, see "Chaco: War of Oil Finance" (1934).

BOLIVIA

Overview:

The war is estimated to have cost \$200 million (Lehmann 1999, 72). Unlike Paraguay, which enjoyed great success in acquiring international finance, Bolivia had a much harder time raising funds for the Chaco War. While there were international oil interests in Bolivia (“Chaco: War of Oil Finance” 1934), there was much more skepticism concerning Bolivia’s ability to meet its debt obligations than there was concerning Paraguay (Shea 2013, 15). Given these failed foreign loan attempts, Bolivia focused on domestic loans largely from mining companies. These loans, however, were accompanied by conditions that prevented them from taxing the mining companies and that the mining companies could heavily influence decisions about how loan money would be spent (Shea 2013, 17). Overall, there were some efforts to raise emergency taxes, but they were largely unsuccessful (Gallo 1991, 149). Bolivia also borrowed 400 million pesos from the Central Bank (Gallo 1991, 112). By 1935, Bolivia had an internal debt of 368,637,000 bolivianos and an external debt of 262,429,000 bolivianos (Contreras 1990, 267).

Caveats and Concerns:

Bolivia’s war finance is actually relatively well documented. The overall cost of the war remains somewhat unclear given that the estimated cost was \$200 million—despite the fact that one source notes that the \$125 million spent by Paraguay was “far more” than Bolivia’s expenditures (Shea 2013, 18). Figures about precisely how much money was raised by taxation and domestic loans from mining companies are also unknown.

Notes:

For more on domestic loans, see Zook Jr. (1960, 241), Gallo (1991, 112), Contreras (1990, 282–284), and Farcau (1996, 20). For more on efforts at foreign finance, see Farcau (1996, 235), Shea (2013, 15–18), and “Chaco: War of Oil Finance” (1934). For more on taxation, see Gallo (1991, 106, 149) and Harris (1972, 268).

ITALO-ETHIOPIAN WAR (1935–1936)

ETHIOPIA

Overview:

Ethiopia could not rely on other countries for financial help (its repeated requests were denied), it largely had to fund the war effort domestically (Pankhurst 2003, 10; Sbacchi 1997, 13). Given its limited resources, Ethiopia had to depend on the considerable military build-up that had taken place before the war began (Pankhurst 1968, 540; Sbacchi 1997, 13). During the war, the Ethiopian government was able to secure some foreign credit, though to what extent is not exactly clear, from Germany, Belgium, and Russia (Westermann 2003, 155; Sbacchi 1997, 42). The government was able to obtain a limited number of imports from Belgium, Czechoslovakia, Yugoslavia, and to a much lesser extent from Japan (Pankhurst 1968, 607). Sweden, Belgium, Turkey, and Russia all sent officers to help train the Ethiopian army and perhaps some minimal amount of material support as well (Mockler 2003, 48–51). Some African Americans made donations to the Ethiopian war effort, but the amounts were negligible (Sbacchi 1997, 15). Most of the foreign aid that can be accounted for was sent in the form of International Red Cross donations. Over 2 million Swiss Francs in Red Cross aid was sent to Ethiopia (Baudendistel 2006, 60–61). But these funds, of course, were not used in direct military operations.

Caveats and Concerns:

Ethiopia had a very primitive finance system in the 1930s. There were no budgets, centralized accounting, or clear tax structure; there was no real difference between Emperor Salassie's personal finances and the country's (see Dame 1948, 190). A great deal of domestic funding depended on local Rases to raise and fund troops (see Barker 1968, 40–41; Ofcansky & Berry 1993, 297). The primitive nature of Ethiopian finance makes it difficult to know exactly how much the war effort cost.

Notes:

For domestic funding, see Marcus (1994, 142), Ofcansky and Berry (1993, 297), and Pankhurst (1968, 540). For more on foreign credit and aid, see Mockler (2003, 51), Pankhurst (1968, 607), Westermann (2003, 155), and Sbacchi (1997, 13). For information on foreign countries sending officers to help train the Ethiopian military, see Mockler (2003, 48–50). For African American donations, see Sbacchi (1997, 15). For Red Cross funding, see Baudendistel (2006, 60–61).

ITALY

Overview:

The war cost Italy upwards of 33.5 lire (Sullivan 1986, 187). Italy was forced to finance this conflict domestically due to sanctions imposed by the League of Nations (Hufbauer, Schott, and Elliott 1990, 72). During 1936 Italy operated almost entirely under a closed economic system, *le contro-sanzioni*. The war was financed through the rationing of raw materials, consumer goods and services, increased taxes on certain items, and gold and silver donation drives (Baer 1976, 159–160, 165–166). The government was able to raise sizable sums by selling bonds (which also included the required investment of corporate profits exceeding 6%) (Baer 1976, 168–169). The Italian treasury increased the circulation of convertible currency by some 4 billion lire and suspended the required 40% minimum gold cover held in the reserve (Baer 1976, 165–166). Italy also received some donations from the Red Cross and a negligible amount of donations from Italian Americans (Venturini 2001, 203; DeRoche 2006, 106).

Caveats and Concerns:

There are some discrepancies in terms of total war costs. Knight (2003) claims the war imposed a financial burden of 40 million lire, but this may be referring to war-related deficits and not the total cost of the war (90). Baer (1976) argues the budget deficit of 1936 was over 1.6 billion lire (245). These figures seem low since in the build-up to war Italy was allocating billions of lire to its army and navy annually (Gooch 2007, 298). Zamagni (1998) argues that 27.759 billion lire were spent on the war (203), while Sullivan (1986) writes that the Italian government claimed the war cost 12.1 billion lire but “the true figure was 33.5 billion” (187). And finally, it is not entirely accurate to describe Italy as operating under a completely closed economy; the sanctions imposed by the League of Nations did not include the key imports of oil, coal, or steel, which the Italians were still able to acquire from the United States, Japan, India, Czechoslovakia (see Hufbauer, Schott, and Elliott 1990, 72).

Notes:

For Italian military budget and cost of war figures, see Gooch (2007), Knight (2003, 90), Sullivan (1986, 187), Zamagni (1998, 198), de Johannis (1936), and Cortesi (1936b). For information on Italy's closed economy and rationing, see Baer (1976, 158–159, 245). For information on taxation, see Zamagni (1998, 197) and Baer (1976, 165–166). For more on gold

and silver drives, see Baer (1976, 159–160) and Ferris (2012, 134). For more on the sale of bonds, increased circulation of currency and the suspensions of minimums on gold cover reserves, see Baer (1976, 165–166), Cortesi (1936a), Cortesi (1936b), and de Johannis (1936). For additional information on Red Cross donations, see Venturini (2001, 203). For more on Italian-American donations, see DeRoche (2006, 106).

THIRD SINO-JAPANESE WAR (1937–1941)

CHINA

Overview:

It is reported that extraordinary military expenditures associated with China's engagement in the war amounted to C\$5.8 billion and total cash war cost reached C\$22.1 billion (Young 1965, 15–16). More specifically, the estimated military expenditure—consisting of ordinary military expenditure, defense, extraordinary and emergency expenditure, and expenses on food provision for the military—are reported at about C\$14.2 billion for the years 1937–1941 (Young 1965, Table 3). The government financed the war with revenue obtained mostly through borrowing and government savings schemes and marginally through taxation and sales of foreign currencies. Specifically, the government obtained about C\$18.3 billion from sale of bonds, bank loans, and income on bonds (Young 1965, Table 2). By 1941, about 81% of cash war costs appear to have been covered by expansion of bank credit, which more than doubled since 1938 (Young 1965, 20). Financing the war through taxation proved rather problematic, accounting for only about C\$3.8 billion of war revenue (Young 1965, Table 2). The government was administratively unprepared to use taxation as a source of revenue and hesitant to increase direct taxes so as not to alienate the suffering population. Increased rates of consolidated tax, tax on wine and tobacco, and excess profits tax appear to have brought in most tax revenue. About C\$1.3 billion is estimated to have come from sales of foreign currencies for the period from 1938–1941 (Young 1965, Table 4).

Caveats and Concerns:

The quick outbreak of war precipitated a great increase in costs. However, it should be taken into consideration that, “The data do not make possible a precise statement of total military expenditure. Outlay for such purposes as communications, economic development, and subsidies to provincial and local governments was mainly for war ends. On the other hand ‘emergency’ expenditures, which I have classified under military, doubtless contained some non military components” (Young 1965, 15–16). In terms of war financing, taxation proved to be rather problematic. It is reported that, “In the prewar years revenue came mostly from customs, salt taxes, and taxes on factory production...Indiscriminate bombing behind the lines, while stiffening the will to resist, added to the confusion. China's leaders were harassed by constant emergencies. Few in China were qualified to take part in devising and installing a new tax system. When to government was driven from Nanking to Hankow, and then to Chungking, many experienced administrators could not follow...Moreover, revenue policy, especially during the early part of the war, was influenced by the view that the people's tax burden should not be made heavier because they were already so poor and suffering so much...Direct taxes introduced by the government only in 1936, and the income tax of that year had no wide coverage when the fighting began. In 1938 the income tax was broadened to cover income from rentals and business profits. But its yield was of only minor importance in the early war years” (Seligman 1919).

Notes:

For further information on the cost of war see Young (1965, Table 7, 15–16). More detail on the budget, including data on expenditure, non-borrowed revenue, and borrowing-covered deficit for the years 1929–1945 can be found in Young (1965, 12). An itemized list of indirect and direct taxation can be referenced in Young (1965, Table 2). Data on counter inflationary cash receipts, including extra budgetary transactions can be found in Young (1965, Table 4). For further detail on cash deficit, see Young (1965, Table 7). For a percentage distribution of receipts covering the period from 1937 to 1945, consult Young (1965, Table 11). For a percentage breakdown of war costs covered by expansion of bank credit for the years 1938 to 1941, see Young (1965, 20). For data on government bonds dominated in *frapi*, see Young (1965).

JAPAN**Overview:**

The total cost of Japan's involvement in the Third Sino-Japanese War is estimated at ¥37.5 billion (Hara 1998, 257). The war was financed primarily through borrowing, savings campaign, financial controls, and taxation. In terms of borrowing, the government relied on a practice called the "Bank of Japan acceptance system." This policy essentially enabled the government to borrow money directly from the central bank, which resold the accepted bonds to other financial institutions. In addition, the government made use of the Ministry of Finance Deposit Bureau's savings deposit system. Militarization of the industrial structure was another way for the government to support the war effort. This measure, however, resulted in controls on trade, foreign exchange and finance, and consequently on prices and allocation of commodities. Japan's government also attempted to finance the war through several tax increase measures, such as the Northern China Incident Tax Law of August 1937 and the China Incident Special Tax Law and the Temporary Tax Collection Increase Law of March 1938. In the end, however, taxation proved inadequate for meeting war expenditure. In fact, government officials became acutely aware of the real limitations of Japan's tax capacity. This reality essentially paved the way for launching of the National Savings Encouragement Campaign, which was aimed at raising citizens' savings. Although the savings campaign proved critical to the war financing effort, it was not sufficient. The government had to increasingly rely on printing money to finance its war involvement. Specifically, just between 1937 and 1941, the Bank of Japan notes issues increased by about ¥1 billion each year (Fujihira 2003, 18).

Caveats and Concerns:

Japan's attempt to finance its war effort appears to have resulted in various structural and financial reforms that had been driven in a top-down manner and resulted in various disruptive and exhaustive measures. For example, the decision to militarize the industrial structure had a restrictive effect on the civilian industry: "Provision of equipment funds, foreign currency and imports of machinery into civilian industries were severely restricted. Imports of civilian commodities, especially cotton, wool, and timber, were reduced drastically" (Hara 1998, 235). Japan's war-financing efforts resulted in the need for increased imports, but because of the onset of serious inflation and banks' inability to raise sufficient foreign currency, it became necessary to impose foreign exchange and eventually import exchange controls. These problems were further aggravated by the incremental and piecemeal tax increases, which did not provide a

useful solution to the government's debt problem and in fact further complicated the tax structure by having it rely on a number of small taxes (Fujihira 2003, 24).

Notes:

For more detail on the annual war expenditures from 1937 to 1941, see Hara (1998, 257). Further discussion on the borrowing measures taken by the government can be found in Hara (1998, 257) and Fujihira (2003, 18). More detail on the rationale and the mechanism of the bond and savings campaign can be found in Fujihira (2003, 29–30). For further discussion on taxation, see Fujihira (2003, 3–4, 17, 24). Specific information on issuing of Bank of Japan notes can be referenced in Fujihira (2003, 18). Discussion on militarization of Japan's industrial structure can be found in Hara (1998, 235). More detail on the various trade and financial controls can be referenced in Hara (1998, 233–234).

WORLD WAR II (1940–1945)

ITALY, 1940–1943

Overview:

World War II is estimated to have cost Italy between 277 billion lire (Tesoro 1944, 166) and 357.4 billion lire (Zamagni 1998, 198). For the period before the surrender of the Badoglio Government in September 1943 the war cost an estimated 158.653 billion lire (Zamagni 1998, 203). These wartime expenses were primarily funded domestically through the printing of paper lire (Raspin 1986, 274–275), public debt in the form of Treasury bonds (Zamagni 1993, 250–254), and increased taxation (Tesoro 1944, 168; Southard 1979, 62).

Caveats and Concerns:

None.

Notes:

For more information on war financing, see Liesner (1989, 244–245), Raspin (1986, 117–118, 274–275), Zamagni (1993, 245, 255) and Tesoro (1944, 166). For more on printing, see Tesoro (1944, 185–186) and Raspin (1986, 274–275). For more on public debt and the issuance of Treasury bonds, see Zamagni (1993, 250–254), Zamagni (1998, 206–208), and Tesoro (1944, 182–183). For more information on war-time taxation, see Zamagni (1993, 253) and Tesoro (1944, 167–171).

JAPAN

Overview:

WWII cost Japan a total of 136.227 billion yen between 1941 and 1944 (Hara 1998, 257). At first, attempts were made to pay these costs through increased income taxes and taxes on alcohol, luxury goods, and entertainment, but when it quickly became apparent that this would not work, Japan turned to debt and the printing of money to finance its efforts in the Pacific theater (Fujihira 2003, 3–4). The sale of government bonds abroad as well as to ordinary Japanese citizens was a key part of the government's strategy (Hara 1998, 257; Fujihira 2003, 18), as was the printing of more than 35 billion yen between 1942 and 1945 alone (Fujihira 2003, 18).

Caveats and Concerns:

Though there are figures for the cost of WWII for Japan for 1941–1944, no figure exists for 1945 (Hara 1998, 257). Likewise, it is unknown precisely how much money was raised through the sale of bonds—though taxation records are, by contrast, well kept.

Notes:

For more on the cost of WWII to Japan, see Hara (1998, 257). For more on Japanese taxation during WWII, see Fujihira (2003, 28, 35). For more on bonds, see Fujihira (2003, 18, 31–32, 36). For more on the printing of yen, see Fujihira (2003, 18, 37).

USSR

Overview:

Its efforts in WWII cost the USSR 639.2 billion rubles (Harrison 1998, 275). These funds were raised partly through taxation, including increases in both direct and indirect taxation and the introduction of both a progressive income tax system and an excess profits tax (Harrison 1998, 275; Millar 1980, 114). War lotteries and Red Army/Defense Funds contributed 32.1 billion rubles to Soviet coffers (Harrison 1998, 276). The sale of bonds to the population, as well as to the state savings bank and social insurance systems also raised some funds (Millar 1980, 117). Additionally, the USSR received a significant amount of funds from the United States via the Lend-Lease program.

Caveats and Concerns:

As Millar (1980, 116) pointed out, Soviet finance figures are unclear because, “[i]t is impossible to determine precisely just what total of funds was raised through financial channels on a net basis because Soviet budgetary data are not presented fully in any official source.” Similarly, the amount of funds received from the United States via the Lend-Lease program is unclear: Hancock and Gowing (1949, 375) placed the figure at \$10,670,000,000, while Harrison (1998, 275) put it at 92.7 billion rubles and Millar (1980, 116) put it 5 billion rubles.

Notes:

For more on general sources of Soviet finance, see Harrison (1998, 275–276). For more on Soviet war taxation, see Millar (1980, 114). For more on domestic contributions, see Millar (1980, 115). For more on foreign contributions, see Hancock and Gowing (1949, 375), Harrison (1998, 275) and Millar (1980, 116).

GERMANY

Overview:

It is estimated that WWII cost Germany about 400 billion RM (Klein 1959, 258). The war was financed via taxation, domestic debt, and plunder. In regards to plunder, a significant portion of the war was paid through the occupation costs Germany leveled upon the countries it occupied during the war, which are estimated to total 84 trillion RM (Abelshauser 1998). Taxes on Germans, however, were not a part of the country’s strategy at first; instead, the German government chose to focus on a national savings and rationing plan, as outlined by Economic Minister Funk in 1939. By 1942, however, this was unsustainable, and a one-time prepayment of ten years’ worth of taxes was arranged, collecting 8 billion RM (Tooze 2006). Private investors also invested heavily in the German state, since the government outlawed all other forms of investment bearing assets. Simply put, there state was citizens’ only investment option (Tooze

2006). The government also issued some medium- and long-term debt, and by the end of the war, a significant amount of expenditures were covered by short-term debt (Nathan 1944, 95).

Caveats and Concerns:

The exact cost of WWII to Germany is unclear—many different sources provide different estimates of the cost, though the Klein figure cited above is a relatively average figure. Likewise, the figures for German plunder (84 trillion RM) seem incredibly high relative to the average estimated cost of the war.

Notes:

For more on the cost of WWII to Germany, see Lindholm (1947, 127), Overy (1982, 283), Nathan (1994, 97), and Klein (1959, 153).

UNITED KINGDOM

Overview:

WWII cost the United Kingdom an estimated £20.675 billion (Hancock and Gowing 1949, 75). Of this, taxes raised a total of £17.523 billion (Hancock and Gowing 1949, 199). £15.135 billion was also borrowed domestically, and £350 million was borrowed from the United States, Canada, and the Reconstruction Finance Corporation (Hancock and Gowing 1949, 347).

Caveats and Concerns:

None.

Notes:

For more on the cost of WWII to the United Kingdom, see Sayers (1956, 504–512). For more on general British war finance, see Hancock and Gowing (1949, 75, 199, 347).

UNITED STATES

Overview:

It is estimated that WWII cost the United States about \$300 billion (Murphy 1950, 50) and Studenski and Kroos (1952, 51). \$42.9 billion of this was the net cost of advances made to other countries as a part of the Lend-Lease Program (Studenski and Kroos 1952, 441). A large part of these costs were covered through raises in various domestic taxes, which raised \$182.7 billion during the war (Studenski and Kroos, 1952, 450). Studenski and Kroos (1952, 436) estimate that 46% of the costs of the war were financed via taxation. Domestic borrowing was another key strategy; the sale of domestic loans, including Seven-Year loans and Victory loans, raised more than \$40 billion (Murphy 1950, 154). The sale of various financial instruments to American banks and investors raised another \$60.7 billion (Murphy 1950, 158–161).

Caveats and Concerns:

The precise cost of WWII to the United States is unclear because there is some debate as to what exactly qualified as a war expenditure. As Murphy (1950, 51) noted, “Throughout the entire period, the distinction between war and nonwar expenditures was extremely fuzzy. The whole economy was at war, and there would have been at least as much reason for classifying as ‘war’ some government expenditures actually classified as ‘nonwar’ (e.g., tax refunds and interest on the public debt) as there would have been for classifying as ‘nonwar’ other borderline

expenditures actually classified as ‘war.’” The \$300 billion dollar figure cited here is roughly the average of estimates provided in the literature, which range from \$288.8 billion (Studenski and Kroos 1950, 51) to \$321.3 billion (Murphy 1950, 50). Similarly, the amount raised by the sale of domestic loans is unclear; while Murphy (1950, 154) put the amount raised at \$43.3 billion, Studenski and Kroos (1952, 454) placed the figure at \$49.283 billion.

Notes:

For more on the cost of WWII to the United States, see Studenski and Kroos (1952, 51) and Murphy (1950, 50). For more on Lend-Lease, see Studenski and Kroos (1952, 441). For more on taxation, see Studenski and Kroos (1952, 448). For more on domestic borrowing, see Murphy, (1950, 158–161).

FIRST KASHMIR WAR (1948–1949)

PAKISTAN

Overview:

The total cost of war is reported at 1.33 billion rupees or \$401.8 million (*Military Budgets of Selected Countries*, 1949). Pakistan reportedly adopted a “political economy of defense,” allotting 70% of the national budget for defense from 1947 to 1950 (Talbot 1998, 118). Pakistan’s war effort appears to have been financed domestically through taxation, borrowing, and transfers to reserve funds. However, due to the method of data collection, it is not entirely clear how much revenue was used to finance the war effort and where it originated. However, data from one source suggests that during the fiscal years of 1947–1948 and 1948–1949, the revenue receipts reached a total of 866.5 million rupees and was composed mostly of customs receipts, income and corporation tax, and central excise duties tax (Andrus and Mohammed 1958, 317).

Caveats and Concerns:

There appear to be a couple of problems with the collection of war-financing data: (a) “the institutional capacity for collection, analysis, and dissemination of statistics was relatively underdeveloped...” and (b) “the method of presenting budget-related information has changed over the years...” (Pasha and Fatima 1999, 201–202). Seemingly, it was only since 1975–1976 that the Ministry of Finance “has been publishing annually the summary of public finance, consolidated for the federal and provincial governments, with a clear separation between tax and non-tax revenues on one hand and between current development expenditures on the other” (Pasha and Fatima 1999, 201–202). It is perhaps also for this reason that records show certain discrepancies in the data related to war expenditures and war revenue. For example, total military expenditure in one source is reported as comprising about 48%–58% of total government expenditure (*Military Budgets of Selected Countries*, 1949), but the data in Rizvi suggests defense expenditure at 71.3% of total expenditure (Rizvi 2000, 63). In the context of Pakistan’s endorsement of “political economy of defense” (Talbot 1998, 118), Rizvi’s data appears to be more consistent with the defense philosophy mentioned in Talbot. Another example can be found in relation to war expenditure. One source cites war expenditure at 1.33 billion rupees (*Military Budgets of Selected Countries*, 1949), while another source has expenditure on defense services at 153 million rupees for the fiscal year 1947–1948 and 461 million rupees for the fiscal year 1948–1949 (Andrus and Mohammed 1958, 317). Even if data in Andrus and Mohammed for

both fiscal years was taken into account, defense related expenditure would still seem much lower than the estimates cited in *Military Budgets of Selected Countries* (1949).

Notes:

For more data on the cost of war, consult *Military Budget of Selected Countries* (1949) and Rizvi (2000, 63). Data on central budget revenue including taxation can be found in Andrus and Mohammed (1958, 317) and Pasha and Fatima (1999, 204). For further discussion on the scarcity of foreign exchange and an overvalued exchange rate, see Pasha and Fatima (1999, 204). More detail on the topic of austerity measures can be found in Talbot (1998, 118). For further discussion on the data collection problems refer to Pasha and Fatima (1999, 201–202).

INDIA

Overview:

The military expenditure related to India's participation in the First Kashmir War is reported at \$707 million for 1948 and at \$443.5 million for 1949, reaching a total of \$1.15 billion or 3.8 billion rupees for the total cost of war (*Military Budgets of Selected Countries*, 1949). The war effort was financed with revenue estimated at 361.7 million rupees (Sarkar 2007, 125). It is not entirely clear how much revenue came from taxation, domestic or foreign loans, or from other sources.

Caveats and Concerns:

While the total military expenditure in 1949 appears to be much lower than the expenditure in 1948, the percentage of total military expenditure out of total national expenditure is almost the same for both years, quoted at about 26% (*Military Budgets of Selected Countries*, 1949). Also, expenses related to the army, navy, and air force are consistently higher in 1949 when compared to the data for 1948, but there is a significant decrease of "other military expenditure" in 1949. While the increase in army-, navy-, and air force-related expenditure in 1949 would be expected as a result of the nature of India's engagement in the war effort, the sharp difference in the category of "other military expenditure" might be attributed to the method of classification of military expenditure in general.

Notes:

For more detailed data on the total cost of war and the related cost to army, navy, and air force, see *Military Budgets of Selected Countries* (1949). For more information on war revenue, consult Sarkar (2007, 125).

PALESTINE WAR (1948)

ARAB LEAGUE

Overview:

It has been reported that Saudi Arabia financed about 20% of Arab League's military operations in support of the Palestinian cause (Rogan and Shlaim 2001, 239). There seems to be no further detail on further contribution key and international involvement in financing Arab League's involvement in the war.

Caveats and Concerns:

There appears to be no particular reference to how the remaining 80% of the Arab League's military operations was financed, although Syria, Jordan, Egypt, and Iraq were involved as well.

Notes:

For more information on Saudi Arabia's financing of Arab League's military operations see Rogan and Shlaim (2001, 239).

JORDAN

Overview:

War deployment of the 16,000 Jordanian Army officers cost about £5.194 million (Nowar 2002, 309). The Jordanian engagement in the war was financed through a British subsidy of about £2.5 million, Arab League funding in the amount of £230,000, a debt of £2 million, and unspecified Jordanian government's revenue in the amount of £84,000 (Nowar 2002, 309). There is no particular mention of taxation as a source of war revenue. It is estimated that about £500,000 of the British subsidy was used to secure weapons and ammunition (Nowar 2002, 70). There seems to have been a little bit of a diplomatic entanglement concerning the Arab League subsidy, which was originally promised in the amount of £3 million, but due to the stance of the Secretary General of the Arab League Abd al-Azzam, the amount ended up significantly smaller (Nowar 2002, 226).

Caveats and Concerns:

Based on the reported information, it appears that Jordan's war effort has been primarily financed through foreign subsidies. The revenue of Jordan government in the amount of £84,000 (Nowar 2002, 309) appears to be just a fraction of the overall cost of war and there is no further detail on how this revenue was raised.

Notes:

For general discussion of the cost of war and the general sources of war financing, see Nowar (2002, 309). For more detail on the British subsidy, refer to Nowar (2002, 70) and on the Arab League subsidy, see Nowar (2002, 226).

SYRIA

Overview:

Syrian government imposed several temporary measures affecting the government and the public to finance its involvement in the war. Specifically, members of the parliament deducted one month's pay from their salary to make a contribution to financing the war. The government also pledged 2 million Syrian pounds to the Arab League in support of the Palestinian cause (Tal 2004, 11). In 1947, a blue-ribbon committee was established with the aim to solicit monetary contributions. In 1948, the government imposed several surtaxes on imports that were arguably necessary for financing arms purchases and increased pay of soldiers. There appears to be no particular mention of reliance on foreign loans or domestic loans as a means to finance Syrian war effort.

Caveats and Concerns:

Apart from the members of the Syrian Parliament giving-up one of their monthly salaries as a way to support the financing of the war effort, there appear to be no further specifics on the

nature of the 2 million Syrian pound contribution to the Arab League. Without a numerical estimate of the cost of Syrian involvement in the war, it is difficult to ascertain how much of the war expenditures these government measures actually covered. Similarly, it is not exactly apparent just how critical the surtaxes on imports were, but they seem to have “provided the state not only with a means of regulating the flow of manufactured goods coming into the country but also with additional revenues to improve its precarious balance-of-payments position” (F. H. Lawson 1996, 167).

Notes:

For further discussion on the government involvement in funding the war, see Tal (2004, 11). More information on the blue-ribbon commission can be found in F. H. Lawson (1996, 166). For more detail on taxation as well as on the precarious balance-of-payments position, refer to F. H. Lawson (1996, 167).

EGYPT

Overview:

The reported estimates of Egypt’s overall war expenditure fall between £E 45 million (Nowar 2002, 309) and £E 67.5 million (Tignor 1984, 282–283), with Egyptian war spending being “about twenty times as much as the Arab Legion” (Nowar 2002, 309). It is reported that war loans and taxes comprised the primary sources of war revenue. At the beginning of the war, the Egyptian government issued a £E 9 million war loan, which was supplemented by a £E 21 million loan just a few days later (Tal 2004, 271). Taxation was also a significant form of revenue. In the fiscal year 1948–1949, tax related source of government revenue amounted to about £E120.5 million (Tignor 1984, 238–239). By far the greatest portion of tax revenue came from custom duties and excises (35.3% of government revenue), which was followed by income tax (6.7% of government revenue) and surplus profits tax (3.1%) (Tignor 1984, 238–239).

Caveats and Concerns:

Although Nowar’s £E45 million estimate of the total cost of war (Nowar 2002) is much lower than the £E 67.5 million estimate presented in (Tignor 1984), it may not be problematic because Nowar’s number does not include peacetime army budget. The more puzzling piece of information seems to pertain to the government revenue reported for 1948–1949. It seems to be twice as high as the estimate for war expenditure and could potentially suggest that the government had enough resources to fund the war. However, there is little indication of what was financed with the revenue that was available. If Tignor’s estimate is correct and the Egyptian government allocated about 21.3% of the budget to financing the war during the fiscal year of 1948–1949 (Tignor 1984, 282–283), then the war effort would appear to have been quite underfinanced. This would seem to be further validated by a report mentioning the austere circumstances of the Egyptian army: “It [the Egyptian Army] was so financially strapped that some of the tanks had no cannons. All of the equipment was British made” (Tal 2004, 158).

Notes:

For further discussion on war budget, see Nowar (2002, 309) and Tignor (1984, 2282–2283). For more detail on the percentage of budget allocations for war, refer to Tignor (1984, 282–283). Further discussion on the war loans can be found in Tal (2004, 271). A reference to Egypt’s belief in a short war can be found in Hail (1996, 50).

ISRAEL

Overview:

The total war expenditures associated with Israel's military engagement in the Palestine War amounted to about \$273 million (Greenberg 1988, 77). From April 1948 to December 1948, the cost of mobilization rose from £1 1.54 million to £1 5.37 million (Greenberg 1988, 67). It is reported that about 75% of the war was financed by internal sources, and the remaining 25% was covered by foreign aid (Greenberg 1988, 77). Internal sources of revenue consisted mostly of taxes, customs, and domestic loans and are reported to have reached about £1 59.8 million (Greenberg 1988, 69, Table 4), while outside sources were comprised of foreign appeals, food and equipment contributions in kind, as well as revenue from conquered land, buildings, and orange groves. Due to the emergency situation, the government immediately increased taxes by 100% for all income groups until foreign transfers from the world Jewry were first received (M. N. Barnett 1992, 161). It has been reported that in 1948, about 25.5% of the state income was derived from income taxes, 4.3% from property taxes, 62.5% from custom duties, and 7.7% from transaction fees (A. D. Barnett 1977, 77). Outside help is reported to have amounted to about \$64 million and, among other things, involved transfers from Geneva and donations from the United Jewish Appeal in the United States and South Africa (Greenberg 1988, 72–74). In the United States, Golda Myerson proved instrumental in raising funds among the U.S. Jews and in supporting the activities of the United Jewish Appeal, which is reported to have raised \$129 million of which about \$41.1 million was allocated toward defense purchases (Greenberg 1988, 73).

Caveats and Concerns:

One problem with understanding the financing of Israel's war effort is related to the complications with raising tax revenue during pre-state conditions. It would seem that “there was no systematic budget prepared in 1948 for the whole financial year; instead, hastily formulated three-month estimates of income and expenditure were approved” (Greenberg 1988, 63–64). Although the emergency situation prompted the government officials to drastically increase taxes, impose war duty at a rate between 5% and 25% and income tax at a rate of up to 75% of employees' monthly salary, there was still a threat that the economy might collapse (Naor 2006, 72–74). In addition, the government did not feel comfortable confirming the Income Tax Act and the War Duty Act before they were cleared by the Israeli public and the economic circles (Naor 2006, 72–74). Thus, it appears government income and duties “covered only a small portion of the rising cost of war” and the government had to rely mostly on foreign donations to finance the war (Greenberg 1988).

Notes:

For further discussion on the cost of war, see Greenberg (1988, 63–65, 67, 72, 77). More detail on the cost of mobilization can be found in Greenberg (1988, 67). For further discussion on the general war financing measures, consult Greenberg (1988, 63). For actual data on domestic sources of finance, see Greenberg (1988, 69). More detail taxation and related issues can be found in Tal (2004), Greenberg (1988), M. N. Barnett (1992, 161), Naor (2006, 72–75), and A. D. Barnett (1977, 77). For more information on contributions offered by the Jewish Agency, see Greenberg (1988, 72, 68). More detail on financing of the war through the Mobilization and Rescue Appeal, the Kofei Hayishuv (Yishuv Redemption Fund), loans, and contributions can be

found in Greenberg (1988, 68). For further discussion on the raising of war loans, see Naor (2006). For more information on the activities of Golda Myerson, see Greenberg (1988, 73). More detail on foreign sources of war financing can be found in Greenberg (1988, 72–74, Table 5).

KOREAN WAR (1950–1953)

NORTH KOREA

Overview:

While it is unclear exactly how much the war cost North Korea, it was funded primarily by loans, credits, and direct aid (in the form of debt cancellation and humanitarian assistance) from China and the Soviet Union. There were, however, some domestic sources of military funding as well. The North Korean government organized “The Fatherland Defense Assistance Association” in order to strengthen the People’s Army by way of “voluntary” donations. Essentially, individuals and private corporations were urged to donate funds to support the military (Suh 1988, 114). According to North Korean publications, the military was able to raise 280 million won domestically (Hun 1966, 31). Goods and material were also requisitioned and/or plundered from South Korean villages (Shrader 1995, 81).

Caveats and Concerns:

Due to the fact that North Korea remains a closed country, it is difficult to speak definitively about its wartime financing. Even the sums of the loans from China and Russia are estimates rather than taken from publicized sources (Eckstein 1966, 161). In any case, given what we do know, it is clear that foreign aid played a crucial role in North Korea’s military funding.

Notes:

For more information on war financing, see Suh (1988, 114), Hun (1966, 31, 241) United States (1960, 130–134), and Kuark (1963, 55). For more on foreign aid from China and Russia, see Eckstein (1966, 161), Hun (1966, 31–32, 190), Chung (1978, 17–18), Chen (1994, 156), Cho (1967, 226), Zhang (2011, 21), Shen and Xia (2012, 6), Shen (2012, 187–189), Rudolph (1959, 133–134), Goncharov et. al. (1993, 147), Shrader (1995, 65), Korea Institute of Military History (2000, 44–48), and Kuark (1963, 61). For more on “The Fatherland Defense Assistance Association” and domestic contributions, see Suh (1988, 114) and Hun (1966, 31). For more on the North Korean requisitioning and plundering of rations and materials, see Shrader (1995, 64, 81).

SOUTH KOREA

Overview:

The Korean War cost South Korea an estimated 3.668 billion won (Manson et al. 1980, 304). Fifty percent of South Korea’s budget during these years was spent on war expenses (Lee 2001, 99). A large part of this cost can be attributed to its loans to UN forces, which totaled about 30–35 million won from the government each month (Lee 2001, 17). These costs were paid through “the land tax and wage payments in kind, use of foreign currency, and the unorganized money markets” (Manson et al. 1980, 304). A temporary land tax was levied against farmers, and farmers paid this tax with farm products rather than cash; this measure alone is estimated to have accounted for 30% of tax revenue during the war (Lee 2001, 12). The South Korean government

also printed large amounts of money during the war (Manson et al. 1980, 326). Additionally, South Korea received extensive foreign aid and military assistance from the United States (Lee 2001, 104–105) and sold enemy assets at public auction, generating some small revenues (Lee 2001, 102).

Caveats and Concerns:

The exact amount of foreign aid and military assistance provided by the United States is unclear.

Notes:

For more on farm taxes, see Frank Jr., Kim, and Westphal (1975, 37) and Lee (2001, 99–101). For more on printing money, see Manson et al. (1980, 302, 326), Cole and Park (1983, 222), and Lee (2001, 99). For more on foreign aid, see Manson et al. (1980, 176, 177, 180). For more on U.S. military assistance, see Manson et al. (1980, 182–183) and Reeve (1963, 121). For more on selling enemy assets, see Lee (2001, 99, 102).

UNITED STATES

Overview:

According to the Congressional Research Service, the Korean War cost the United States \$320 billion (2008 USD) or \$52 billion in current year currency (Daggett 2008, 2). A 1950 tax bill (H.R. 8920) raised \$5 billion towards this effort by increasing both individual and corporate taxes (Bank, Kirk, and Thorndike 2008, 112–114). An excise profit tax signed into law in 1951 raised an estimated additional \$7 billion (Bank, Kirk, and Thorndike 2008, 114).

Caveats and Concerns:

Goldin (1980, 938) places the cost of the war at \$50 billion, while Clayton (1969, 149) puts it at \$59 billion.

Notes:

For more on the cost of the Korean War to the United States, see Goldin (1980, 938), Edelstein (2000, 338–339), and Bank, Kirk, and Thorndike (2008, 113). For more on taxation, see Bank, Kirk, and Thorndike (2008, 112–114).

CHINA

Overview:

The Korean War cost China 6.2 billion yuan—half of which was used for loans to purchase weapons from the USSR (Ryan, Finkelstein, and McDevitt 2003, 138). The country relied heavily on assistance from the Soviet Union, receiving an estimated \$1.37–\$2.24 billion in Soviet aid, stock, and military assistance (Barnett 1977, 30). China also imposed higher taxes upon its citizens—some of which were “voluntary” contributions, while others were paid in the form of the loss of plants and materials to the government (Bernstein and Lu 2003, 40).

Caveats and Concerns:

Estimates on the precise amount and type of aid China received from the Soviet Union vary slightly from text to text. Many sources also discuss “donations” from Chinese citizens; however, whether or not these were voluntary or forced leads to various assessments of the value of these contributions.

Notes:

For more on the cost of the Korean War to China, see Ryan, Finkelstein, and McDevitt (2003, 138), Gittings (1967, 91), Yin and Yin (1960, 89), and Prybyla (1970, 82). For more on Soviet assistance to China, see Barnett (1977, 30–31), Chai (2000, 209), Gill and Kim (1995, 20, 27), Eckstein (1966, 154, 157), and Goncharov, Lewis, and Xue (1993, 190).

AUSTRALIA**Overview:**

The Korean War is considered to have cost Australia L47,763,000 (Grey 2008, 209).

Caveats and Concerns:

According to Grey (2008, 209), “The financial cost of war [to Australia] is difficult to gauge, since it depends so much upon the criteria used.”

Notes:

For more on the cost of the Korean War to Australia, see Grey (2008, 209) and Carver (1959, 1102).

UNITED KINGDOM**Overview:**

The U.K. contributed 54.4% of the funds made available to the Korean Operation Pool Trust Account (Farrar-Hockley 1995a, 108).

Caveats and Concerns:

The precise total of the United Kingdom’s contributions to the Korean Operation Pool Trust Account is unclear.

Notes:

For more on contributions to the Korean Operation Pool Trust Account, see Farrar-Hockley (1995a, 108, 487, 489) and Grey (1988, 1980).

OFF-SHORE ISLANDS WAR (1954–1955)**CHINA****Overview:**

Communist China largely paid for military operations against the Chinese nationalists with the help of Soviet aid. Over the course of the war, Mao's government received development loans and credits worth between \$1.37 billion and \$2.24 billion (Barnett 1977, 30). Some military expenses were paid for through domestic borrowing. Through 1954–1955, the government was able to raise roughly 1,455,440,000 Yuan through bond issuance (Yin and Yin 1960, 87).

Caveats and Concerns:

There are no total-cost figures for this war. Furthermore, it is hard to determine the extent to which foreign aid aided in the war effort

Notes:

For more information of war financing, see Yin and Yin (1960, 85). For information on Soviet aid, see “China and Japan” (629), Barnett (1977), Eckstein (1966, 155–160), Garver (1997, 122), Elleman (2012, 70), and Gill and Kim (1995, 24–26). For information on domestic borrowing, see Yin and Yin (1960, 87).

TAIWAN**Overview:**

In regards to financing the war effort, the Chinese nationalists subsisted largely on foreign aid from the United States, which roughly amounted to \$527,000,000 in economic aid and \$948,000,000 in military aid (“United States Policy,” 457). This aid came in the form of economic and military loans, grants, food aid, and direct military assistance (Ho 1978, 110). The Taiwanese were able to raise some funds domestically in the form of taxes and customs duties (Jacoby 1966, 93).

Caveats and Concerns:

There are no estimated totals for the cost of the war. Furthermore, it is hard to determine the extent to which foreign aid aided in the war effort. Also, since the U.S. aid to Taiwan between the years of 1949–1967 is estimated at “over US\$4.1 billion in U.S. aid, of which US\$2.4 billion was U.S. military assistance,” it is difficult to know exactly how much of this was a direct result of the military operations in the years of conflict (Ho 1978, 111).

Notes:

For more information on domestic and war financing, see Lundberg (1979, 273, 302) and Jacoby (1966, 93–94). For information on U.S. aid, see “China and Japan (in two parts),” (1985, 631), “United States Policy” (457), Sun (1998, 77), Lundberg (1979, 272), Ho (1978, 108–111), Zhang (1992, 192–193), Jacoby (1966, 38–43, 120–121), Garver (1997, 66–69), and Accinelli (1996, 248–249). For information on domestic funding sources, see Lundberg (1979, 302–303).

VIETNAM WAR (1955–1975)**SOUTH VIETNAM [RVN] (1965–1975)****Overview:**

It has been reported that South Vietnam’s defense budget in the period from 1965 to 1974 totaled somewhere between VN\$1,279.4 billion (Tuan 1987, Table 6.23) and 1,380 billion piasters (Dacy 1986, Table 11.1). Defense expenditure more than tripled during the last five years of the war. South Vietnam financed the war mostly with revenue from taxes, printing, domestic, and foreign borrowing.

The total amount of domestic tax revenue for the period from 1965–1974 is reported at 680 billion piasters (Dacy 1986, Table 11.2). It consisted mostly of indirect taxation on various items such as production, beer and beverages, tobacco, gasoline, motor vehicles, and entertainment as well as registration taxes on inheritance, dividends, and super rent. Political pressure to avoid increases in direct taxation of farmers, combined with problems associated with post-colonial legacy of poorly trained tax administration officials, coexistence of anachronistic levies alongside some modern-style taxes, pervasive tax evasion, and continued demand to finance

military expenses led to a reliance on foreign aid as the major source of revenue. However, this pattern somewhat changed with the tax reform of 1973, which introduced value-added tax, revenue from domestic taxation replaced custom tax and foreign aid revenue as the principal source of government income.

In terms of deficit financing, the National Bank proved instrumental. In the period from 1965 to 1974, deficit financing from the National Bank amounted to VN\$1,661.2 billion in money supply and to VN\$1,493.9 billion in bank advances (Tuan 1987, Table 6.26). About 60% of total deficit after foreign aid was financed by borrowing from the National Bank and 30% came from selling bonds to commercial banks (Dacy 1986, 220–221, 229). Net sale of treasury bonds is reported to have reached a total of 180.3 billion piasters (Dacy 1986, Table A11.2). Furthermore, the Vietnam government also engaged in a program of voluntary savings by encouraging people to buy treasury bonds and of compulsory savings that provided financial measures offering substantial tax deductions and appropriate savings rates.

The amount of foreign funding received by South Vietnam from 1956 to 1974 is estimated at 1,063.1 billion piasters (Dacy 1986, Table 11.4). The United States played an important role in providing military and economic aid as well as sophisticated hardware and software to South Vietnam. It has been reported that U.S. military aid to South Vietnam totaled \$14,537.7 million (Riddell 1975, Table III-4). Other sources indicate a total of \$14,092.4 million in U.S. military assistance and \$19,207.5 million in total economic and military assistance for fiscal years 1962–1973 (Foreign Assistance and Related Agencies Appropriations 1975, 102–103).

Caveats and Concerns:

There is a discrepancy in the data on domestic revenue. For the period from 1967 to 1974, Dacy reported domestic revenue at 802.4 billion piasters (Dacy 1986, Table 11.4) while Tuan estimates VN\$948.96 billion for the same period (Tuan 1987, Table 6.11, Table 6.15). There is also a slight discrepancy in the foreign revenue reported by Tuan and Dacy. While Tuan reported total foreign revenue for the years 1967–1974 at approximately VN\$594 billion (Tuan 1987, Table 6.11, Table 6.15), Dacy provided data that total 618 billion piasters (Dacy 1986, Table 11.4). These inconsistencies might be explained by problems associated with publishing of the data: “The total expenditures and revenues of the government are not published. A major omission in published budgets is the total amounts spent on United States military and economic aid, although these grants provide the greater part of the government’s revenue. Domestic sources of revenue, derived mostly from customs duties and excise taxes, cover only a portion of published expenditures. The resulting deficits are, however, covered by United States aid and smaller sums received from France and a few other countries” (H. H. Smith et al. 1967b, 393).

In terms of domestic to foreign revenue ratio, it has been reported that in 1968, the amount of import revenue roughly equaled the amount of internal revenue (about VN\$27 billion each), but import revenue became more prominent between 1969 and 1971. Dacy found that tax advisors were behind the initial prevalence of non-internal revenue reliance: (a) they did not fully understand wartime constraints, (b) they did not fully appreciate the low level of tax administration” and the associated problems of tax collection in an underdeveloped country, and (c) the government was politically oversensitive about increasing burden on the people (Dacy 1986, 234). By 1972–1973, however, import revenue was replaced by domestic revenue as the

main source of government income (Tuan 1987, Table 6.35). According to Tuan and Dacy, there are several reasons for this shift: (a) The tax base broadened; (b) Tax administration became more experienced, which resulted in improved taxing capability; (c) The insufficiency of import tax to cover rapidly increasing defense expenditures created pressure to raise domestic revenue; and (d) A tax reform introducing value-added tax was put into effect in 1973 (for a–c, see Tuan 1987, 308–309; for d, see Dacy 1986, 215–216).

In addition, Dacy suggested that the low statutory interest rates prior to 1971 were the main reason behind the government's failure to finance war debt with bonds. More specifically, he stated that: "Sale of government bonds played only a slight role in public finance until 1971. In the six-year period before 1971, government bond sales financed only 2.5 percent of national budgetary expenditures. In 1971 and 1972, sales financed 6.7 and 10.5 percent of government expenditures, respectively. Commercial banks were virtually the complete 'public' market for bonds, buying 85 percent of the total...In 1971 and 1972, banks purchased about three times the minimum requirement. In 1972, interest rates on treasury bonds were raised to the range of 13–18 percent." (Dacy 1986, 220–221, 229).

Notes:

For more data on the overall economic cost of defense, including defense budget, defense purchases, and U.S. Military Assistance Program, see Hoan (1971, 312). More specific data on military or defense expenditure for the period from 1955 to 1965 can be found in Tuan (1987, Table 6.23), for the period from 1956 to 1974 in Dacy (1986, Table 11.1), and for the period from 1966 to 1974 in Tuan (1987, Table 6.8, Table 6.12, Table 6.16, and Table 6.23). Further data on the total government expenditures, GNP, defense expenditure to government expenditure ratio, and defense expenditure to GNP ratio can be found in Tuan (1987, Table 6.23) and Dacy (1986, Table 11.1). For more specific data on the breakdown of domestic revenue from 1956 to 1974, see Dacy (1986, Table 11.2). For information on the total GVN revenues by source (i.e. domestic revenue, import taxes, counterpart aid, foreign aid, and aid contribution), consult Dacy (1986, Table 11.4). For data on domestic revenue from 1960 to 1967, see Tuan (1987). For more information on the import revenue and internal revenue from 1964 to 1973, see Tuan (1987, Tables 6.11, 6.15, and 6.35). More data on per capita domestic tax revenue for the years 1968–1974 can be found in Tuan (1987, Table 6.36). For more data on deficit financing, money supply, and advances from the National Bank, see Tuan (1987, Table 6.26) and Dacy (1986, Table A11.2). For a detailed breakdown of total U.S. assistance to Vietnam in terms Mutual Security Act period, Foreign Assistance Act period, loans and grants, and repayments and interests, see Foreign Assistance and Related Agencies Appropriations (1975, 102–103).

For further discussion on general war finance, see Dacy (1986, 214), and for problems associated with revenue data, consult H. H. Smith et al. (1967b, 393). Further discussion on the political context of taxation can be found in OCI0364/66 (1966, 44), NIE53-71 (1971, 9), and Tuan (1987, 302, 308–309). For further detail on administrative revenue and the coexistence of anachronistic levies alongside modern-style taxes, see Dacy (1986, 214). More detail on the development of domestic taxation and the associated trends in raising domestic revenue can be found in Dacy (1986, 215–216). Discussion on the austerity measures associated with war financing and their negative impact on civil and development projects as well as on capital depreciation and public investment in civilian sector can be found in Hoan (1971, 313) and Tuan (1987, 270). For more

information on the effect of tax advisors on government tax policy and the tax officials' attitude about taxation, see Dacy (1986, 234 and 236, respectively). For further detail on domestic debt financing, consult Tuan (1987, 296, 305). Further discussion on public finance and government bonds can be found in Dacy (1986, 220–221, 229). More information on compulsory public saving can be found in Tuan (1987, 305–306, Table 6.33). For additional information on U.S. military aid, see *Emergency Military Assistance and Economic and Humanitarian Aid to South Vietnam, 1975* (1975, 40), Hoan (1971, 313), and Riddell (1975, Table III-4).

NORTH VIETNAM [DRV] (1965–1975)

Overview:

North Vietnam financed the war effort with revenue obtained primarily from foreign funding and to some extent from domestic taxation and plunder. USSR and China appear to have been the principal suppliers of military and economic assistance, with Eastern European Communist countries making their contributions later in the war. Some support from Cambodia and Viet Cong was offered in the form logistical organization of foodstuffs, ammunition, and medical support, and insignificant amounts of economic aid were offered by Cuba, Mongolia, and North Korea. The government of North Vietnam relied heavily on Communist countries for help with maintaining its military and logistical effectiveness as well as for material to withstand Allied bombing. It has been reported that the value of Soviet and Chinese deliveries of military equipment came to \$4,010 million in the period from 1965–1974; \$670 million has been cited for the period from 1965 to 1967 (*The Role of Foreign Aid in North Vietnam's Military and Economic Front* 1967, Table 1) and \$3,340 million for the period from 1967 to 1974 (*Imports of Military Equipment and Material by North Vietnam in 1974* 1975, 2, Table 1). Other sources indicate that in 1965 alone, North Vietnam received about \$250 million in military aid and between \$100 million and \$150 million in economic aid mostly from the USSR and China (*Memorandum: The Vietnamese Communists Will to Persist* 1966, 11–12; *The Role of Foreign Aid in North Vietnam's Military and Economic Front* 1967, 6). In the period from 1970–1974, the total Communist economic and military aid has been estimated at about \$5.6 billion (*Communist Military and Economic Aid to North Korea* 1974). Although military aid from Eastern European Communist countries was negligible until 1971 and came mostly in the form of small arms and ammunition, field hospitals, barges and vehicles, the delivered equipment is reported essential for the maintenance and reconstruction of transportation and communication lines and for preservation of military effectiveness of North Vietnam's key industrial sectors. In terms of raising revenue through taxation, North Vietnam relied more heavily on direct taxation rather than on indirect levies. This set-up proved somewhat challenging mostly due to the degree of decentralization of North Vietnam's taxation system. Revenue from foreign and domestic sources was further supplemented by plunder. Soldiers sometimes relied on rice, wild vegetables, and animals for sustenance.

Caveats and Concerns:

The heavy reliance of North Vietnam on foreign aid has been explained by the destruction of state-operated factories due to the U.S. air campaign and the consequent reduction of government financial resources (H. H. Smith et al. 1967a, 355–356). According to some, the increase in North Vietnam's trade deficit with Communist countries and particularly with Russia serves as a good indicator of the fluctuation in Communist aid. However, it should be noted that the "estimate of the value of Communist military deliveries includes only the cost of military

equipment received and not the full cost of military assistance provided Hanoi by its allies. The costs of training, spare parts and transportation—for which there is virtually no information—are not estimated” (*Imports of Military Equipment and Material by North Vietnam in 1974* 1975, 2). In terms of assessing foreign aid, it has been noted that the imbalance in trade statistics and North Vietnam’s inability to clear the increase in deficit can be considered as economic aid and may well be written off as grant aid (*The Role of Foreign Aid in North Vietnam’s Military and Economic Front* 1967, 6). On the other hand, it has been suggested that North Vietnam had to reciprocate Russian and Chinese aid by importing enormous amounts of grain from these countries (Van Dyke 1972, 160). With regard to specific challenges with decentralized system of taxation, it should be noted that “the revenue demands imposed on the country as a whole were relatively low because of the delegation of public works and most other economic responsibilities to local authorities and the obligation of local government to pay the expenses of the military contingents they were expected to provide” (H. H. Smith et al. 1967a, 355–356).

Notes:

For further discussion and data on foreign military assistance mostly from the USSR and China, see *The Role of Foreign Aid in North Vietnam’s Military and Economic Front* (1967, 1, Table 1). More data on Soviet, Chinese, and Eastern European Communist countries military aid in 1965 alone can be found in *Memorandum: The Vietnamese Communist Will to Persist* (1966, II-6). For more specific data on the value of Communist military aid from 1967 to 1974, consult *Imports of Military Equipment and Material by North Vietnam in 1974* (1975, 2, Table 1) and *Memorandum: The Vietnamese Communists Will to Persist* (1966, 11–12). For more information on foreign aid associated with damaged sustained by air operation Rolling Thunder, refer to *Memorandum: The Vietnamese Communists Will to Persist* (1966, I-7). For further discussion on economic aid offered by the USSR, China, Eastern European countries, and Cuba, Mongolia, and North Korea, refer to *The Role of Foreign Aid in North Vietnam’s Military and Economic Front* (1967, 6). More specific data on the total Communist economic and military aid to North Vietnam between 1970 and 1974 can be found in *Communist Military and Economic Aid to North Korea* (1974). A mention of North Vietnam’s imports of rice and grain from China and Russia can be found in Van Dyke (1972, 160) and on the general state of decentralization and self-sufficiency in Van Dyke (1972, 22). For further discussion on the decentralized taxation system, see H. H. Smith et al. (1967a, 355–356, 362, 365). For further information on Viet Cong aid to North Vietnam see *Annex V: The Resources and Logistic Capabilities of the Communists in South Vietnam* (1966, V8–V9) and Sansom (1970, 218). A mention of obtaining revenue from plunder can be found in Van Dyke (1972, 39–40).

VIET-CONG

Overview:

Taxation appears to have been the primary source of war revenue. For the period from 1964 to mid-1965, the actual tax revenue for Vinh Duong Province is reported at about 29.48 million (*Memorandum: The Vietnamese Communists Will to Persist* 1966, vii–3). Viet Cong acquired resources within South Vietnam mostly by levying substantially higher agricultural taxes than the average 3% of total production in the areas within its control (*Memorandum: The Vietnamese Communists Will to Persist* 1966, vi). Internal transportation, business establishments, and commercial activities were also extensively taxed. Tax revenue was further supplemented with gains from seizures and clandestine operations.

Caveats and Concerns:

It has been reported that Viet Cong tax receipts were dependent on its continued control over the rural population. Despite the 12%–15% agricultural tax, the rural population did not seem to demonstrate any major resentment against the tax or organize to stop rice collections (*Memorandum: The Vietnamese Communists Will to Persist* 1966, vi).

Notes:

For a general discussion on the progression of the Viet Cong's taxation system and the agricultural, business, and commercial tax schemes see *Memorandum: The Vietnamese Communists Will to Persist* (1966). For further reference to the peasants' compliance with Viet Cong's heavy taxation, see *Memorandum: The Vietnamese Communists Will to Persist* (1966). For more information on other sources of revenue such as economic activities, seizures, and clandestine operations, consult *Memorandum: The Vietnamese Communists Will to Persist* (1966, v2).

UNITED STATES (1965–1973)**Overview:**

The cost of the Vietnam War for the United States ranged between \$108.3 billion (Edelstein 2000, 342) and \$143.8 billion (Riddell 1975, 137, Table III-10), with more recent estimates at \$111 billion (Daggett 2008). The overall estimates of U.S. military assistance to South Vietnam reach about \$14.5 billion (Riddell 1975, Table III-4). Since 1964, U.S. war expenditure entailed the costs associated with President Johnson's \$2.1 billion "more flags" policy (Riddell 1975, 136–137) under which the United States tried to involve, and financed, military forces of third countries in a joint effort against Communists in Vietnam. Korea was the most costly third-country participant, costing the United States \$1.8 billion for the period from 1965–1973 (Riddell 1975, Table III-9). U.S. military assistance to Cambodia in 1966–1975 was \$1.17 billion (Riddell 1975, Table III-7) and Thailand was \$300 million (Riddell 1975, 134–135). In 1965–1969, the Philippine government deployed a non-combat Philippine Civic Action Group (PHILCAG) in peak strength of 2,300 men to build roads, bridges, and base camps in Vietnam, and by the end of the 1969 fiscal year, it is reported to have cost the United States \$60 million (Riddell 1975, 133–134). The participation of Australia and New Zealand, however, presented no additional cost to the United States (Riddell 1975, 136). In total, the U.S. expenditures associated with the economic assistance funds for Cambodia, Laos, Thailand, and South Vietnam since 1965 reach a total of about \$6.8 billion (Riddell 1975, Table III-8).

The U.S. involvement in Vietnam was financed domestically through government borrowing and taxation. Some reports suggest that the augmented tax revenues did not finance the Vietnam War in 1965–1968, despite the adoption of fiscal restraints such as a temporary suspension of the 7% investment tax credit to businesses, accelerated depreciation of buildings, and cutbacks in non-defense spending (Riddell 1975, 351). It was only in 1969–1970 and after Congress passed the 10% income tax surcharge in 1968 aimed at raising \$16 billion that tax levies completely financed the incremental cost of war (Edelstein 2000, 380–381; Riddell 1975, 34, 362). Overall, it is estimated that less than 20% of U.S. spending in 1965–1972 was financed by increased taxes; government borrowing financed the rest and national debt reached a value of about \$151.4 billion (Riddell 1975, 367). According to McMillan and Beard estimates, about 17% of the

deficit increase in 1953–1976 was monetized, while Hamburger and Zwick argued that about 20%–25% of debt increase was monetized (Edelstein 2000, 379–380).

Caveats and Concerns:

It appears that there was a concern over the reported Vietnam War expenditures under President Lyndon Johnson. The Department of Defense eventually reported full and incremental estimates of the war's cost. "...[t]he war's *full* costs covered all forces, equipment, and materials, baseline and additional, used in the war. Their *incremental* cost estimate covered only the added costs of fighting the war, the expenditures over and above the normal costs of operating the nation's baseline force in peacetime. The reason for the two estimates lies in the fact that the cost of the Vietnam War was partly borne by reducing Defense Department efforts and expenditures for other purposes" (Edelstein 2000, 34). This accounts for some of the reported differences in the totals of U.S. cost of involvement in Indo-China. For example, Riddell alone reports two different war cost totals for 1965–1975: incremental cost at \$114.3 billion and full cost at \$143.8 billion (Riddell 1975, Table III-2). This compares to \$111.16 billion of incremental cost and \$139.73 billion of full cost for 1965–1974 period reported in Tuan (1987, 322, Table 7.3). Because Riddell and Tuan defined the incremental and full costs very similarly, the differences in numbers may be due to the time period taken into consideration. Moreover, there appears to be some problem with determining how much of the reported costs for third-country involvement or of U.S. military assistance to South Vietnam has been included in the reported U.S. Department of Defense funding of the war. For example, Riddell estimated that out of the total \$1.8 billion quoted for the U.S. cost of Korean involvement in the war, only \$1 billion should be estimated as being financed outside of the reported Department of Defense funding (Riddell 1975, 129). Similarly, the \$40 million expense of the total \$60 million cost of Philippine involvement was contained in the U.S. Department of Defense war funding report (Riddell 1975, 133–134). Another accounting problem is related to the reports on U.S. military assistance. Beginning in 1966, "military assistance funds for South Vietnam previously routed through the Military Assistance Program were transferred to the direct responsibility of the military services and funded with [U.S.] Department of Defense budget. As a result, the totals for military assistance for South Vietnam since then are included within the Pentagon's estimates for war costs..." (Riddell 1975, 115).

Notes:

For more detail on cost of war data, see Edelstein (2000, 342), Daggett (2008), and Riddell (1975, 98). Further data on total direct budgetary cost of U.S. involvement in Indo-China from 1950–1975 can be found in Riddell (1975, 137, Table III-10). For more data on full and incremental costs of the U.S. military involvement in the war, see Riddell (1975, Table III-2) and Tuan (1987, 322, Table 7.3). For further discussion on the Congressional suspicion regarding Vietnam War expenditures under President Lyndon Johnson and subsequent Department of Defense reporting for 1965–1966, see Edelstein (2000, 34). Further discussion on the U.S. "more flags" policy can be found in Riddell (1975, 117, 136–137). For more specific data on the U.S. cost of South Korean, Philippine, and Thai participation covering the period from 1965–1973, see Riddell (1975, Table III-9). Further discussion on the U.S. cost of Korean involvement as well as a reference to the specific cost items and accounting nuances with respect to the reported Department of Defense war finance, see Riddell (1975, 129). More information on the nature and the U.S. cost of Philippine engagement in the war can be found in Riddell (1975, 132 and 133–

134, respectively). A mention of the cost of Thailand's participation can be referred to in Riddell (1975, 134–135, Table III-5). More information on the cost of Australia and New Zealand's involvement can be found in Riddell (1975, 136). Specific data on the U.S. cost of military assistance to Laos and Thailand in 1950–1966 can be found in Riddell (1975, Table III-6). More data on the U.S. cost of Laos's participation in 1967–1975 can be found in Riddell (1975, Table III-5). Data on the estimated military assistance to Cambodia can be referred to in Riddell (1975, Table III-7). For a breakdown of the estimated economic assistance funds for Cambodia, Laos, Thailand, and South Vietnam, consult Riddell (1975, Table III-8). For further discussion on general war finance through national borrowing, taxation, and national debt, see Edelstein (2000, 379) and Riddell (1975, 357, 367). More information on the U.S. gross debt between 1964 and 1968 and discussion on its absorption by the public or the Federal Reserve can be found in Edelstein (2000, 379–380). Further discussion on the tax revenue in 1968–1970, especially in relation to financing the cost of war, can be found in Edelstein (2000, 380–381) and Riddell (1975, 34). A special mention of the 10% income tax surcharge and further spending cutbacks can be found in Riddell (1975, 362, 365). A reference to President Johnson's deferral of scheduled excise tax reductions and to additional fiscal restraints is made in Riddell (1975, 345, 351). Further mention of austerity measures involving reduction in non-defense spending can be found in Edelstein (2000, 377).

CAMBODIA (1970–1975)

Overview:

From 1969–1971, military expenditures totaled between 17.85 billion riels (Whitaker et al. 1973, 252) and 18.7 billion riels (Whitaker et al. 1973, 249). The Cambodian war effort was financed primarily by the United States with a smaller reliance on taxation, printing, and domestic loans. The estimate of ordinary revenues for the period from 1971–1974 reached 47 billion riels, with U.S. aid amounting to about 57 billion riels for the same period (1971–1972 data in Whitaker et al. 1973, 250; 1973–1974 data in *The Cambodia-Vietnam Debate* 1975, 276). Some estimates suggest that only 2.2% of revenue came from domestic income sources and that 95.1% of income came from U.S. foreign aid in 1974 and was supplemented by about 2.7% of foreign aid from other countries (Etchison 1984, 93). Some sources estimate total U.S. foreign aid in 1970–1975 at \$1.18 billion in military material aid and at \$503 million in U.S. Agency for International Development assistance (Carney 1989, 31). Another source estimates \$517.5 million in U.S. aid in a form of grants in 1970–1973 (*Foreign Assistance and Related Agencies Appropriations* 1975, 100–101). It appears that U.S. assistance covered most of Khmer's extra budgetary expenditures for U.S. voluntary agencies, international organizations, and the Resettlement and Development Foundation. France, Japan, Australia, New Zealand, and Denmark also provided some form of foreign aid, while aid from communist countries was eventually cut off.

Domestic sources of war finance supplemented U.S. and foreign assistance. In 1971, the deficit was financed by 10.1 billion riels from National Bank advances and by 3.7 billion riels from sales revenue from commodities imported under U.S. economic aid and the related special 50% import tax (Whitaker et al. 1972, 249). In fact, all imports appear to have been subject to general tariff with duty rates three times higher than that of the basic tariff, while a basic import duty rate of over 35% was placed on less essential items (Whitaker et al. 1973, 250). The “support for war effort” tax ranging from 20%–130% was placed on durable consumer goods such as passenger

cars and electrical appliances and a 3% tax was levied on other imported items (Whitaker et al. 1973, 250). In order to cover budget deficit, the government also relied on the sale of treasury bonds, which were issued at 5.5%–10% for 3–12 months, respectively (Whitaker et al. 1973, 250).

Caveats and Concerns:

The reported heavy reliance on foreign aid as a major source of covering war-related expenditure is further supported by the overall assessment of the catastrophic state of Cambodian economy: “The Cambodian economy is in even worse shape than the Cambodian military effort. There is no national economy. Each enclave has its own economy and all are suffering hyperinflation brought on by food and commodity shortages...” (*To Provide Additional Military Assistance Authorizations for Cambodia for the Fiscal Year 1975, and for Other Purposes* 1975, 20).

Notes:

For more specific data on the expenditures, revenue, and accounting deficit for the years 1969–1971, see Whitaker et al. (1973, 252, 249, Table 5). For further discussion on the wartime economic problems, see NIE57-70 (1970, 18, 20–21). More detail on conscripted cadres and fighting troops in some regions in Cambodia can be found in Etchson (1984, 155). A reference to balance of payments problems, state of financing of foreign exchange transactions, and IMF aid is made in Whitaker et al. (1973, 233). For further detail on consumer goods taxation and general discussion on import tax, see Whitaker et al. (1973, 250). For further discussion on U.S. and other foreign aid, see Etchson (1984, 93), Carney (1989, 31), *The Cambodia-Vietnam Debate* (1975, 241, 275), and *To Provide Additional Military Assistance* (1975, 4). An estimate of U.S. Military Assistance Program to the Khmer Republic in the period from 1971–1975 is available in Etchson (1984, 94, Table 6.1). A quote for a total U.S. military aid to Cambodia in 1970–1974 can be found in *Foreign Assistance and Related Agencies Appropriations* (1975, 100–101). For more details on foreign aid from France, Japan, Australia, New Zealand, Denmark, and Communist countries, consult NIE57-70 (1970, 21). For more information on the government sale of treasury bonds, see Whitaker et al. (1973, 250). Other forms of borrowing are discussed in Whitaker et al. (1973, 250). Further discussion on the economic conditions of Cambodia can be found in *To Provide Additional Military Assistance* (1975, 20).

SOUTH KOREA (1965–1973)

Overview:

The South Korean war effort in Vietnam was financed by the United States. U.S. finance to South Korea totaled almost \$1.8 billion for the period from 1965–1973 (Riddell 1975, 130, Table III-9). The United States paid for all expenses of Korean troops in Vietnam, procurement of commodities for U.S. troops in Southeast Asia from South Korea, work for Korean contractors in Vietnam, and economic and military aid as well as overseas allowances of Koreans in Vietnam. Some sources suggest that United States provided about \$927.5 million in foreign aid to South Korea in 1965–1970, covering items such as transportation, death and disability, equipment of forces deployed, medical evacuation (MedEvac), improvement of military barracks, and sanitation facilities. It is estimated that one ROK soldier in Vietnam in 1970 cost the United States approximately \$5,000 (*United States Security Agreements and Commitments Abroad—Republic of Korea* 1970, 1559). There appears to be no information on other sources of raising or covering war revenue.

Caveats and Concerns:

It would seem that “it is somewhat difficult to determine exactly how much of the total of \$1.8 billion has been included in Department of Defense funding for the war” (Riddell 1975, 129). Riddell suggests that “about \$1 billion has been financed outside of DOD funding [and] must be added to total war costs” (Riddell 1975, 129).

Notes:

For more detail on the annual breakdown of the U.S. cost of South Korean involvement in Vietnam War, see Riddell (1975, 130, Table III-9). Further discussion on the details of the U.S. Korean expenses can be found in Riddell (1975, 129) and *United States Security Agreements and Commitments Abroad—Republic of Korea* (1970, 1569). For an account of an itemized list of U.S. support to Korea in 1965–1970, consult *United States Security Agreements and Commitments Abroad—Republic of Korea* (1970, 1571). More information on the U.S. cost of ROK soldiers can be found in *United States Security Agreements and Commitments Abroad—Republic of Korea* (1970, 1559).

PHILIPPINES (1966–1973)**Overview:**

Several sources indicate that about 35 million pesos (\$9 million) were appropriated for the Philippine Civic Action Group (PHILCAG) in Vietnam starting in 1966 (*United States Security Agreements and Commitments Abroad—The Republic of the Philippines* 1969, 254; Celozza 1997, 100). Others propose that total U.S. expenditure on financing PHILCAG and providing aid to the Philippine government totaled between \$38 million (Celozza 1997, 103) and \$60 million (Riddell 1975, 133–134). Philippine involvement in the war was financed by domestic and foreign sources of revenue. Deployment and troop rotation of PHILCAG, the Philippine engineering unit working in infrastructure projects and security force, seems to have been financed jointly by savings within the Philippine national defense budget and some form of U.S. aid. The United States appears to have financed two items: overseas allowances and equipment and logistics support of the PHILCAG in South Vietnam. In 1970, the Philippine government withdrew its military forces from Vietnam.

Caveats and Concerns:

There have been reports stating that PHILCAG’s funding has been undisclosed to the public, most likely for legal reasons and the preference of the Philippine government for keeping U.S. participation a secret. However, it’s been also said that U.S. involvement in funding PHILCAG paved the way for greater support of the Philippine Armed Forces “through regular channels of aid as well as through Vietnam-related expenses of the Department of National Defense of the U.S. government” (Celozza 1997, 102–103). In this context, however, a testimony presented to Senator Symington’s subcommittee on U.S.-Philippine agreement, indicated that some of the costs were not funded by the U.S. Department of Defense and were rather funded within the Military Assistance Program in the approximate amount of \$20 million (Riddell 1975, 133–134). Therefore, the total U.S. cost of Philippine involvement in the Vietnam War is also estimated at \$60 million (Riddell 1975, 133–134).

Notes:

Further discussion on the Philippine economic and technical assistance to South Vietnam, especially in the framework of PHILCAG, can be found in *United States Security Agreements and Commitments Abroad—The Republic of the Philippines* (1969, 254) and Celoza (1997, 100). For more information on financing PHILCAG functioning and activities, consult *United States Security Agreements and Commitments Abroad—The Republic of the Philippines* (1969, 37, 41, 257; 267), Celoza (1997, 102–103), and Riddell (1975, 132–133, 457).

ISRAEL-EGYPT WAR OF ATTRITION (1969-70)

ISRAEL

Overview:

The total defense outlays for the Israeli government between the years 1969 to 1970 was roughly I£8.227 (Lanir 1984, 35). These funds were largely raised domestically through bonds issuance (domestic debt) as well as by increased sales tax, excise and duty customs, and the printing of paper money (Gabbay 1990a, 90). Israel also received modest foreign assistance from the United States in the form of grants and loans (Nitzan and Bichler 2002, 132).

Caveats and Concerns:

Between 1949 and 1970, Israel received modest military and economic assistance from the United States. Given the length time the United States funded Israel, it is difficult to know the full extent U.S. funding played in the Israeli prosecution of the war (that is, apart from the direct support during the years of conflict). Furthermore, after the war, in 1971, U.S. funding dramatically increased, from \$30 million in 1970 to \$545 million in 1971 (Barnett 1992, 231).

Notes:

For more information on war financing, see Plessner (1994, 179), Kochav (1990, 30), Gabbay (1990a, 86–87, 92), Barnett (1992, 154, 191), and Lanir (1984, 35). For information on domestic funding, see Gabbay (1990a, 90), Nitzan and Bichler (2002, 132), and Kochav (1990, 33). For more on U.S. aid, see Plessner (1994, 179), Rivlin (1992, 11, 35), Sharp (2013, 23), and Barnett (1992, 231–233).

EGYPT

Overview

The total defense outlay for the Egyptian government between the years 1969 to 1970 was roughly 2.067 billion Egyptian pounds (Barnett 1992, 81). Some of this financial burden was shouldered by the public through commodity taxes (Barnett 1992, 112). The government was also able to utilize funds from other revenue sources from within the public sector and to increase its foreign currency reserves to help pay for weapons (Barnett 1992, 113). However, budget shortfalls were primarily supplemented with the help of foreign borrowing, mostly from the Soviet Union. Egypt also received direct support from neighboring Arab countries, like Kuwait, Libya, and Saudi Arabia.

Caveats and Concerns:

Aside from the evidence that taxes were waged, the extent to which tax revenue funded the war is unclear. There is also no evidence if domestic borrowing or printing was part of the state's war finance strategy.

Notes:

For more information on war financing see Barnett (1992) and Institute for Strategic Studies (1967, 32–46). For more on domestic funding, see Barnett (1992). For more on foreign aid and loans, see Barnett (1992), Feiler (2003, 6–10), Morche (1983, 445–446), Gilbar (1997, 104), and Institute for Strategic Studies (1968, 45, 58, 117).

ETHIOPIA-SOMALIA WAR (1977–1978)**ETHIOPIA****Overview:**

While the exact cost of this war is not available, the Mengistu regime's military campaigns were funded with the help of extensive foreign aid. The war with Somalia began just as U.S. aid to Ethiopia was coming to an end (allegedly due to Mengistu's human rights violations). However, the United States left a large store of equipment as they were leaving the country, for which they were never fully compensated. Unable to rely on U.S. support from this point on, the Ethiopian government turned to the Soviet Union and other socialist nations for help. In the initial negotiations with the Soviet Union, Ethiopia acquired an arms package worth roughly 450 million dollars (Tiruneh 1993, 218). The total aid they received from the Soviet Union throughout the conflict was estimated at close to \$1 billion (Ofcansky and Berry 1993). Some of this aid was gifted and some was subsidized by Libya (Ofcansky and Berry 1993). Ethiopia also received substantial support from Cuba and East Germany. Cuba provided financial aid and approximately 17,000 troops. East Germany provided some material support as well as crucial intelligence and security assistance. Yemen also provided at least 2,000 soldiers (Ofcansky and Berry 1993).

Caveats and Concerns:

From 1974 up until the time of the outbreak of war in 1977, the U.S. government had provided Ethiopia roughly \$200 million worth of materials, which included an F5 squadron that was transferred from Vietnam. Also during this time, the U.S. government provided about \$35 million in arms sales (Ofcansky and Berry 1993). It is difficult to assess how much of these constituted funds in the state's coffers leading up to the war. There appears to be no evidence of a domestic war finance regime. However, no source has yet to confirm this.

Notes:

For more information on general finance, see Ofcansky and Berry (1993). For more information on foreign aid, see Ofcansky and Berry (1993), Tiruneh (1993, 218), Weiss (1980 6), *Increased Soviet-Military Advisor Role* (1977, 1), *Soviet Policies on Restraint of Arms Sales to the Third World* (1978), Tareke (2000, 636, 661), Tareke (2009), Crockatt (1996), Tiruneh (1993), Weiss (1980, 6), and Farber (2011, 115–116).

SOMALIA**Overview:**

Somalia's military campaigns were funded almost exclusively with the help of foreign aid. With the recent loss of Soviet financial backing, Somalia turned to the United States (which refused direct aid) and the Muslim world for support. Saudi Arabia and Kuwait together provided about

\$310 million worth of aid (Linke 2008, 17), and Egypt provided roughly \$30 million in small arms and ammunition (Metz 1993). The Barre regime also received some support from Iran, Iraq, Pakistan, and Jordan. The non-Muslim countries of Italy and China were Somalia's primary arms suppliers during the war. The Federal Republic of Germany provided an \$18 million loan to Somalia during the time of the conflict, though it is unclear to what degree this went to war financing (Weisburd 2010, 39). There is some indication that the United States may have given aid to Somalia even though the Carter administration nominally professed neutrality due to Barre's human rights violations. Parenti (2011) put this total at \$200 million in military aid and \$500 million in economic aid (83–84).

Caveats and Concerns:

There are no precise estimates for the cost of this war. As was the case with the United States and Ethiopia, the Soviet Union had provided more than \$300 million worth of arms to Somalia between the years of 1974–1977 (Jackson 2007, 40). There are conflicting reports as to the extent of U.S. aid. Jackson (2007) claimed that funds were withheld while Parenti (2011) suggested that these funds were provided (Parenti may have mistakenly attributed this support to the 1977–1978 conflict when in fact this aid was provided in the third Ogaden conflict in the early 1980s). In any case, given the extensive Soviet support leading up to the war, it is difficult to assess how much of this constituted funds in the state's coffers leading up to the conflict. This, however, does not change the fact that Somalia was funded by foreign sources during this war.

Notes:

For more information on war financing, see Mubarak (1996, 38–40) and Linke (2008, 17–18). For more on foreign aid, see Fitzgerald (2002, 62–64), Lefebvre (1992, 177–180), Linke (2008, 17), Metz (1993), Parenti (2011, 83–84), Weisburd (2010, 39), Tareke (2000, 636), Mubarak (1996, 38–40), and Jackson (2007, 40).

VIETNAMESE-CAMBODIAN WAR (1977–1979)

VIETNAM

Overview:

The Vietnam war effort in Cambodia was financed via existing coffers, increasing taxation, Soviet assistance, and debt (Tetsusaburo 1989, 24). After the Vietnam War, the country captured about \$5 billion worth of U.S. military equipment (*Sino-Soviet Competition in Indochina* 1978, 13). Throughout the war there were reports of Soviet aid (*Sino-Soviet Competition in Indochina* 1978, 13; Leighton 1978, 451; Jackson 1978, 80; Kimura 1986, 1053).

Caveats and Concerns:

Postwar Vietnam had two economies characterized by two central banks. A unified budget was not introduced until 1977 and a unified dong until 1978 (Spoor 1988). Thus, economic data for the entire country at the time of the Vietnamese Cambodian War was relatively new. While there is data on the Vietnamese budget, there is little data for the military budget. Thus, it is unclear how much the war cost. Furthermore, the extent to which foreign financing, debt, and taxation met the war costs is unclear.

Notes:

For more information on the Vietnamese budget, see Spoor (1988, 125), Tetsusaburo (1989, 24), and Kimura (1986, 1051).

CAMBODIA

Overview:

While there are no estimated totals for the cost of this war, Phnom Penh was largely financed by foreign aid from China. On top of the military equipment and advisers, the Cambodian government received from China: grants, technical assistance, commodity imports, medicine, railroad equipment, and agricultural tools (Director of Central Intelligence 1978, 10–11). All told, the Chinese provided upwards of \$1 billion in aid over the course of several years (Jackson 1979, 80). Whatever domestic revenues were generated in Cambodia went to paying off its debt to China, and, in fact, there is evidence to suggest that China was even financing Kampuchean trade (Ross 1988, 138).

Caveats and Concerns:

The costs and funding for this war are very opaque due to the fact that much of the exchange between China and Cambodia was in the form of bartered exchanges, e.g., raw materials, rice-exports for weapons, or outright gifts from China. Jackson (1979) explained, “The exact amount of Chinese aid is a mystery” (80, n.12). What makes matters more difficult is that during the government takeover, the communists attempted to eliminate paper money. Banks were dynamited (Pike 1978, 7). To what degree this was successful is not clear.

Notes:

For more information on public and war-time finance, see Pike (1978). For information on Chinese aid, see An (1978, 253), Director of Central Intelligence (1978), Jackson (1979, 80), *The Vietnam-Cambodian Conflict* (1978), Morris (1999, 76), Ross (1988, 107–109, 138, 156, 163), Pike (1978, 11, 15), Kiernan (1996, 378–379), Chang (1985, 58–59, 70), Heder (1981, 49), and Dy (2007, 57).

IRAN-IRAQ WAR (1980–1988)

IRAN

Overview:

The estimates for the total cost of Iranian involvement in the war range between \$41.6 billion to \$309 billion for war period prior to 1986 (Amirahmadi 1990, 67; Kostiner 2009, 73, respectively) and assumes a cost of \$53.6–\$56.6 billion to \$92.85 billion for the entire war period (Amirahmadi 1990, 67; Chubin and Tripp 1988, 125, respectively). Reports also suggest that Iran paid about \$9 billion in arms imports (Chubin and Tripp 1988, 128). Iran was able to finance the war mostly by taxation, not paying its volunteers, obtaining mass popular contributions, using past savings, reallocating revenue from luxury imports, cutting back on development, using cash reserves, and selling external assets. Although tax and non-tax revenue is reported to have increased their shares of total revenues, it would seem that Iran was challenged with a number of tax collecting difficulties related to the inelasticity of the tax system, increased tax exemptions, numerous tax holidays, and liberal deduction allowances for contributions to charity. The best source of tax revenue has been associated with corporate and individual income taxes, while import taxes and excise taxes were assessed as being poor sources of war revenue. Direct oil revenues made up “large but fluctuating share of public revenue,

peaking at 62.5% of total revenues in 1982–1983, but falling to 21.5% in 1986–1987” (Amuzegar 1997, 94). The reported difficulties with collecting taxes explain why Iran faced spikes in budget deficit, which seem to have peaked at 14.6% of GDP in 1980–1981 (Amuzegar 1997, 98). It would appear that Iran was experiencing some difficulties with obtaining foreign assistance or major foreign credit. The latter problem was ameliorated in 1983 when Iran became the “pirate in the OPEC lake” by discounting oil prices “shamelessly” and surpassing OPEC’s quota (Pelletiere 1992, 74).

Caveats and Concerns:

There appear to have been some problems associated with Iran’s ability to raise war revenue. Namely, Iran did not have any credit rating and therefore could not borrow money it needed to finance its war effort (Pelletiere 1992, 58). Also, the cost was raised due to the fact that Iran had to pay for arms imports on open and black markets, “especially after the U.S. cut off the supply of arms to Iran” (Kostiner 2009, 73). Some of the discrepancy in the estimates of war expenditures prior to 1986 can be due to (a) the suggestion that the larger estimate may actually account for the cost of damages rather than mobilization cost (Chubin and Tripp 1988, 127), and (b) that the lower estimate is adjusted for inflation and quoted in 1990 dollars. The number of years actually under consideration does not seem to be a viable factor because the lower estimate covers a period from 1981 to 1986 while the higher estimate is quoted for “cost of war as of 1986” (Kostiner 2009, 73). The second reason would account for some of the difference but definitely not for the entire difference between the low and the high estimate.

Notes:

For a further discussion on the assessment of war related expenditures, consult Kostiner (2009, 73) and Amirahmadi (1990, 67). More data on the annual breakdown of defense expenditure in *rials* in the period between 1980 and 1988 can be found in Chubin and Tripp (1988, 125). Further discussion on arms imports can be found in Chubin and Tripp (1988, 126, 128). For an estimate of operation costs, consult Chubin and Tripp (1988, 128). Further mention of Iranian problems with credit rating can be found in Pelletiere (1992, 58). More information on Iran’s problems with paying for arms imports on open and black markets can be found in Kostiner (2009, 73). A reference to the difficulties with obtaining foreign credit in 1984–1985 can be obtained in Cordesman (1987, 44). For further discussion on Iran becoming a “pirate in the OPEC lake” and related consequences, consult Pelletiere (1992, 74) and Chubin and Tripp (1988, 125). A mention of problems associated with lack of foreign assistance can be found in Chubin and Tripp (1988, 126–127). For further discussion on volunteering and popular support as sources of Iran’s revenue, see Cordesman (1987, 44). A mention of specific financing schemes for war revenue can be found in Cordesman (1987, 46) and Pelletiere (1992, 58). Further discussion on Iranian dependence on oil earnings for war revenue can be found in Cordesman (1987, 48). More on foreign exchange restrictions can be located in Amuzegar (1997, 163). Further detail on difficulties with taxation and detail on budget deficit can be referenced in Amuzegar (1997, 98), while actual data on tax revenue can be accessed in Amirahmadi (1990). For an enumeration of some of the problems with the tax system, see Amuzegar (1997, 94). For a more detailed reference to direct oil revenues, consult Amuzegar (1997, 94). A general discussion on tax and non-tax revenues can be found in Amuzegar (1997, 94–95).

IRAQ

Overview:

Estimates of Iraqi war expenditures range between \$161.7 billion (Cordesman 1999, 38, 42) and \$295 billion (Tarock 1998, 190). Other estimates suggest Iraqi war expenditure at a rate of \$15.7 billion per year excluding the value of destroyed assets and lost oil revenue (Alnasrawi 1986, 882–883). The Iraqi government raised revenue for their war expenditure by using currency reserves, taking austerity measures, and accepting donations, foreign loans, and grants. The Iraqi decision to implement a 75% cutback on domestic development expenditure, restructure its debt and trade arms deliveries for future oil exports, and accept foreign loans allowed it to conduct the war. Individuals were asked to “donate” money and jewelry toward the war effort. Iraq received financial support from some European countries in return for development contracts inside Iraq, support from Japan, about \$25–\$50 billion in financial loans from Saudi Arabia and Kuwait, \$5 billion in French loans, at least \$300 million credits from the United States for purchase of American agricultural products (Tarock 1998, 84), additional credits for purchase of American technology, and about \$5.5 billion of guaranteed loans (Tarock 1998, 222). Iraq also received arms and equipment from Egypt and Jordan (Kostiner 2009, 73). Iraq’s debt to the USSR is estimated at \$20 billion (Tarock 1998, 190). Despite all the assistance, Iraqi foreign assets were rapidly drained by its “guns and butter” policy and domestic austerity measures which led Iraq to borrow from abroad and obtain a lot of foreign credit to finance imports including military equipment. In late 1984, Iraq was forced to reschedule its loans and is reported to have paid for its \$80 billion debt out of future oil (Pelletiere 1992, 86). The extensive resort to the use of foreign loans turned Iraq into a problem debtor.

Caveats and Concerns:

None.

Notes:

For further discussion on the general cost of war including detail on cash reserves, foreign debt, and oil revenue, see Tarock (1998, 190), Alnasrawi (1986, 882–883, 885), and Cordesman (1999, 38, 42). Further discussion on Iraqi foreign loans, draining of foreign assets, and obtaining foreign credit can be found in *Iraq: No End in Sight to Debt Burden* (1990). A reference to various foreign loan providers can be made in Kostiner (2009, 73), Chubin and Tripp (1988, 192), and Tarock (1998, 84, 222), and more detail on foreign loans in general can be found in Chubin and Tripp (1988, 154, 194) and Cordesman (1987, 44). Data on foreign loans provided to Iraq in 1982 can be found in Pelletiere (1992, 72). Further detail on Soviet loans and grants to Iraq, see Tarock (1998, 190) and GIM87-20141 (1987, 4–6, 11). For more information on Iraqi need to reschedule loans and pay for debt out of future oil, see Pelletiere (1992, 86). More detail on foreign currency reserves can be found in Cordesman (1987, 45–46). For further discussion on austerity measures and associated foreign aid from Saudi Arabia, Kuwait, the Netherlands, Germany, India, and Japan, see Cordesman (1987, 47).

ISRAELI-SYRIAN WAR (1982)**ISRAEL****Overview:**

The estimates for total cost of war range from \$1 billion according to Israeli Treasury to \$2 billion according to the defense establishment (Merom 2003, 164). Other sources indicate 1.9 billion shekels for total defense consumption and 1.31 billion shekels for domestic defense consumption (Kochav 1990, 44). The war appears to have been financed by taxation, foreign borrowing, using reserves, mobilization related defense economic activity, and reduction in unemployment. Israeli Treasury was very careful about raising taxation and adhered to three guiding principles: (1) diversification of extractive measures, (2) indirect taxation, and (3) securing the cooperation of Israeli powerful Labor organization. In concrete terms, Israeli Treasury raised the Value Added Tax to 15%, reached a subsidy agreement with Histadrut, negotiated *Peace for Galilee* loan, levied 2% sales tax on the stock exchange, added surtax on imports, introduced new tax on travel abroad, and set a 5% monthly increase rate on government controlled prices for basic foodstuffs and other goods and services (Merom 2003, 165–166). In April of 1983, the overall tax increased reached 16% while the GNP remained relatively unchanged (Merom 2003, 166, FtNt 137). Israeli Ministry of Finance has also reported that the U.S. military aid in 1982 totaled \$2.8 billion, out of which grants amounted to \$745 million, loans covered \$1.27 billion, and total economic aid came to around \$785 million (Kochav 1990, 35).

Caveats and Concerns:

The \$1 billion difference in the estimates for total war expenditures could be partly due to the fact that the defense establishment adds replacement costs to the direct costs (Merom, 2003, FtNt31).

Notes:

For further discussion on the estimates for total war expenditures, see Merom (2003, 164), Rivlin (1992, 41), and Kochav (1990, 44). More detail on the general state of war financing can be found in Merom (2003, 166). For taxation rates in 1983, consult Merom (2003, 166, FtNt137). For further discussion on the need for foreign borrowing, see Merom (2003, 165). Detailed data on U.S. grants, loans, and economic aid can be referred to in Kochav (1990, 35). Further discussion on taxation can be found in Merom (2003, 165–166).

SYRIA

Overview:

Sources indicate that the total military expenditure for 1982 reached about £10.28 billion or around 14.9% of GDP (Clawson 1989, Table 4). It would appear that military expenditure was driven by Syrian spending on arms imports, which is estimated at \$2.6 billion in 1982 and at \$3.5 billion in 1983 (Clawson 1989, Table 3). This apparently translates into military expenditure at a rate of 36.5% of GDP in 1982 and 43.7% GDP a year later (Clawson 1989, Table 3). Syria obtained revenue from taxation, domestic borrowing and aid in form of grants and foreign loans. Total tax revenue for 1982 has been reported at £7.94 billion with aid reaching £8.25 billion (Clawson 1989, Table 4). Taxation burden on Syrian citizens was relatively low at 2.5%–5% of GDP (Clawson 1989, 30). However, it is also assumed that the tax rate could not have been higher as the Syrian government was unable or unwilling to force its taxpayers to share more of the military cost burden. This financing scheme essentially made Syria dependent on Arab financing and receiving Soviet supplies of arms. Total cash grant estimates for 1982 are valued at £S 5.4 billion, foreign loans at £S 703 million, and domestic borrowing is reported at £S 9.73

billion (Clawson 1989, Table 5). In terms of foreign aid in 1982, about \$66 million is reported to have been provided by the West, \$28 million by international organizations, \$936 million from Arab countries and OPEC (Clawson 1989, Table 7). While most foreign aid reportedly arrived from the USSR (about \$9.2 billion in arms transfers) and Czechoslovakia (\$470 million in military aid), other countries such as China, Poland, Romania, France, Britain, and West Germany also provided Syria with some form of assistance.

Caveats and Concerns:

It would appear that Syrian involvement in the war did not have an entirely deleterious effect on its economy mostly because its war expenditures were largely covered by direct Arab payments. Reports support this conclusion by demonstrating that budget figures do not indeed show any major increase in military expenditures that would directly correspond with deployment of Syrian troops (Perthes 1992, 56). Nevertheless, there were seemingly two major problems that Syria was faced with in paying for arms imports: (1) reluctance to increase tax burden and (2) problems converting Syrian pounds to foreign currency. Soviets reportedly were not very interested in Syrian pounds because they “only needed trivial amounts of pounds to meet the expenses of their embassy and so-called visitors to Syria [while] barter would have made little difference [because there was] the basic problem [with] identifying enough Syrian goods that the Soviets wanted, whether they buy in hard currency or in Syrian pounds” (Clawson 1989, 14–15). With regard to foreign trade statistics it should be mentioned that published budget figures for the military do not include military imports due to the assumption that Syria’s actual payments on its debt to the Soviet Union were made in goods rather than hard currency (Perthes 1992, 44).

Notes:

For more data on Syrian war expenditures consult Clawson (1989, Table 3, Table 4, Table 5) and Perthes (1992, 56). More data on aid according to donor can be found in Clawson (1989, Table 7). Further discussion on the difficulties with raising war revenue can be obtained from Clawson (1989, 14–15). For more information on taxation, consult Clawson (1989, 19, 30). More on Syrian dependence on foreign financing of arms imports can be found in Clawson (1989, 15–16, 19). A discussion on budget and accounting for military imports can be found in Perthes (1992, 44). For actual estimates of the value of Arab and Soviet assistance, see Clawson (1989, 15–16). More detail on further aid from the USSR, Czechoslovakia, China, Poland, Romania, France, Britain, and West Germany can be found in Divison (280), Perthes (1992, 44), NIE11/4-82 (1982), Gongora (1997, 329), and Cordesman (1983, 31). Further discussion on the relative resilience of Syrian budget with regard to military expenditures can be seen in Perthes (1992, 32, 56).

WAR OVER THE AOUZOU STRIP (1986–1987)

CHAD

Overview:

The Chadian military was funded primarily through foreign aid and direct military support from both France and the United States. By 1987, the Chadian government also collected “voluntary” donations from private citizens and businesses (Colleto and Nelson 1990). Late in the war, the military plundered a good deal of equipment that had been abandoned by the fleeing Libyan army. These plundered goods became instrumental in Chadian military success in 1987 (Colleto

and Nelson 1990).

Caveats and Concerns:

One of the difficulties in determining war funding for Chad is that the country essentially subsisted on foreign aid throughout the years of conflict. The 35% of the Chadian budget allocated to defense costs, which does not include the direct military aid from France and the United States, was funded by foreign sources (see Ndjamen 1987, 3; Colleto and Nelson 1990). Even though extra-budgetary development aid is not directly related to war funding, this clearly allowed whatever domestic revenue there was to be displaced and redirected to the war effort. Also, in terms of voluntary contributions made by private citizens and businesses, it is unclear just how voluntary these contributions were.

Notes:

For information on United States and French funding see SECSTATE (1986, 2), Azevedo (1998, 153), Kraft (1987), Simons (2003, 58), Nalbandov (2009, n. p. 71), and Colleto and Nelson (1990). Information on voluntary donations can be found in Colleto and Nelson (1990). For more on plunder, see Simons (2003, 58) and Colleto and Nelson (1990).

LYBIA

Overview:

The Libyan military was almost exclusively funded through the bartering of oil for material. For much of the conflict, the Libyan government was able to convince suppliers (primarily the Soviet Union) to accept oil as payment for military equipment. Libya's largest creditor, Italy, also agreed to accept payment in oil (Hufbauer, Schott, and Elliott 1990, 149). The sharp drop in oil prices in early 1986, however, complicated such arrangements, to the point that by 1987, many arms shipments had been cut off (Metz 1989, 276). At this time, the Libyan government was forced to compensate for the devaluing of oil through austerity measures: the government dramatically cut back on the number of foreign contractors the government employed, reducing the number by nearly a quarter of a million (Metz 1989, 156–158). Also, by 1987, the Libyan army was reportedly comprised of mercenaries funded, at least in part, by foreign Druze chieftain, Walid Jumblatt (Simons 2003, 58).

Caveats and Concerns:

Libya had worked out barter arrangements with its creditors and suppliers. In some cases the Libyan government was paying off its debts with oil and at other times it was directly bartering for goods in exchange for oil. This creates some fuzziness in terms of how to code such expenses. Credit repaid in oil would represent a foreign source of funding, while direct bartering for goods would represent a kind of domestic funding. Without knowing the exact nature of the barter agreements with Soviet Union, for instance, it is difficult to determine the precise nature of the kind of funding. However, given that we know Libya “failed to make promised oil deliveries” (Metz 1989, 276) and ran up debt of about “\$4 billion to USSR for military equipment” (Hufbauer, Schott, and Elliott 1990, 149), it may be safe to call this *de facto* foreign credit. Also, in terms of foreign loans, it is unclear how much, if any, of the loans from Italy and other Western countries was dedicated to the Chadian campaign.

Notes:

For information on Libyan oil-sales funding military activity in Chad, see *Libya: Little Impact of US Sanctions* (1987, 1), *Soviet Policy Toward the Middle East* (1986, 22), and Hufbauer, Schott, and Elliott (1990, 149). For information on foreign sources of credit for military equipment, see Metz (1989, 273–274), *Soviet Foreign Military Assistance* (1987, 33), *U.S. Military Action Against Libya: Possible Implications for a U.S.-Soviet Summit* (1986, 2), Martinez (2007, 174), and Hufbauer, Schott, and Elliott (1990, 149). For more information on domestic cutbacks to cover wartime expenses, see Metz (1989, 156–158). For more information on foreign mercenary funding, see Simons (2003, 58) and “Druze ‘Volunteers’ Head for Libya” (1987).

PERSIAN GULF WAR (1990–1991)

IRAQ

Overview:

While the exact cost of this war is uncertain, Iraq largely paid for its military operations through existing funds, derived largely from its oil revenues. Having just hobbled its economy in the recent conflict with Iran, it is not clear exactly how much money Iraq had to dedicate to the invasion of Kuwait. Indeed, part of the logic of the invasion to begin with was that Iraqi debts to Kuwait (from the Iran-Iraq War) would be wiped away, and Iraq could also appropriate Kuwaiti oil fields. During the relatively brief occupation of Kuwait, Iraqi soldiers pillaged more than a million ounces of gold from the Central Bank of Kuwait and shipped them in convoys back to Iraq (Atkinson 1994, 460–461).

Caveats and Concerns:

Up until the outbreak of war, Iraq was receiving loans and material from several countries, including Kuwait—a loan of up to \$500 million and the relief of Iraq’s war debt from the Iran-Iraq war was agreed to right before the invasion (Musallam 1996, 95). It is not clear whether the invasion prevented the transfer of funds. Furthermore, between 1982 and 1990, Iraq spent about \$42.8 billion on weapons from the USSR, China, and several other countries (Rahman 1997, 294; Friedman 1991, 374). Much of the cost of the invasion of Kuwait was paid for out of Iraq’s existing coffers.

Notes:

For more information on general finance, see Metz (1988), Alnasrawi (1994, 109), Yetiv (1995, 75), Rahman (1997, 293), Hassan (1999, 109–110), *Middle East Area Brief for 25 July 1990* (1990, 0007), *Iraqi Intimidation and Implications for Oil Prices* (1990), Cordesman and Hashim (1997, 42), Cordesman (1999, 33), and Kolt (1990). For more on foreign aid, see Musallam (1996, 95), Rahman (1997, 294), and Friedman (1991, 374, n. 30). For more on plunder, see Atkinson (1994, 460–461).

KUWAIT

Overview:

While the exact Kuwaiti expenditure for Gulf War military operations is uncertain, between 1990 and 1991, the Kuwaiti government allocated 3.091 billion Kuwaiti dinars for its national defense (Metz 1993b, Table 12). On top of this sum, Kuwait pledged \$16 billion to the United States and an additional \$6 billion to Egypt and other coalition members to fund the war effort (Metz 1993b). Hiro (2003) estimated that together, Kuwait and Saudi Arabia incurred \$51 billion of the

total cost of the war (34). Some of these funds were likely paid out of Kuwait's large oil revenue reserves, which, at their peak, accounted for more than 60% of the government's total revenues (Metz 1993b, Table 7). The Iraqi invasion, however, led to the suspension of oil production, which severely curtailed Kuwait's oil revenue. The Kuwaiti government had to rely on its revenues from foreign investment which, by the end of the late 1980s, was greater than the revenues generated from direct oil sales (Metz 1993b). In terms of other foreign aid, Saudi Arabia was providing Kuwait approximately 600,000 barrels of oil a day on credit so that the Kuwait Oil Co. could fulfill its contracts (Munro 2006, 205).

Caveats and Concerns:

Soon after the Iraqi invasion, senior members of the Kuwaiti government fled to Saudi Arabia, where they set up a government-in-exile in Dhahran. Even though their military was, for the most part, inoperative, the government was able to continue contributing to the coalition's war effort due to the fact that it still had full access to the rough \$100 billion in assets that were invested in foreign banks ("Exiled Kuwaiti Rulers Set Up Government" 1990). In a certain light, the expense of operations by the coalition forces could represent a kind of foreign aid, which would mean that the war fought on Kuwait's behalf was primarily funded through foreign aid. This, however, does not seem to represent the circumstances of the war. Since no funds were given to the Kuwaiti government directly, and since the Kuwaiti regime was able to substantially contribute to the war effort, it is better to see the Kuwaiti government as a co-belligerent contributing to the war by means of its domestic resources.

Notes:

For more information on general finance, see Metz (1993b, Table 7), Hiro (2003, 34), and Cordesman and Al-Rodhan (2007, 90). For more on foreign aid, see Munro (2006, 205–207). For more on domestic contributions to coalition forces, see Metz (1993b), Finlan (2008, 71), and "Exiled Kuwaiti Rulers Set Up Government" (1990).

BADME BORDER WAR (1998–2000)

ERITREA

Overview:

It is estimated that Eritrea spent roughly \$15 million a month on the war (*Africa South of the Sahara 2004* 2004, 398). Wartime expenses were met via deficit spending, domestic borrowing, taxation, and contributions from the Eritrean diaspora (CIA Factbook 2010, 218). Eritrea received some foreign assistance in terms of arms deals from Ukraine (Hamilton 2000, 116–117).

Caveats and Concerns:

It is difficult to speak definitively about Eritrea's war financing since the government has not released its defense budget since 1997 (Institute for Strategic Studies 1999, 248). In addition, the nature of the diaspora's remittances also remains unclear. In some places these contributions are called a tax (CIA Factbook 2010, 218) and in other places they are characterized as donations given for relief effort (*Africa South of the Sahara 2004* 2004, 398). Furthermore, Eritrean nationals living abroad and contributing *taxes* to the government would represent one source of funding, while former Eritreans who are citizens of foreign countries giving *donations* represent two different kinds of funding sources, which would be the difference of domestic and foreign

aid.

Notes:

For more information on war financing, see *Africa South of the Sahara 2004* (2004, 398), Yamauchi (2004), Institute for Strategic Studies (1999, 248), Institute for Strategic Studies, (2000, 256), and Riechel, Christensen, Mersereau, Schindler, Yamauchi, and Ding (2003, 14–16, 98). For more on domestic funding, see Yamauchi (2004, 910) and Riechel, Christensen, Mersereau, Schindler, Yamauchi, and Ding (2003, 96). For more on expat Eritrean funding, see CIA Factbook (2010, 218), Yamauchi (2004, 10), Fielding (1999, 90), and Riechel, Christensen, Mersereau, Schindler, Yamauchi, and Ding (2003, 15). For more on foreign aid, see Hamilton (2000, 116–117).

ETHIOPIA

Overview:

The Ethiopian Policy Research Institutes estimates that the war with Eritrea cost Ethiopia roughly US 29,000m (*Africa South of the Sahara 2004* 2004, 418). This war was funded primarily through deficit spending and by deferring capital expenditures (cutting sectoral investment programs and reducing health and education expenditure) (*Africa South of the Sahara 2004* 2004, 218). Ethiopia had also build up financial reserves over several decades from contributions from its diaspora (Fielding 1999, 90). With these reserves, Ethiopia was able to purchased weapons from Russia, China, and Israel (Institute for Strategic Studies 1999, 248).

Caveats and Concerns:

As was the case in Eritrea, Ethiopia had stockpiled contributions from its diaspora.

Notes:

For more information on war financing, see *Africa South of the Sahara 2004* (2004, 418) and Tahari, Guillaume, Strauss, Bhavnani, Kapteyn, and Kyei (2002, 13, 16, 18–19). For more on domestic funding, see Bigsten, Kebede, and Shimeles (2005, 20), *Ethopia: Statistical Appendix* (2002, 13, 18–19), and Tahari, Guillaume, Strauss, Bhavnani, Kapteyn, and Kyei (2002, 16, 18–19). For more on foreign sources to purchase weaponry, see Institute for Strategic Studies (1999, 248), Institute for Strategic Studies (2000, 256), Fielding (1999, 90), and Hamilton (2000, 116).

WAR IN AFGHANISTAN (2001–Present)

UNITED STATES

Overview:

The Congressional Research Service estimates the cost of war for the five years from 2003–2008 at \$159 billion (Daggett 2008, 2). Another source reported the cost of U.S. involvement in Afghanistan from 2003–2010 at \$300 billion. There appears to be no specific information on the sources of war finance.

Caveats and Concerns:

None.

Notes:

For more detail on the total cost of war from 2003–2008, see Daggett (2008, 2). For more specific information on the cost of U.S. engagement in Afghanistan from 2003–2010, consult Belasco (2009, i).

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