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**BEFORE ENTERING THE EAST  
AFRICAN CURRENCY BOARD:  
THE CASE OF ZANZIBAR  
(1908-1935)**

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Global Health, and Study of Business Enterprise



# **Before Entering the East African Currency Board: The Case of Zanzibar (1908 – 1935)**

By Marissa Licursi

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## **About the Series**

The Studies in Applied Economics series is under the general direction of Professor Steve H. Hanke, co-director of the Institute for Applied Economics, Global Health, and Study of Business Enterprise ([hanke@jhu.edu](mailto:hanke@jhu.edu)). This working paper is one in a series on currency boards. The currency board working papers will fill gaps in the history, statistics, and scholarship of the subject. The authors are mainly students at The Johns Hopkins University in Baltimore.

## **About the Author**

Marissa Licursi is a sophomore at The Johns Hopkins University in Baltimore pursuing a degree in Economics with a double minor in Entrepreneurship & Management and Financial Economics. She wrote this working paper while serving as an undergraduate researcher at the Institute for Applied Economics, Global Health, and Study of Business Enterprise during Fall 2015. She will graduate in May 2018.

## **Abstract**

We provide the first spreadsheet data series and legislative history of Zanzibar's Board of Commissioners of Currency (1908-1935) and examine to what extent it operated as an orthodox currency board. The paper makes the annual balance sheets and monthly financial statements of the currency board available in machine-readable form for the first time, in a companion spreadsheet workbook and also offers a summary of legislation related to currency and banking for further analysis of the period.

## **Acknowledgements**

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JEL codes: N27

## Introduction

Prior to joining the East African Currency Board in 1936<sup>1</sup>, Zanzibar had established a local Board of Commissioners of Currency to issue government notes beginning in May of 1908. A few prior accounts on the subject and period exist, such as Ferguson (1989), yet none present the note issuance statistics of the period in a machine-readable, high-frequency form necessary for further quantitative analysis.

We provide annual and monthly statistical data of the balance sheet of the Board of Commissioners of Currency. An analysis of the balance sheet data and of legislative history of the period suggests that the Board worked like an orthodox currency board in many respects but not in all.

We mainly focus on determining the extent to which Zanzibar's Board of Commissioners of Currency operated like an orthodox currency board. We do not address broader issues such as whether a different monetary arrangement might have resulted in greater economic prosperity. The statistics and legislative history that we provide in the companion spreadsheet workbook should, however, be useful to any further analysis of the Zanzibar monetary system of the period.

## Origins and Workings of the Government Note Issue

Economic and political relations between Great Britain and Zanzibar extended as far back as the early nineteenth century. During the period that followed, British involvement in Zanzibar escalated, finally culminating into formalized British protection over Zanzibar in 1890. A combination of the loss of the Sultan of Zanzibar's possessions on the East African mainland to the Imperial British East Africa Company and pressures to end the export of slaves and slave markets resulted in the rapid deterioration of the Sultan's sovereignty in Zanzibar (Shelswell-White 1949: 2-3). This paved the way for the official establishment of the Zanzibar Protectorate by Great Britain on November 1, 1890 (Crofton 1921: 3; Morris 1979: 1).

The following year, in 1891, a regular government was constituted with a British Representative as First Minister (Colonial Report, 1928: 3). While the Sultan retained his title, presided over the Executive Council in important decision-making, and issued legislation in his name, the British Resident "in actual fact, exercised on the Crown's behalf an extensive and all-pervading authority in [Zanzibar]" (Morris, 1979: 2). Now in control of the administration of the Zanzibar Protectorate, Great Britain had command over the country, including its currency.

The British Indian rupee had been in use and had been for a long time in Zanzibar before Great Britain's establishment of the Protectorate (Mwangi, 2011: 767). The currency had been "used irregularly by merchants during the slave era to facilitate commodity circulation" (Ferguson,

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<sup>1</sup> The currency board existed between 1908 and 1935. However, because of a lag in publication data, the relevant dates for the *Zanzibar Gazettes* and colonial reports stretch into the year 1936.

1989: 27). In fact, the Indian rupee was used throughout British East Africa (now Kenya), Uganda, German East Africa (Tanganyika, now the mainland of Tanzania), and Zanzibar. German East Africa was under German rule at the time, and its currency was the German rupee, made of silver, and the subsidiary coin was the Heller (1/100 of the Rupee). In Zanzibar, the local rupee would take the form of notes, while the Indian silver rupee and its subsidiary coins would continue to form the coinage (Bank of Tanzania, 2015).

On March 11, 1908, the Zanzibar Currency Decree (No. 3 of 1908) established a government currency note issue and provided that currency notes were to be issued by the Board of Commissioners of Currency “in exchange either for current coin or notes previously issued under this Decree” (Government Gazette, March 11, 1908: 1). The currency board arrangement ensured that the local currency was fully backed by sound Indian rupee securities. Additionally, the issue of currency notes provided a means for the government to earn additional revenue. In fact, C.E. Akers<sup>2</sup>, Financial Member of the Council of Zanzibar, in a report on the financial, commercial, and economic situation in Zanzibar, advocated an investment in Indian government securities bearing 3.5 percent interest and recommended the issue of Treasury notes to replace “the existing clumsy currency of silver rupee coins,” since “profit would accrue to the Government from such a financial operation” (Throup et al., 1995: 176). The report stated that he made these currency control recommendations on December 23, 1906. Akers made similar recommendations once again on February 8, 1907 – just one year before the official establishment of the local currency board in Zanzibar.

The 1908 decree also established the silver rupee<sup>3</sup> of British India as the standard coin of the Zanzibar Protectorate (Government Gazette, March 11, 1908: 4; Colonial Report, 1919: 6). The rationale was the “close commercial ties with that mighty British colony and the powerful role of its merchants in the Zanzibar economy” (Ferguson, 1989: 27).

The decree authorized the issue of notes in 5, 10, 20, and 100 rupee denominations and in any multiple of 100 rupees. The number of notes of each denomination was to be fixed by the Currency Board, with the approval of the Financial Member of Council (Government Gazette, March 11, 1908: 2). The silver rupee of British India became exchangeable with the local Zanzibar rupee on demand (Crofton, 1921: 3; Government Gazette, March 11, 1908: 3; Colonial Report, 1919: 6). The British sovereign was made legal tender at 15 rupees to the pound sterling. Legislation specifies no commission fee or minimum transaction size.

The decree also provided that the Board of Commissioners of Currency (also known as the Currency Board) should consist of the Financial Member of Council, the Treasurer, an officer in British public service, and a member of the commercial community to be nominated by the Financial Member of Council. The Board of Commissioners of Currency became the body

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<sup>2</sup> We credit C.E. Akers for the idea of establishing a currency board in Zanzibar. The Financial Member apparently had powers like those of a minister of finance.

<sup>3</sup> The Currency Decree, 1908 states, “The silver rupee of British India of the standard weight and fineness enacted in the Indian Coinage Act, 1906 is made the standard coin of Zanzibar.”

responsible for the issue of currency notes. The Currency Board did not issue coins, which were issued by the government (Krus and Schuler 2014: 257). The particular denominations of the currency notes from among those specified by the law, and the designs of notes, were to be decided by the Currency Board and approved by the Financial Member of Council (Currency Decree, 1908, Government Gazette, March 11, 1908: 2). The Zanzibar rupee was divided into 100 cents, like the rupees of the British Indian Ocean colonies of Mauritius and Seychelles, but unlike the Indian rupee, which was divided into 16 annas, 64 pice (paise), and 192 pies. The government of Zanzibar only issued coins of 1, 10, and 20 cents. In 1911, old local Seyyidieh copper pice became legal tender at 64 pice per rupee for payment of amounts not exceeding one rupee (Currency Decree, 1911; Government Gazette, April 11, 1911: 1).

On April 5, 1911, the Currency Decree, 1911 (No. 2 of 1911) was passed, repealing and replacing the 1908 decree. The 1911 decree contained a provision that removed certain doubts with regard to legal tender of coin within Zanzibar. Gold coins, whether coined at the Royal Mint in England or at any mint in the British Empire established as a branch of the Royal Mint, were made legal tender at the rate of 15 rupees for one sovereign (the British £1 gold coin) (Currency Decree, 1911; Government Gazette, April 11, 1911: 1). We infer that, as with similar Indian legislation of the time, this measure was intended to promote the use of gold coins as a step toward an eventual full-fledged gold standard. Zanzibar had an Indian rupee exchange standard, and India in turn had a sterling exchange standard, and sterling was itself pegged to gold, so the Zanzibar rupee was *indirectly* linked to gold. Zanzibar did not, however, define the local rupee in terms of gold or hold a gold reserve. Silver coins of British India other than the rupee were legal tender for the payment of amounts not exceeding five rupees; the Indian rupee remained unlimited legal tender.

The Commissioners of Currency had control over the invested securities of the Note Guarantee Fund, which was invested wholly in Indian rupee and sterling securities. The invested portion of the Note Guarantee Fund was to be invested in government securities of any part of the British Empire or in other securities such as the British Secretary of State for the Colonies might approve (Currency Decree, 1916).

On July 1, 1913, control of Zanzibar was transferred from the British Foreign Office to the Colonial Office, legally taking effect the following year (Colonial Report, 1919: 6). The transfer involved a number of changes within the administration. Chief among them was the newly created post of a British Resident in Zanzibar, which replaced the offices of the prior consul general and first minister. An advisory body, formally known as the Protectorate Council, was led by the British Resident and included a chief secretary and an assistant chief secretary (Bissell, 2011: 106; Colonial Report, 1928: 5).

Due to this administrative change, the Currency Decree, 1916 provided a new arrangement for the Board of Commissioners of Currency. The decree provided that the Board should now consist of the Chief Financial Secretary, the Treasurer, and a member of the commercial community to be nominated by the British Resident (Currency Decree, 1916; Red Book, 1922). It continued to require that currency notes of each denomination be fixed by the Currency

Board, but now with the approval of the British Resident rather than, as formerly, the Financial Member of Council. Currency notes were also now to be printed, kept, issued, and cancelled under the regulations of the British Resident.

The official exchange rate was set at 15 rupees to the pound sterling; this rate held from the time of the currency board's establishment in 1908 until August 1917. From August 28, 1917 to March 31, 1927, however, the Indian rupee officially had a fluctuating exchange rate against the pound sterling, initially because of financial pressures related to World War I and later because of a postwar boom and slump in the price of silver. The Zanzibar rupee followed the Indian rupee, preserving its one-to-one exchange rate with that currency. In practice, the Indian rupee stabilized at about  $13\frac{1}{3}$  rupees to the pound sterling starting in September 1924, and on April 1, 1927 the rate became official. The Zanzibar rupee likewise maintained the same exchange rate to the end of Zanzibar's currency board in 1935.

The year 1935 marked a turning point for the monetary arrangement in Zanzibar, as there were murmurings of an intention to change from rupee currency to East African (shilling) currency, and join the East African Currency Board (EACB) (Bartlett, 1936: 4). The EACB, already consisting of Uganda, Kenya and Tanzania, was originally established in 1919. The EACB's original establishment came from the British desire to issue a currency *specific* to East Africa and to exclude other currencies from that area—namely, the Indian rupee (Mwangi, 2011: 767-768).

On May 29, 1935, J.P. Jones, the Chief Secretary to the Government of Zanzibar, by direction of the British Resident, approved the substitution of the East African currency for the Indian rupee currency (Government Gazette, June 1, 1935: 216). Passed on December 12, 1935, the Currency Decree of 1935 provided that Zanzibar abandon its local currency board and join the East African Currency Board on January 1, 1936 (Currency Decree, 1935: 112).

East African shilling notes and coin became legal tender, replacing Zanzibar Currency Board rupee notes, Indian rupee silver coins, and Seyyidieh copper pice, which ceased to be legal tender on and from April 6, 1936 (Colonial Report, 1936: 28). The exchange value of the currency was controlled and maintained at par with sterling by the operations of the East African Currency Board, London, which was represented in the Protectorate by a Currency Officer (Colonial Report, 1936: 28). The exchange rate for conversion to the new currency was 1.50 East African shillings per Zanzibar rupee (EACB Annual Report, 1936: 4). This rate reflected that the exchange rate of the Indian rupee with the pound sterling, and therefore the cross rate of the Zanzibar rupee, was 13.33 per pound, while the East African shilling was worth one British shilling, or 20 per pound.

The rationale for why Zanzibar ultimately joined the EACB is not explicit in official publications. We assume that because of Zanzibar's proximity to the African mainland, the British government wished to incorporate Zanzibar into the regional economic grouping it was developing in East Africa. Nevertheless, we *do* know that little objection was encountered in exchanging the East African shilling note issues or silver coins, once introduced in the Protectorate. However, subsidiary copper coins were *not* readily accepted at first, and an

“unknown but not inconsiderable number of pice were still in use at the end of the year,” – that is, the end of 1936 (Colonial Report, 1936: 39).

Prior to Zanzibar joining the EACB, local Zanzibar currency notes were fully covered by external reserves and yielded a small annual surplus from the interest earned on investments. The EACB, on the other hand, had far less than 100 percent reserve cover as a consequence of decisions it had made at its founding about the exchange rate for converting Indian rupees and German rupees into East African shillings. (British forces had conquered much of German East Africa during World War I, and after the war the territory had become the British mandate of Tanganyika.) Because Zanzibar was receiving profits from its note issue while the EACB was retaining all net earnings until its external reserves reached 100 percent of currency in circulation, the EACB agreed to pay Zanzibar £2,700 “apart from any contribution to the member Governments out of the Board’s surplus income” (Blumenthal 1963: 3; Lomoro 1964: 3).

Zanzibar and Tanganyika united in 1964 as the Republic of Tanzania. The East African Currency Board arrangement lasted until 1966, when the establishment of central banks in Kenya, Uganda, and Tanzania came to fruition. On June 13 of that year, the government of Zanzibar founded the People’s Bank of Zanzibar, a commercial bank in Tanzania that is licensed by the Bank of Tanzania. The Bank of Tanzania issued the Tanzanian shilling in place of the former East African shilling (Bank of Tanzania, 2015).

### **To What Extent Was the Board of Commissioners of Currency a Currency Board?**

A currency board’s key characteristics are a fixed exchange rate with an anchor currency; unlimited convertibility between its notes and coins and the currency to which it is pegged; and at least 100 percent net foreign reserves against the whole monetary base (Hanke, 2002; Imam, 2010). To what extent did the Board of Commissioners of Currency of Zanzibar actually operate with these characteristics in the years 1908 to 1935, prior to Zanzibar joining the East African Currency Board?

Zanzibar currency notes issued under the Zanzibar Currency Decree of 1908 were fully backed by British Indian rupee securities. These funds were held in the Note Guarantee Fund, kept in the custody of the Currency Board or the National Bank of India (Zanzibar branch), as the Currency Board directed (Currency Decree, 1908, Government Gazette, March 11, 1908: 2).

The Currency Decree, 1908 specified that the Note Guarantee Fund “[should] *not* be invested in any securities of the Government of Zanzibar, but may be invested in such securities of the Government of any part of the dominions of His Britannic Majesty, or in such other securities as the Currency Board may select, subject to the approval of the Financial Member of Council” (Currency Decree, 1908, Government Gazette, March 11, 1908: 3; emphasis added). This provision implies that there could be no domestic assets and only foreign assets. A fixed proportion for foreign reserves is not explicit in the Decree, nor is it in subsequent legislation (East Africa Further Correspondence, 1908: 3). However, our data and analysis show that the

Note Guarantee Fund held assets consisting of at least 100 percent foreign reserves against notes in circulation. Such findings are consistent with the implications of the 1908 decree.

The 1908 decree also provided for full conversion of Zanzibar currency notes into Indian rupees on demand. The Board maintained unlimited convertibility between its notes and coins and the Indian rupee against which they were pegged at a fixed exchange of 15 rupees to 1 pound sterling. This provision of convertibility was critical to build the public's confidence in the local currency.

## **The Data and Our Tests**

We have digitized annual and monthly balance sheet data on the Currency Board from 1908 to 1935, the years in which Zanzibar's local currency board was in operation. The main source was the *Zanzibar Government Gazette*, including a few of the gazette supplements. The balance sheet monthly data are not reported for September 1914 to March 1919, nor for some other scattered individual months, and we could not find balance sheet annual data for some years, since the currency board did not publish statements for certain years for unexplained reasons<sup>4</sup>. We performed tests on the balance sheet items of the Board of Commissioners of Currency.

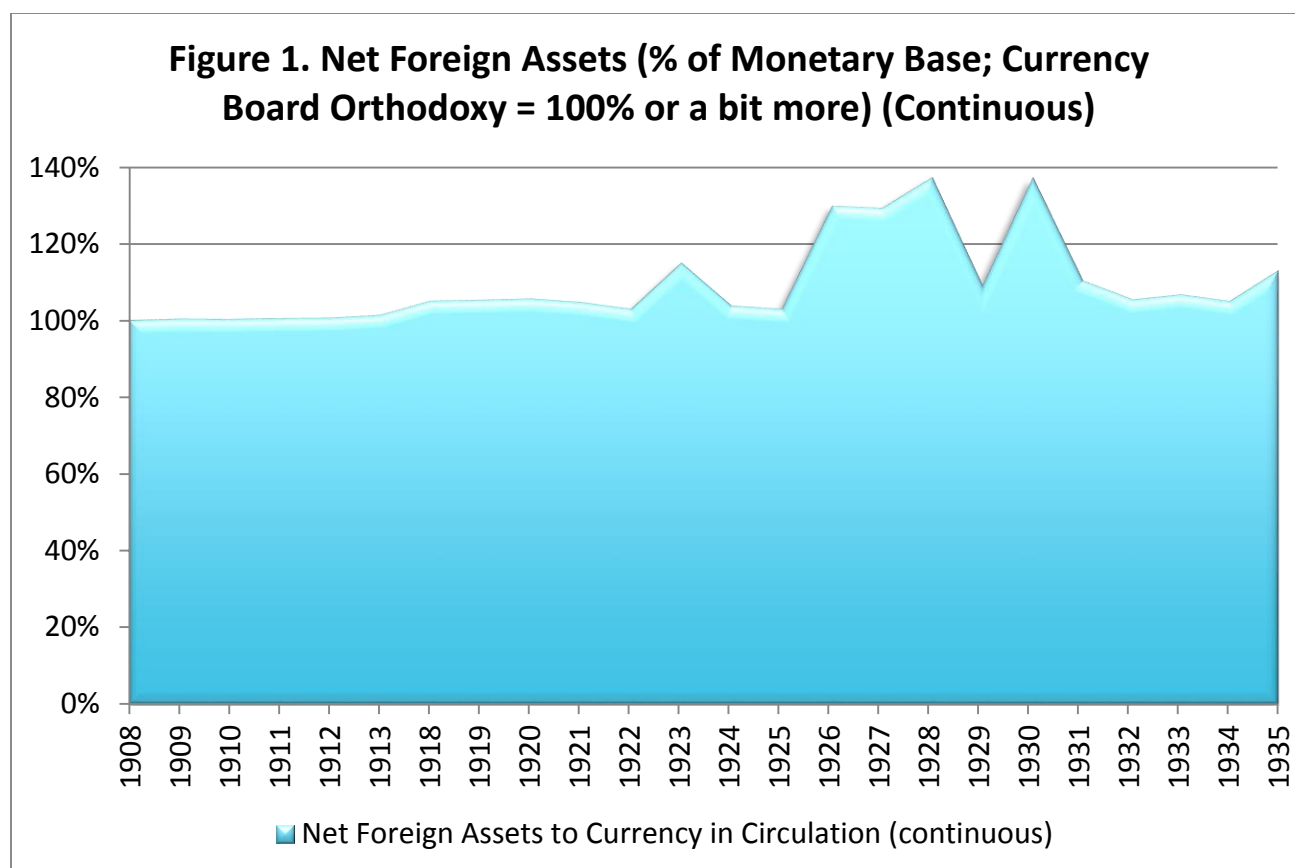
### **Test One: Domestic Assets, Foreign Assets, and the Monetary Base**

We first measured net foreign assets as a share of the monetary base, in Figure 1. Figure 1 is a "continuous" version showing only the available data and omitting gaps. We provide a "discrete" version showing gaps in annual data for the years 1914, 1915, 1916, and 1917 in the accompanying spreadsheet workbook (see Figure 1a in the workbook). From 1908 to 1935, net foreign assets hovered in the range of approximately 100 to 137 percent of currency notes in circulation. Total assets ranged from approximately 100 to nearly 138 percent, a practically identical range to net foreign assets. This makes clear that the currency board's Note Guarantee Fund exclusively consisted of foreign assets, and suggests that the Board operated in a highly disciplined, rule-like manner. It is unclear why the reserve ratio was so far above 100 percent in 1926-1928 and 1930. Prices of British securities do not seem to have rallied sharply in 1926.

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<sup>4</sup> See Appendix B for a detailed discussion of balance sheet monthly and annual missing data.



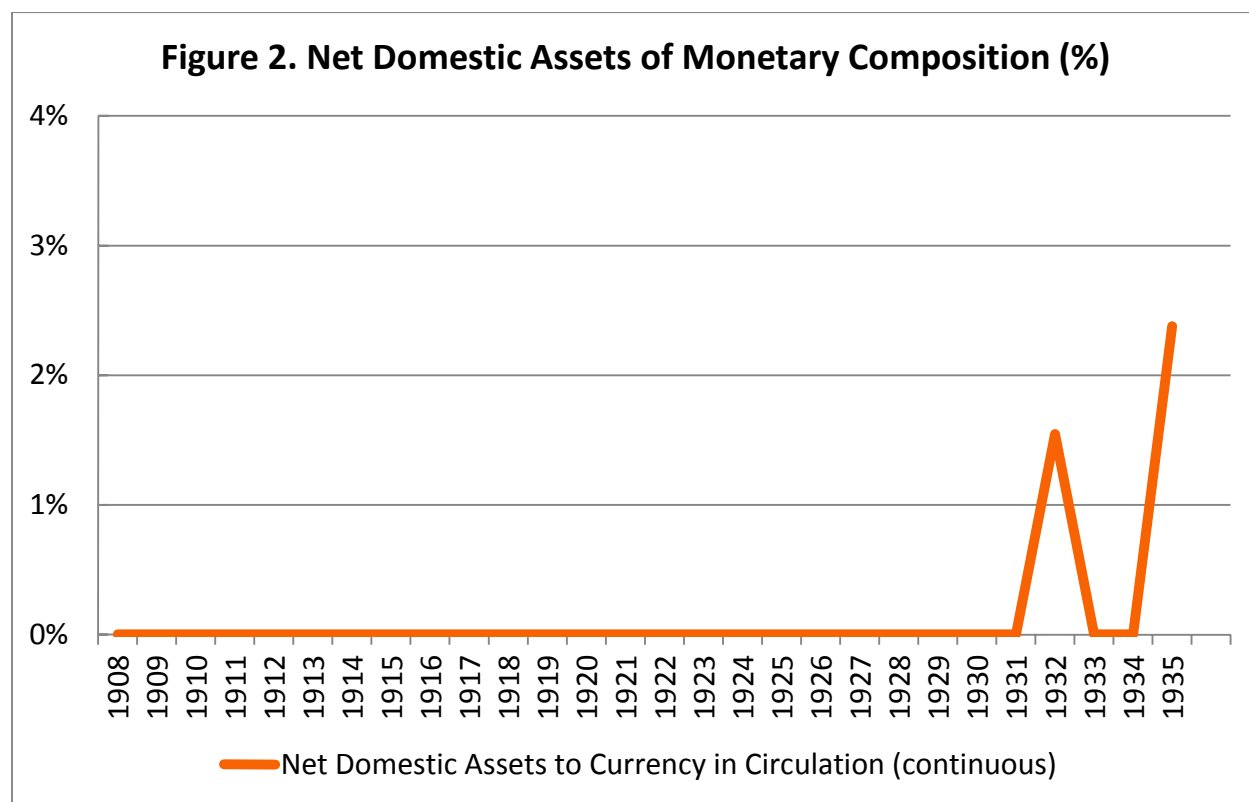


*Main Sources: Zanzibar Government Gazette; calculations.*

Although not pictured, it is worth mentioning the composition of net foreign assets held in the Note Guarantee Fund. During the period 1908 to 1935, net foreign assets consisted of both Indian rupee assets and sterling assets. The percentage of the investment portion that was Indian rupees versus the percentage that was sterling varied throughout the period, but never did one dominate the other (refer to the accompanying spreadsheet to see calculations). Especially in the early years, Indian rupee securities represented the majority of the investment portion (about 65 percent Indian rupee versus 35 percent sterling), while later sterling securities became the larger portion (about 70 percent sterling versus 30 percent Indian rupee). These fluctuations in the respective proportions of the securities reflect Zanzibar's politico-economic situation during the period in which the currency board operated. Zanzibar had strong trade relations with India, but was itself a British colony, with other links to England. Its asset holding pattern is evidence of both Indian and British influence on Zanzibar.

Figure 2 lends some insight into how net domestic assets (namely, Zanzibar government securities as well as a deposit at the National Bank of India, Ltd. in Zanzibar) were 0 percent, if not very close to 0 percent, of the whole monetary base (equal to currency notes in circulation, in this case). This metric shows the drastic contrast between net foreign assets and net domestic assets as respective components of the monetary composition. Figure 2 is a

continuous version, showing all available data. This again highlights the highly disciplined policy practiced by the Board of Commissioners of Currency.



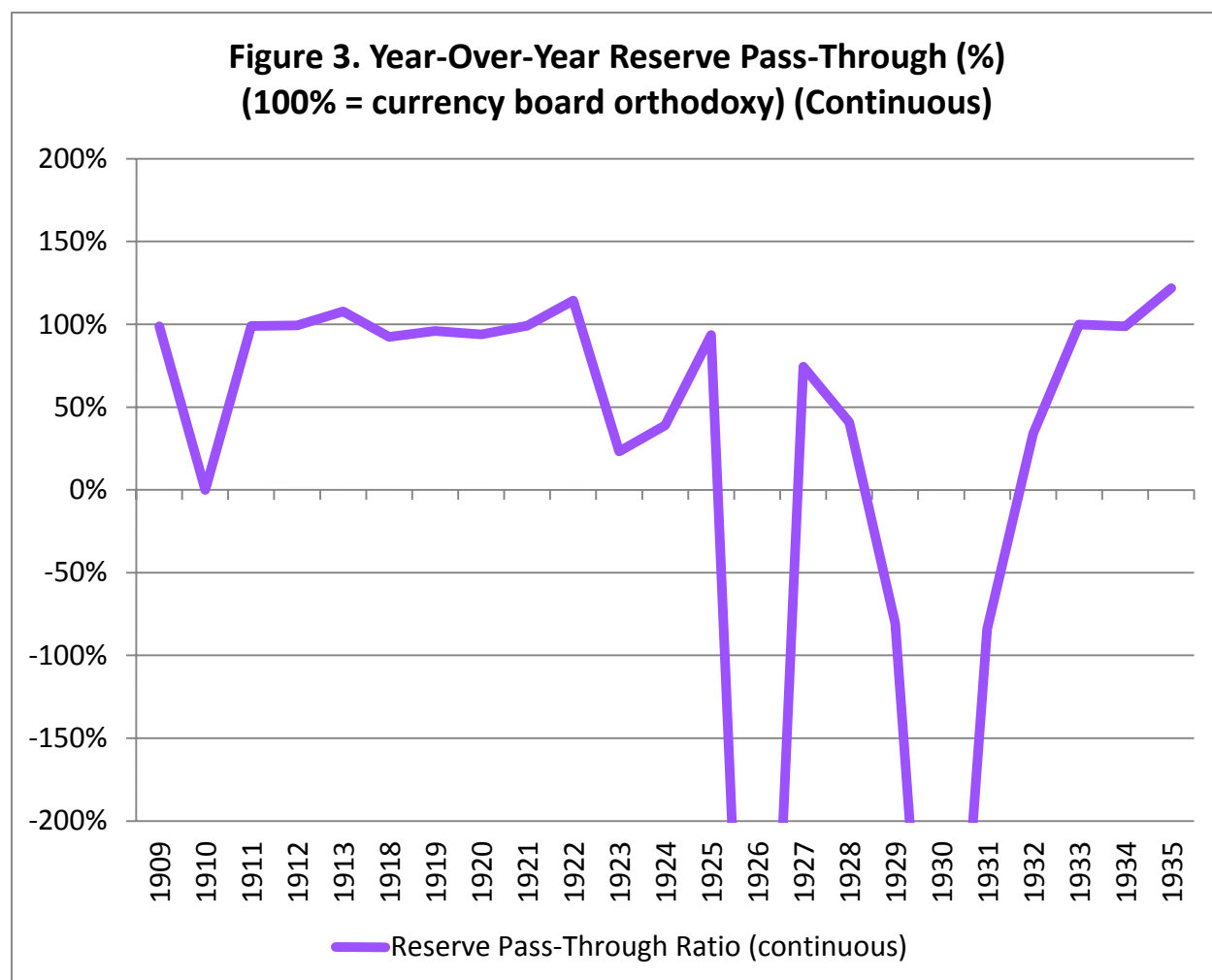
*Main Sources: Zanzibar Government Gazette; calculations.*

## Test Two: Reserve Pass-Through

So far, the legislative history and our data indicate that the Board of Commissioners of Currency may have followed currency board orthodoxy during the period 1908 to 1935. Now, we conduct a second crucial test: the “reserve-pass through”, which measures year-over-year change in the monetary base divided by year-over-year change in net foreign reserves. Measuring on a year-over-year basis tends to eliminate any seasonal effects and diminish the importance of one-time events (such as extraordinary distributions or retentions of profit). An orthodox currency board normally has a reserve pass-through rate that is “close to 100 percent” but in practice, “within a range of 80 to 120 percent” (Hanke, 2008: 280). A reserve pass-through of 100 percent means that if net foreign reserves rise (or fall) by a certain amount, then the Zanzibar monetary base should also rise (or fall) by that same amount (Hanke, 2008).

We have measured reserve pass-through, in Figure 3. Figure 3 is a continuous version, showing only the available data. We provide a discrete version showing missing annual data in the years 1914, 1915, 1916, and 1917 in an accompanying spreadsheet workbook (see Figure 3a in the workbook). The year 1908 is also not shown since it was the first year of the currency board’s operation; hence, the year-over-year calculation required by the reserve pass-through test is

not applicable to 1908. The reserve pass-through was moderately volatile between 1908 and 1935, indicating that the currency board of Zanzibar is in some way unorthodox. The data ranges from a ratio as low as approximately -555 percent to a ratio as high as approximately 121 percent, in 1926 and 1935 respectively. Despite the rather erratic jumps as displayed by the figure, there are some periods in which the reserve pass-through is steady at or near the 100 percent currency board orthodoxy level. In the early years, between 1909 and 1912 and between 1918 and 1921, the ratio hovered just below this threshold at roughly 99.5 percent. The years 1913, 1922, and 1935 have corresponding reserve pass-through ratios that are higher than the orthodoxy mark, averaging at about 114 percent. However, there are definitely volatile jumps in between these seemingly orthodox couplets of years, especially in the middle years of the currency board's operation. For instance, the ratio of -555 percent in 1926, -81 percent in 1929, -462 percent in 1930, and -84 percent in 1931 bring about wild fluctuation, which does indicate unorthodoxy. Even so, Figure 3 suggests that the reserve pass-through ratio loosely held at around 100 percent, despite the volatility in the years of the late 1920s and early 1930s.



*Main Sources: Zanzibar Government Gazette; calculations.*

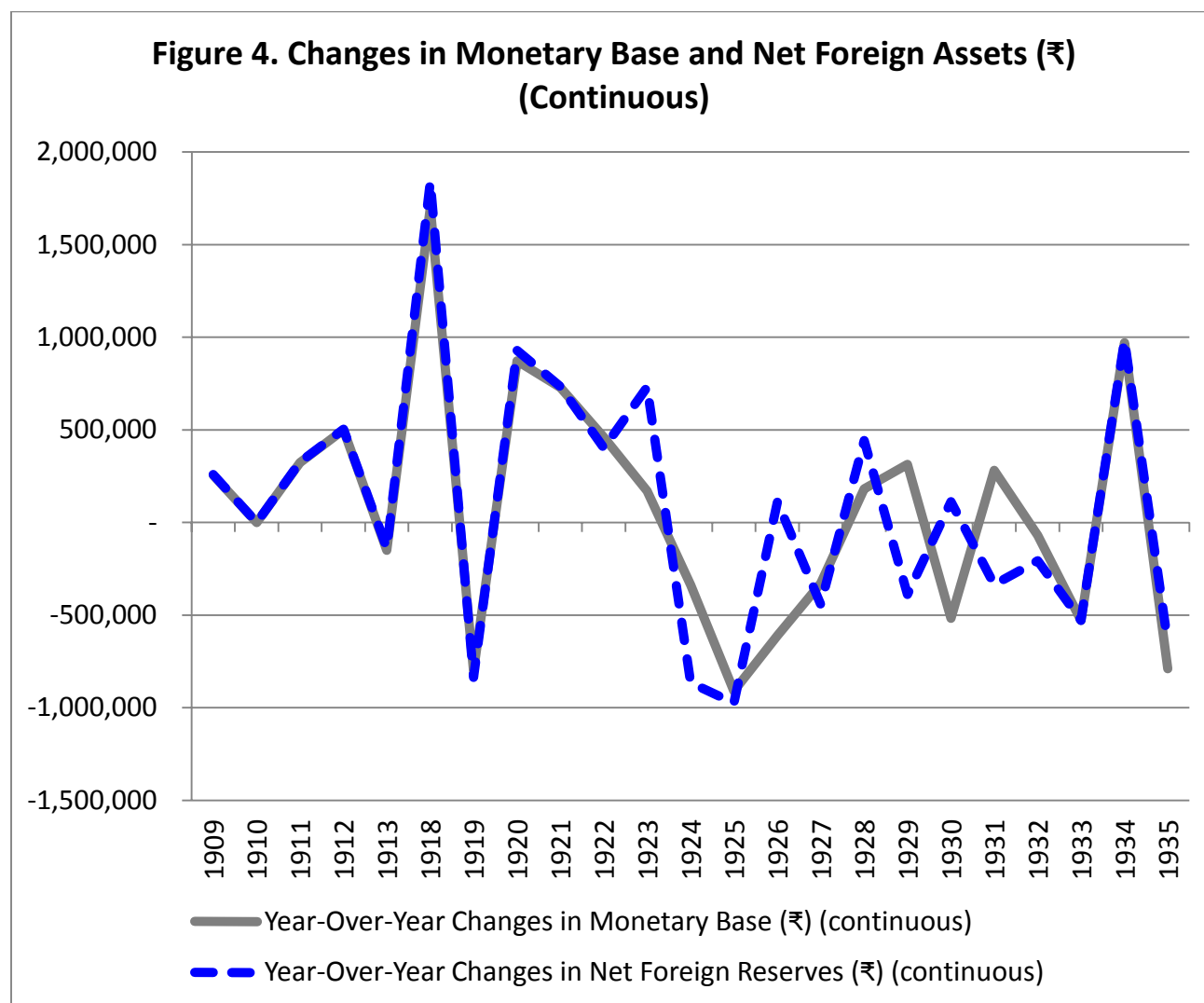
### Test Three: Changes in Monetary Base and Net Foreign Assets

We also measured annual changes in the monetary base and changes in net foreign assets, in Figure 4. Figure 4 is a continuous version, showing only the available data. We provide a discrete version showing missing annual data in the years 1914, 1915, 1916, and 1917 in the accompanying spreadsheet workbook (see Figure 4a in the workbook). The year 1908 is again not shown since this was the first year of the currency board's operation; hence, the year-over-year calculation required by the changes in the monetary base and changes in net foreign assets is not applicable to 1908. A tight linkage between the two metrics means that when net foreign reserves rise (or fall) by a certain amount, the monetary base should also rise (or fall) by that same amount (Hanke, 2008). In Figure 4, we observe a fairly close correlation between changes in notes in circulation and changes in foreign reserves. From 1909 to 1913 as well as from 1918 to 1922, the relationship holds, as changes in the monetary base produced identical, if not, nearly identical changes in net foreign assets. The correlation finds itself again in 1933, where changes in the monetary base directly correspond to changes in net foreign reserves; this relationship holds from 1933 to the end of the currency board's operation in December of 1935.

However, the marked deviations in a few years between 1923 and 1933 do indicate some degree of unorthodoxy. For instance, in 1923 there was a great rise in net foreign reserves (of approximately 730,000 rupees) while only a slight expansion in notes in circulation (of approximately 170,000 rupees). Similarly, in 1924, net foreign reserves significantly dropped (to approximately 866,000 rupees) whereas the monetary base witnessed only a relatively minor contraction (of approximately 337,000 rupees). In 1926, we observe the currency board's first dramatic deviation where a contraction of the monetary base was matched with an expansion of net foreign assets. While net foreign reserves rose by approximately 110,000 rupees, currency notes in circulation contracted by nearly 611,000 rupees. This dramatic deviation explains the significantly low and deviant reserve pass-through ratio of -555%. In 1929, the currency board showed yet another deviation. Net foreign reserves dropped by 389,000 rupees while the monetary base expanded by 314,000 rupees. The year 1930 witnessed an even more dramatic deviation: notes in circulation plummeted by 518,000 rupees while foreign reserves rose by 112,000 rupees. This deviation explains the reserve pass-through ratio of -462%. In 1931, we see another divergence, where the monetary base expanded by 282,000 rupees while foreign reserves fell by approximately 335,000 rupees. Finally, in 1932, we see that both the monetary base and net foreign reserves contracted; however, the small change in notes in circulation (of approximately 70,000 rupees) and the large change in foreign reserves (of approximately 206,000 rupees) generated the anomalous reserve pass-through ratio of 33%.

Despite the tight correlation between changes in the monetary base and changes in net foreign reserves in the first decade and in the final few years of the currency board, the dramatic deviations between 1923 and 1933 suggest that Zanzibar's currency board was unorthodox to some extent. From the bare statistics, the source of the deviations is unclear. The Indian rupee, which fluctuated against the pound sterling starting in August 1917, returned to a rigid exchange rate with sterling de facto in September 1924 and officially in April 1927, so the cause

of divergences between the monetary base and net foreign reserves after 1924 cannot be the effect of changes in the rupee-sterling exchange rate on the currency board's sterling securities. It is possible that there was some difference in accounting practices between the middle period and the beginning and end, such as valuing securities at market value rather than at cost. There may also be some connection with the jump in the currency board's reserve ratio in 1926, noted above. We leave it as a puzzle to be resolved by future research.



*Main Sources: Zanzibar Government Gazette; calculations. "₹" is the symbol for rupees.*

## **Fiscal Discipline, Trade Statistics, and Broad Money Supply**

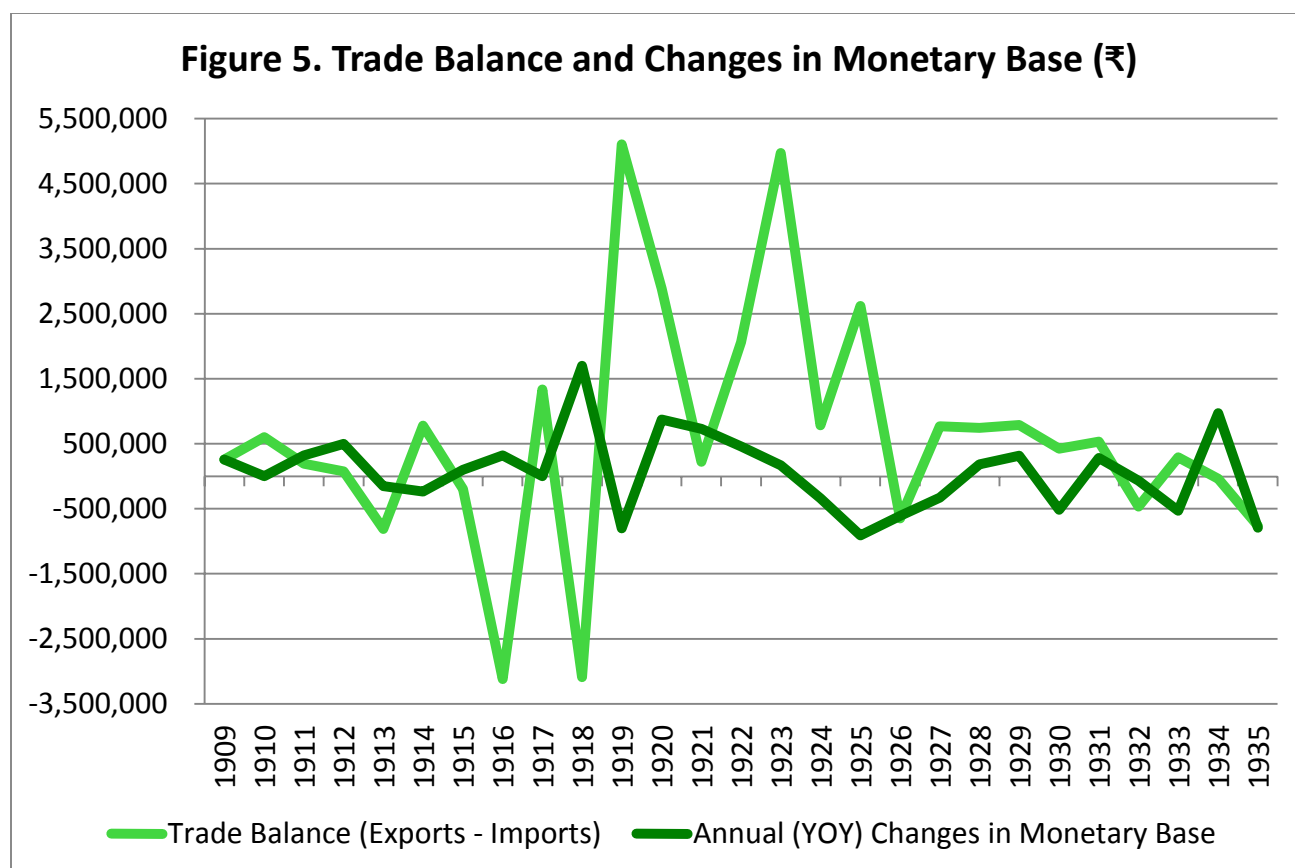
Beyond the three tests that measure currency board orthodoxy, we also analyze Zanzibar's level of fiscal discipline, trade statistics in relation to changes in the monetary base, and currency board share in the overall money supply.

Countries that have adopted currency boards tend to have respectable growth rates, price stability, and, above all, fiscal discipline (Hanke, 2002: 92). Zanzibar's government budget was largely in balance from 1908 to 1926, with a few years in deficit. However, from 1926 to 1931, the budget was in a clear deficit, year 1926 marking the period's largest deficit. The 1926 Colonial Report and other sources we consulted do not provide an explanation for the deviation in this year; hence, the happenings in 1926 remain a subject for future researchers to investigate<sup>5</sup>. From 1931 to 1935, the government budget seems to balance out once again, as it had in the early years of the currency board. Because the government budget was predominantly in balance during its twenty-eight year period, we infer that Zanzibar's currency board enforced high fiscal discipline.

Some scholars have contended that currency boards require a trade surplus to generate funds to expand the monetary base. In other words, changes in the monetary base often connect to the trade balance—notes in circulation increase when there is a trade surplus and decrease when there is a trade deficit. We performed a test to examine Zanzibar's trade statistics in relation to changes in its monetary base. We measured the trade balance (exports minus imports) against changes in the monetary base, in Figure 5. Here, we see that only the early years of the currency board show a correlation between the two metrics, and a loose correlation at best. By contrast, the bulk of the period shows no apparent relationship between the annual trade balance and changes in the monetary base. Between 1909 and 1913, a trade surplus where exports exceeded imports produced an increase in currency notes in circulation. However, from 1914 onward, a trade surplus or trade deficit in any given year did not imply a respectively corresponding expansion or contraction in the monetary base. For instance, in 1916 and 1918, there were trade deficits of 3,120,000 and 3,089,700 rupees, respectively, contrarily matched with expansions in the monetary base of 323,495 and 1,698,570 rupees, respectively. Similarly, in 1919, exports exceeded imports by approximately 5,105,300 rupees while the year-over-year change in the monetary base rapidly dropped by nearly 801,500 rupees. In 1923, there was a trade surplus that was, in fact, matched with an increase in notes in circulation; however, the monetary base expanded by merely 169,550 rupees whereas exports greatly exceeded imports by 4,974,260 rupees. In Figure 5, the wide gaps in the years 1916, 1918, 1919, and 1923 reveal these stark deviations. This lack of a correlation suggests that currency boards may not require a trade surplus to generate funds to expand the monetary base.

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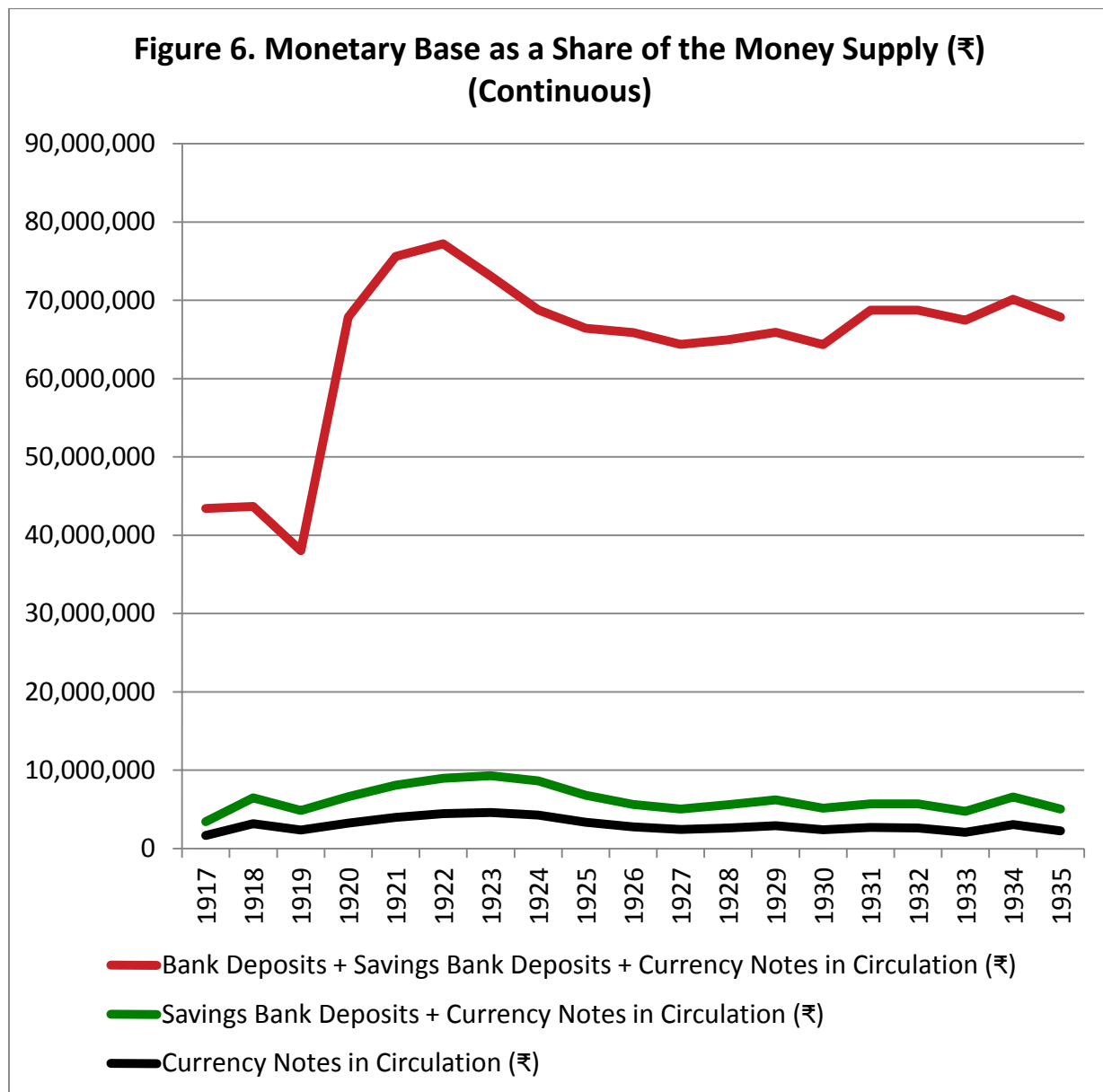
<sup>5</sup> The source of the unusual deviations for 1926 requires further investigation, but may be related to the effects of poor revenue from the clove harvest during that year (Colonial Report, 1926: 7).



*Main Sources: Zanzibar Government Gazette; calculations.*

We performed a final test that looks at the currency board's share in the overall money supply, shown in Figure 6. Figure 6 is a continuous version, showing only the available data. We provide a discrete version showing missing annual data in the years 1908, 1909, 1910, 1911, 1912, 1913, 1914, 1915, and 1916 in the accompanying spreadsheet (See Figure 6a in the spreadsheet). The figure is a stacked representation of the money supply, where the bottom layer represents the monetary base and the layers stacked above represent broader measures of the money supply. The second layer includes both savings bank deposits and currency notes in circulation. The third layer includes savings bank deposits, bank deposits, and currency notes in circulation. Indian coins circulated extensively and some other foreign coins likely circulated as well; however, no statistics for Indian and other foreign coins exist. Thus, we characterize the overall money supply as the sum of the monetary base, savings bank deposits, and bank deposits. In Figure 6, we observe a close relationship between currency notes in circulation and broader measures of the money supply. Specifically, there was a tight correlation between the monetary base (labeled in black) and savings bank deposits (labeled in green), and bank deposits (labeled in red), respectively. Although not apparent at first, there is indeed a correlation between the monetary base and bank deposits. By disregarding that bank deposits significantly increased the overall money supply, and solely observing the trajectories of the two metrics, we do see a close correspondence between the amount of bank deposits in any given year and the amount of currency notes in circulation in that year. In other words, the

trajectories of these two metrics did tend to align with one another. The figure therefore elucidates the tight relation between the monetary base and other broad measures of the money supply (namely, savings bank deposits and bank deposits). The correlation between currency notes in circulation and bank deposits plus savings bank deposits is 0.3326 (see accompanying spreadsheet).



*Main Sources: Zanzibar Government Gazette; calculations.*



## Conclusions

The data tests and the overall legal framework suggest that Zanzibar's currency board was definitely orthodox in its early and late years, and quite possibly though not indubitably so in its middle years. The data tests and the overall legal framework suggest that Zanzibar's currency board was definitely orthodox in its early and late years, and quite possibly though not indubitably so in its middle years. The Currency Decree, 1908 provided that the local Zanzibar currency was fully backed by sound foreign assets, those being Indian rupee securities, and established the Board of Commissioners of Currency as the small overseeing body in control of issuing the currency notes (Government Gazette, March 11, 1908: 2). Additionally, the invested securities were to consist of strictly Indian rupee and sterling securities, and government securities that had to be approved by the British Secretary of State (Currency Decree, 1916). Such provisions imply that the currency board distanced itself from the Zanzibar local government and was thus able to efficiently perform its primary function: to supply a stable, convertible currency that facilitates market exchange (Hanke, 2002: 88). These legislations embody the features of and are consistent with currency board orthodoxy.

Some of the statistical tests also suggest orthodoxy. Net foreign assets ranged from approximately 100 to 137 percent of currency in circulation, and total assets ranged from approximately 100 to nearly 138 percent of currency in circulation between 1908 and 1935, remaining at or above 100 percent, suggesting that during the period the Board of Commissioners of Currency acted in a highly rule-like manner. Moreover, the rather flat index showing net domestic assets as a percent of the monetary composition also suggests orthodoxy.

However, the volatile reserve-pass through ratio seems to indicate a degree of unorthodoxy during the currency board's middle years. Because of these conflicting results, whether Zanzibar's currency board operated with orthodoxy is a question that remains to be more fully answered by further study of currency board balance sheet data and the development of other statistical tests to measure currency board orthodoxy. The slightly volatile reserve pass-through metric does suggest the Board of Commissioners of Currency were rather unorthodox. Yet, there may be circumstances in which reserve pass-through is not as good an indicator.

Although this study gathered and digitized mass data from 1908 to 1935, it is prudent to note that there are several months when data are incomplete. This might not affect the significance of the statistical tests, but possible future studies might want to gather the missing data and hence confirm the reliability of the current study. (See Appendix B, Missing Data)

### **Postscript: Companion Spreadsheet Workbook and Source Documents**

The companion spreadsheet workbook to this paper contains the underlying data, calculations, and original versions of the graphs. The workbook also contains some data not used in the paper, notably annual data of revenue and expenditures, trade statistics, banking and savings deposits, and some miscellaneous data such as population.

## Appendix A. Legislative History of the Zanzibar Currency, 1908-1935

Here, we provide a brief discussion of the legal framework of the Zanzibar currency and legislation that relate to the Board of Commissioners of Currency.

- Legislation consisted of the Decrees of the Sultan, and certain Imperial Statutes of general application (Colonial Report, 1931, page 4).
- The British Resident and his staff controlled legislation enacted in Zanzibar, but this legislation took the form of decrees put into effect in the name of the Sultan and countersigned by the British Resident (Morris, 1979: 21). Until 1908, these decrees were only enforced in Her Britannic Majesty's Court for Zanzibar set up by the Zanzibar Order in Council of 1897; in the Sultan's courts the only law enforced was Islamic law (Morris, 1979: 21). After the currency board's establishment in 1908, however, while Islamic law remained the fundamental law in civil matters, the Sultan's decrees were also applicable in all courts.
- Note also that the entire legal system in respect of Her Britannic Majesty's Court was based on that of India.
- *The Currency Decree, 1908*. No. 3 of 1908, Assented March 11, 1908.  
Currency Notes: Government currency note issue established. Currency notes issued were set with the British Indian rupee on demand.  
Board of Commissioners of Currency: Board arrangement and organization specified.  
Denomination: Currency notes may be for any of the following denominations, 5, 10, 20, 100 rupees, and the number of notes of each denomination respectively shall be such as may from time to time be fixed by the Currency Board with the approval of the Financial Member of Council.  
Legal tender: Currency notes made legal tender under the Zanzibar Government for the amount named therein  
Coin: Silver rupee of British India, of the standard weight and fineness enacted in the Indian Coinage Act, 1906, is made the standard coin of the Protectorate and British sovereign made legal tender at Rs. 15 to the pound  
Note Guarantee Fund: Comprised of two components: Coin portion and Investment Portion. The coin portion could not be less than a fixed proportion of the notes in circulation (at a given time); the proportion was set at two-thirds (66 2/3%). Included a provision stating that the invested portion should be invested in securities of Government of any part of dominions of his Britannic majesty and *not* invested in any Zanzibar Government securities.  
Depreciation Fund: Fund established as part of the portion of the Note Guarantee Fund.
- *Assented Currency Amendment Decree: The Currency Decree, 1909*. No. 21 of 1909. Assented December 2, 1909.  
In section 5, subsection (1), after the figures and word "20 rupees," the following figures and word shall be inserted: "50 rupees," and after the figures and word "100 rupees," the following words and figures shall be inserted, "and any multiple of 100 rupees as from time to time shall be determined by the currency board."

- *Assented Currency Amendment Decree: The Currency Decree, 1911.* No. 2 of 1911. Assented April 5, 1911.

Gold: Gold coins whether coined at the Royal Mint in England or at any mint established as a branch of the Royal Mint were made legal tender in payment or on account at the rate of 15 rupees for one sovereign (Currency Decree, 1911: 1)

Coin: All other silver coins of British India (apart from the British Indian silver rupee) were legal tender for the payment of an amount not exceeding five rupees, but for no greater amount
- *The Zanzibar Currency Decree, 1916.* Cap. 51, No. 3 of 1916. Assented February 14, 1916

Control of Zanzibar transferred from Foreign Office to Colonial Office in 1914

Newly Created post of British Resident, which removed the offices of the prior consul general and first minister. With the newly created post of British Resident, the Currency Decree of 1916 includes changes to the Decree of 1908 with respect to the British Resident. Affected areas of the decree include, Acting Member, Regulation as to preparation, Coin portion of the Note Guarantee Fund, Application of Income of Depreciation Fund, Deficiency in Note Guarantee Fund

Office: The Currency Board shall have an office at Zanzibar, and may employ such officers and persons as may from time to time be required (replacing the prior 1908 provision that that such persons were subject to the approval of the Financial Member of Council)

Denomination: The number of currency notes of each denomination shall be as such as may from time to time be fixed by the Currency Board with the approval of the British Resident

Note Guarantee Fund: The coin portion could not be less than a fixed proportion of the notes in circulation (at a given time); the proportion was changed to one-half, 50% (formerly, in 1908, the proportion was fixed at two-thirds,  $66\frac{2}{3}\%$ )

Prohibition regarding dealings in Legal Tender: No person shall sell or purchase or take or receive in exchange, or offer to sell or purchase or take or receive in exchange, any coin or currency note which is for the time being legal tender in the Protectorate for an amount other than its face value, or accept or offer to accept any such coin or currency note in payment of a debt or otherwise for an amount other than its face value.

*The remainder of the 1916 Currency Decree was a comprehensive restatement of the basis of the government note issue (established in the Currency Decree, 1908)*
- *Government Notice No. 20 In re: The Zanzibar Currency Decree, 1916.* Assented February 26, 1916

In pursuance of the provisions of the Decree above-named, the members of the Currency Board give notice that the fixed proportion of the coin portion of the Note Guarantee Fund shall be 50% of the notes for the time being in circulation.
- *The Zanzibar Currency Amendment Decree, 1920.* No. 7 of 1920. Assented July 5, 1920

Made revisions to the 1916 Decree
- *The Zanzibar Currency Amendment Decree, 1922* (should be read and construed as one with "The Zanzibar Currency Decree, 1916."). No. 1 of 1922. Assented January 2, 1922.

Made revisions to the 1916 Decree Prohibition regarding dealings in legal tender: "No person shall sell or purchase or take or receive in exchange or offer to sell or purchase

or take or receive in exchange any coin or currency note which is for the time being legal tender in the Zanzibar Protectorate for an amount other than its face value, or accept or offer to accept any such coin or currency note in payment of a debt or otherwise for an amount other than its face value

- *The Zanzibar Currency Decree, 1935*. No. 21 of 1935. Assented December 16, 1935  
British East Africa shilling to be standard coin: The British East Africa shilling coined under the provisions of the Order-in-Council shall be the standard coin of the Protectorate.

Ratio of shillings and cents of a shilling to pounds, rupees, and annas, pice, and cents of a rupee: Where any sum due to be paid after the coming into operation of this Decree is payable in pounds or pounds sterling, whether the obligation to make the payment was incurred before or after the coming into operation of this Decree, the payment may be made in shillings at the rate of twenty shillings to the pound or pound sterling.

Legal tender: (i) Currency notes issued by the East African Currency Board shall be legal tender in the Protectorate of the amounts respectively expressed therein. (ii) It shall be lawful for the East African Currency Board to pay the bearer of a currency note the amount named therein, and the amount required for such payment shall be a charge on the monies and securities in the hands of the Board and failing them on the general revenue of the Protectorate

Note and Coinage Redemption Fund: (1) There shall be established a Fund to be called the Note and Coinage Redemption Fund and there shall be transferred to or paid into the said Fund - (a) all monies, securities, and investments standing to the credit of the Note Guarantee Fund and the Depreciation Fund established under the provisions of the Currency Decree hereby repealed; (b) all monies held by the Currency Board established under the provisions of the said Decree; and (c) the proceeds of the sale of all coins declared to be legal tender under the provisions of the said Decree. (2) There shall be charged against the said Fund: (1) the cost of all currency notes and coins of the East African Currency Board paid by the Treasurer in exchange for the notes and coins declared to be legal tender under the provisions of the Currency decree hereby repealed until 6 months after all such notes and coin shall have ceased to be legal tender; and (b) all costs and expenses incurred by the Treasurer in connexion with the exchange for the currency of the East African Currency Board of the currency declared to be legal tender under the Currency Decree hereby repealed.

Repeal of Cap. 94: The Currency Decree is hereby repealed.

## Appendix B. Missing Data

To repeat, we performed tests on the balance sheet items of the Board of Commissioners of Currency. However, some balance sheet monthly data as well as annual data are not reported for some years.

The balance sheet annual data are apparently not reported for these years: 1908, 1910, 1912, 1914, 1915, 1916, 1917, 1923, 1928, 1929, 1931, and 1933. Annual data for any given year can be found in the Statement of Assets and Liabilities, reported for December 31 year end, often found in the last December issue of the subsequent year's government gazette. For example, annual data for the year 1921 appear in the Statement of Assets and Liabilities in the last December issue of the 1922 Gazette. For the years listed above, though, the corresponding government gazettes in the following year contained no annual data in a Statement of Assets and Liabilities. For some years in which annual data were missing, we used the corresponding December 10 monthly data in place of the missing December 31 annual data for calculations and statistical analysis. Those years were 1908, 1928, 1929, 1931, and 1933. For 1910, we substituted October 10 data, and for 1912 and 1923 we substituted November 10 data for missing December 31 data. No monthly data for any calendar month was provided for the years 1914, 1915, 1916, and 1917 in the Official Gazettes, Colonial Reports, or Blue Books that we consulted; therefore, we were not able to use any substitute annual data for these years. It is unknown as to whether this data is truly missing.

The Commissioners of Currency apparently did not publish monthly balance sheet data for January-April 1908; February, April, May, November, and December 1910; April, June, September, October, and December 1912; January, May, and July 1913; June and July 1914; the long period September 1914-March 1919; November, and December 1919; December 1921; December 1923; October 1925; and December 1926. Our main source for monthly balance sheet data was the *Zanzibar Government Gazette*, which published abstracts of notes in circulation on the tenth of each calendar month. Although we were able to obtain the gazettes published for each of the years mentioned above, the libraries (namely, the Library of Congress and the Center for Research Libraries) we consulted were missing some gazette issues. We presume these issues contain the monthly balance sheet data we are missing here. For the years 1914 through 1918, we were able to obtain the gazettes for each respective year; however, the *Gazettes* (including the supplements) during this period contained no currency board data for any calendar month during the year. We examined every issue of the *Zanzibar Government Gazette* from 1908 to 1935; however, the currency board did not seem to have published monthly statements for the following dates: 1914, 1915, 1916, 1917, and 1918.

The Zanzibar Government published brief summaries of the note issue in only several of its annual reports on the financial state of the country. The Board of Commissioners of Currency did not publish an annual report, but did publish monthly abstracts of notes in circulation on the tenth of each calendar month in the *Zanzibar Government Gazette*. Even in these publications, official narrative detail about the currency note issue is extremely scarce.

## Appendix C. Zanzibar Principal Events of Economic Importance (1890-1935)

(Bartlett 1936: 7-9)

- 1890: Assumption by Great Britain of Protectorate over Zanzibar
- 1895: Assumption by Great Britain of Protectorate over mainland between Uganda Protectorate and coast, and between River Juba and northern frontier of German sphere
- 1908: Silver rupee of British India, of the standard weight and fineness enacted in the Indian Coinage Act, 1906, is made the standard coin of the Protectorate and British sovereign made legal tender at Rs. 15 to the pound  
Government currency notes issue
- 1913: Control of Protectorate informally transferred from Foreign Office to Colonial Office
- 1914: Control of Protectorate formally transferred to Colonial Office. Protectorate Council and Offices of High Commissioner, British Resident, and Chief Secretary constituted
- 1917: Owing to rise in price of silver rate of exchange raised by Government of India to 1s 5d.
- 1918: Rise in sterling value of rupee. Rate of exchange raised to 1s. 6d.
- 1919: Rate of exchange raised by successive steps to 2s. 4d.
- 1920: Exchange value of rupee fixed by Government of India at 2s. gold  
Exchange after rising to 2s. 10d. In February fell to 1s. 4 3/4d. in December.  
British sovereign demonetized in the Protectorate.
- 1921: Exchange rose to 1s. 6 1/4d. In January, fell to 1s. 2 7/8d. In March and closed at 1s. 3 7/8d.
- 1922: Exchange ruled fairly steady in neighborhood of 1s. 4d.
- 1923: Exchange opened at 1s. 4d. And rose to 1s. 5 1/4d. In December
- 1924: Exchange opened at 1s. 5 1/8d. And after many fluctuations closed at 1s. 6 1/8d.
- 1925: Office of High Commissioner abolished.  
Exchange ruled steady around 1s. 6d.
- 1926: Executive and Legislative Councils constituted  
Exchange kept in neighborhood of 1s. 6d.
- 1927: Exchange value of rupee fixed by Government of India at 1s. 6d. gold
- 1930: Gold bullion standard suspended by Government of India
- 1935: Intimation of intention to change from rupee currency to East African (shilling) currency as from January, 1936

(Note: Recall that under the old British monetary system, £1 = 20 shillings (s.) = 240 pence (d.).)

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