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Abstract

In the 19th century, Japan was one of the nations where the Mexican dollar had a lasting presence. The Meiji government introduced the yen as a new domestic currency during the 1870s and began tightening regulations on *yogin* trading, which involved the foreign exchange of Mexican and Japanese silver currencies. The statistical evidence provided in this paper illustrates that the risk of *yogin* trading saw a substantial rose as a result of the intensified intervention by the Meiji government. The policies to control *yogin* quotes proved to be unsuccessful. The prioritization of financial security led to a policy intervention characterized by inconsistency, enabling the reintroduction of speculative transactions that had been banned earlier.

Keywords: *yogin* trading, speculation, intervention.

Throughout history, various currencies have held the status of internationally recognized units of account, such as the Spanish Dollar during the 17th and 18th centuries, gold during the gold standard era, the Pound Sterling before 1944, and the U.S. Dollar since that period. In the 19th century, the Mexican silver dollar could also serve as another good example. Japan was one of the nations where the Mexican silver dollar had a lasting presence until the adoption of the international gold standard system (Andrew 1904; Hernandez 2001). While not commonly used in daily transactions, the Mexican silver dollar could still be an important asset for merchants engaged in foreign trade in Japan until the 1880s. In 1876, Mitsui Bank (now Sumitomo Mitsui Banking Corporation) reported Mexican silver dollar deposits totaling 2.28 million yen, while yen deposits amounted to 9.09 million yen (Mitsui Bank, 1957, p. 371).

From the opening of the port of Yokohama in the 1850s until the start of the silver convertibility system in 1885, *yogin* trading—exchanging the Mexican dollars for Japanese currency—was conducted in Yokohama. The term *yogin* refers to the Mexican silver dollar. *Yogin* trading has been the central focus of interest in studies examining the historical backdrop before and after the introduction of the yen through the New Currency Ordinance of 1871 (Shimamoto 1942; Yamaguchi 1957; Hora 1977; Teranishi 1982; Ishii 1987; Mikami 1989; Yamamoto 1994; Ono 2000; Takahashi 2018; Shikano 2023). Since government notes began to be used in yogin trading from 1874, the Meiji government viewed yogin quotes as the value of the yen measured by Mexican dollars. Yokohama City (1963, p.406) highlighted the considerable scale of speculation in *yogin* trading in 1879: the demand for *yogin* in foreign trade averaged approximately $2 million per month, with the actual monthly *yogin* trading volume totaling $17 million. In 1879, the government abolished the existing *yogin* trading platform and introduced a new one, the Yokohama Yogin Exchange, which was renamed the Yokohama Exchange in the same year.

This paper explores the practices of *yogin* trading at the Yokohama Exchange, which was established in 1879, as the foundational framework for the observed widespread speculation. Given that both Tokyo Koto Shogyo Gakko Chosabu (1914) and Yokohama City (1963) have provided comprehensive factual overviews of the *yogin* trading platform, this paper could focus on political interventions against the settlement methods in the trading system.

This paper provides statistical evidence that both the expected return and risk of *yogin* trading surged since the Meiji government's intervention was intensified. The currency value of the yen, as indicated by *yogin* quotes, became more unstable in response to the tightening of regulations. The government, alarmed by the speculative fever caused by short selling, initially tightened regulations on trading methods that encourage such practices. However, these regulations were later relaxed, as brokers disregarded them and the government believed that increased speculative activity on the exchanges would boost their revenues, thereby increasing tax revenues.

Yamamoto (1994) has found that nearly 16 million coins flowed abroad from 1877 to 1881, and that this outflow became the basis for the circulation of the yen in East Asia. In February 1875, the government began minting heavier silver coins, increasing their weight from 416 to 420 grains (from 26.96 to 27.22 grams). While the intention was to eliminate unwanted coins, this move inadvertently attracted lower-quality coins to Japan. In 1878, the government reverted to minting lighter coins. Following the inflationary period after the Seinan Senso, the Civil War of 1877, silver coins began to be traded based on their bullion values and were also used for foreign payments. As Shizume and Tsurumi (2017) have explained, the Meiji government was issuing more government notes to raise money for military spending.

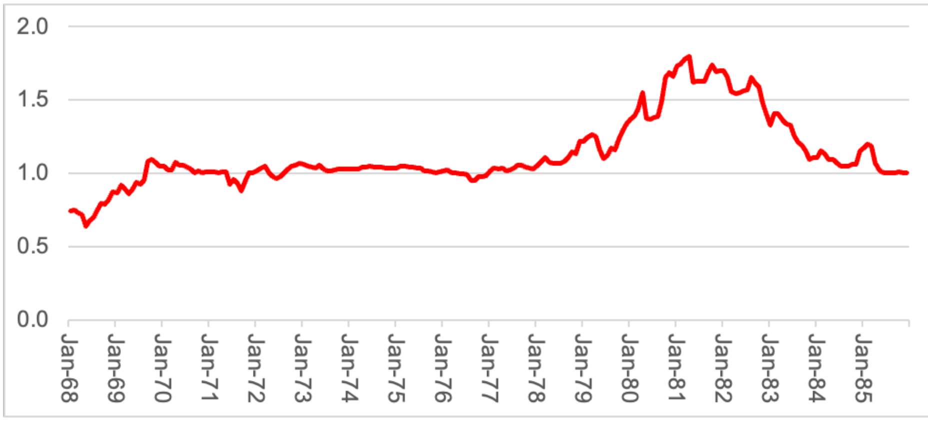
This paper presents the hypothesis that, in addition to these circumstances, the *yogin* market could be destabilized by the inconsistent framework of the policy intervention.

The paper is organized as follows. Section 1 reviews the basic statistics of *yogin* quotes time-series data and confirms the market trend at the time of the establishment of the Yokohama Exchange. Section 2 describes the process leading up to the establishment of the Yokohama Exchange. Section 3 outlines the trading system implemented within the Yokohama Exchange. The hypothesis is presented based on the aforementioned facts in Section 4. Finally, Section 5 offers concluding remarks.

1 *Yogin* Quotes Data

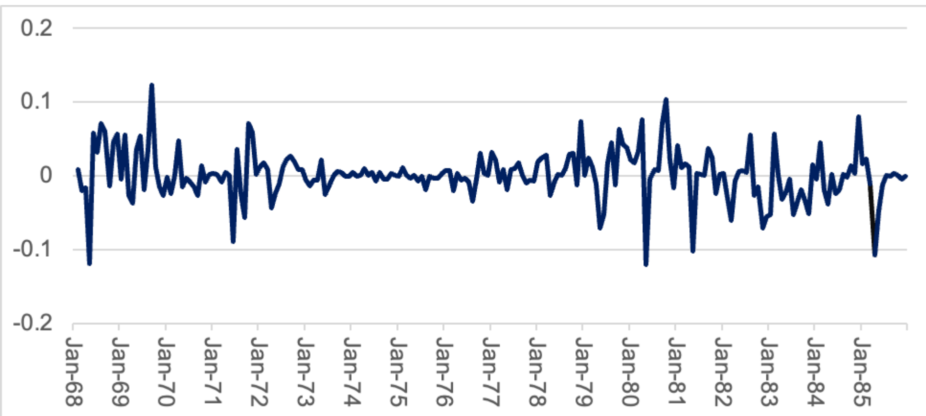
Figure 1 displays the *yogin* quotes movement in yen from January 1868 to December 1885. Both Yokohama City (1963) and Yamamoto (1994) provide lists of the yogin quotes spanning January 1868 to December 1885, featuring prices in monme until October 1879 and then transitioning to yen from November of the same year. Yokohama City (1963) explains that multiplying the yen-based quotes by 60 yields *yogin* quotes in monme. Since a fixed exchange rate of 60 monme per Mexican silver dollar had been established since 1869, *yogin* quotes settled in the vicinity of one yen until 1878.

Figure 1 *Yogin* market prices in yen from January 1868 to December 1885



Data: Yokohama City (1963, p.359) and Yamamoto (1994, pp.100-101).

Figure 2 Month-to-month difference in logarithmic values of *yogin* quotes



Data: Yokohama City (1963, p.359) and Yamamoto (1994, pp.100-101).

Figure 2 shows month-to-month growth rates (difference in logarithmic values) of *yogin* quotes. The rates display a relatively flat trend from 1874 to 1876, and start to fluctuate markedly from 1879 onward.

Table 1 presents basic statistics (mean, standard deviation, minimum, and maximum values) of month-to-month growth rates (differences in logarithmic values) for *yogin* quotes from January 1869 to December 1885, including four periods: (1) January 1869 to December 1873, (2) January 1874 to December 1878, (3) January 1879 to September 1881, and (4) from October 1881 to December 1885. When procuring Mexican dollars through *yogin* trading, Japanese silver coins were used in period (1), and using government notes in *yogin* trading started from 1874. Regulations on *yogin* trading began to tighten from 1879, coinciding with the initiation of deflation under Masayoshi Matsukata in October 1881.

Table 1 Basic Statistics of month-to-month growth rates of yogin quotes

	Observations	Mean	Standard deviation	Min	Max
1869:1 - 1885:12	204	0.0007	0.0319	-0.1206	0.1231
(1) 1869:1 - 1873:12	60	0.0027	0.0317	-0.0887	0.1231
(2) 1874:1 - 1878:12	60	0.0028	0.0163	-0.0351	0.0733
(3) 1879:1 - 1881:9	33	0.0099	0.0460	-0.1206	0.1033
(4) 1881:10-1885:12	51	-0.0103	0.0330	-0.1068	0.0795

Data: Yokohama City (1963, p.359) and Yamamoto (1994, pp.100-101).

Comparing sub-period (2) to sub-period (1), the mean return (as expected return) slightly increased from 0.0027 to 0.0028 or remained nearly unchanged. Additionally, volatility decreased from 0.0317 to 0.0163. In period (3), the mean (± standard deviation) of the growth rate is 0.0099 (± 0.0460). Comparing period (3) to period (2), there is an increased expected return and increased volatility. In period (4), the mean (± standard deviation) of the growth rate is -0.0103 (± 0.0330). When comparing the statistics for periods (3) and (4), the sign of expected returns changes. Additionally, volatility is higher than in periods (1) and (2). The instability in the market after the tightening of regulations on yogin trading would be remarkable.

Even though the Meiji government aimed to stabilize the value of the yen by tightening regulations on *yogin* trading, the risk of *yogin* trading increased. In period (3), which followed the regulatory tightening, the expected return on speculation became higher than in other periods. In period (4), since the implementation of the deflationary policy by Masayoshi Matsukata, the exchange rate of the Mexican dollar declined due to the increased value of the yen. Since the expected returns during this period could be notably lower, having a short position in futures trading, for example, could seize a speculative opportunity.

2 Process Leading up to the Establishment of the Yokohama Exchange

This section outlines (1) the historical progression of the *yogin* trading platform up to the establishment of the Yokohama Exchange, and (2) government interventions in 1879.

2.1 *Yogin* Trading Platform

Yogin trading was based on the private order since the 1860s. Following the Treaty of Amity and Commerce in 1858, the Port of Yokohama was officially inaugurated. Exporters wanted to sell Mexican silver in exchange for Japanese silver, and importers sought to trade Japanese silver for Mexican silver. While merchants from Edo (now Tokyo) acted as their intermediaries, conducting such transactions in Edo became progressively difficult due to the geographical separation of about 20 miles between Yokohama and Edo. The Kanagawa bugyo (regional inspector) introduced a licensing system and chose selected new merchants in Yokohama to handle *yogin* trading.

These newly established brokers came to be known as *ryogae-sho*, meaning money exchangers, or *doruya*, referring to merchants dealing with dollars (Hora 1977). Even after the collapse of the Tokugawa regime and the establishment of the Meiji government, *doruya* continued to play a crucial role in facilitating yogin trading. These *doruya* members established the *yogin* trading platform as an organization of collective order, and occasionally adapted rules or altered platform names. For instance, Yogin Soba Kaisho was founded in 1868, followed by Yokohama Tsusho Kaisha in 1869, Kinkoku Soba Kaisho in 1872.

Heihachi Tanaka took the initiative in the *yogin trading* platform. *Ryogaesho-shukaisho,* a meeting place for *ryogae-sho* or *doruya*, was established on the premises of Tanaka's private residence after the inauguration of Yogin Soba Kaisho in 1868 (Tokyo Koto Shogyo Gakko Chosabu 1914).

When Kinkoku Soba Kaisho opened in 1872, Tanaka became the president of this platform. While originally hailing from Shinano (now Nagano prefecture), Tanaka started his business in Yokohama, dealing in the sale and purchase of raw silk and rice. Senda (2018) reports that Tanaka utilized his connections with notable politicians for his own business. Tanaka provided financial support to a woman named O'Kura (also known as Take Saito), a prominent geisha, enabling her to open a traditional Japanese restaurant named Yokohama Fukiro in 1871. At Yokohama Fukiro, Tanaka frequently hosted leading figures in the political and business communities including Toshimichi Okubo, Hirobumi Ito, Kaoru Inoue, Shigenobu Okuma, Munemitsu Mutsu, and Yataro Iwasaki.

While Tanaka expanded his business, some merchants began to criticize his business policy that prioritized his private benefit. A certain business person was upset that Tanaka had gone on a buying spree of *yogin* during trading at Kinkoku Soba Kaisho, which was opened in 1872. This business person complained to the Kanagawa Prefectural Government (Shimamoto 1942). Due to the declining reputation among merchants in Yokohama caused by this incident, Tanaka faced a period of stagnation. In 1874, Kinkoku Soba Kaisho closed its *yogin* trading division. While Kaemon Takashima, a prominent merchant in Yokohama, succeeded to this division, he was unable to revive *yogin* trading. In contrast, Tanaka obtained permission from the Kanagawa Prefectural Government to continue *yogin* trading in his own store (Yokohama City 1963, p.335).

In 1878, the Tokyo Stock Exchange was established, with Tanaka becoming a significant shareholder in the Exchange (Japan Stock Exchange Group 2017). Senda (2018) highlights that Shibusawa relied on Tanaka's expertise in securities trading regulations and practices. This close association between Shibusawa and Tanaka was further evident in their involvement with the establishment of the Yokohama Yogin Exchange.

In February 1879, the government imposed a ban on *yogin* trading in Yokohama and established a minimum capital requirement of 100,000 yen for the founding of new exchanges. In March 1879, the Yokohama Yogin Exchange was founded as a joint-stock company with a capital of 200,000 yen. The group of 11 founding members consisted of Tokyo-based entrepreneurs like Eiichi Shibusawa, Kisaku Shibusawa, Takashi Masuda, and Kihachiro Okura, alongside Yokohama-based businesses such as Zenzaburo Hara and Heihachi Tanaka. The 'Founding Certificate of the Yokohama Yogin Exchange' outlines that a capital of 200,000 yen was set at 100 yen per share, leading to the issuance of 2,000 shares. These founding members, including Tanaka, were also acknowledged as major shareholders.

2.2 Government Intervention in 1879

The Meiji government struggled and devised various policies to solve the soaring *yogin* quotes, i.e., the sharp decline of the yen against the Mexican dollar after the Seinan Senso, the Civil War of 1877. Tokyo Koto Shogyo Gakko Chosabu (1914) reported that the Meiji government perceived soaring *yogin* quotes as a contributing factor to the depreciation of government notes. According to the explanation provided by Hora (1977), the government considered that the reason behind the soaring *yogin* quotes was a shortage of silver. Based on this judgment, the government supplied Mexican and Japanese silver through the Mitsui Bank and the Second National Bank of Japan (part of the predecessor of today's Yokohama Bank) on several occasions between May 1879 and September of the following year. In this supply, the government secured silver through *yogin* trading (Yokohama City 1963, p.377).

In September 1879, the government issued a proclamation advocating the silver 1-yen trading. This currency had the following historical background. The Meiji government issued silver 1-yen coins in 1871. These coins were minted as the foreign trade currency in addition to standard gold coins. The Meiji government intended to phase out the Mexican silver dollar from Japan through the distribution of this new trade currency (Hora 1977). The proclamation regarding the silver 1-yen trading aimed not only to enhance the acceptance of these coins for foreign trade settlements but also to curb the surge in *yogin* quotes.

As a secondary action to this proclamation of silver 1-yen trading, the Tokyo Stock Exchange, the Osaka Stock Exchange and the Yokohama Yogin Exchange were authorized to trade this trade currency. In March 1879, prior to the permission of silver 1-yen trading, the Tokyo Stock Exchange submitted an application to the government. According to this application, the Tokyo Stock Exchange requested that gold coins should be quoted in the same manner as *yogin* in order to overcome the current situation in which the value of domestic currency was determined by *yogin*. Tokyo Stock Exchange (1928, pp.28-29) recorded that the exchange became booming with speculative fever following the start of silver 1-yen trading.

In conjunction with this permission of silver 1-yen trading, the Yokohama Yogin Exchange was renamed the Yokohama Exchange. Yokohama City (1963, p. 385) has implied that, although the silver 1-yen trading volume was not high on the Yokohama Exchange, the trading could have fueled speculation rather than discouraging such speculation. In 1880, the silver 1-yen trading was temporarily suspended. This suspension is discussed in detail in Section 3.

In November 1879, the government established the Yokohama Specie Bank as a specialized institution dedicated to foreign exchange operations. The establishment of this bank was also regarded as a strategy to stabilize the foreign exchange market and mitigate the surge in the *yogin* market. Additionally, the government utilized the Yokohama Specie Bank to manage the supply of silver (Hora 1977).

3 Trading systems at the Yokohama Exchange

This section outlines (1) the trading methods used in *yogin* trading at the Yokohama Exchange, and (2) the regulations on these methods imposed by the Meiji government..

3.1 Trading Methods

The Yokohama Yogin Exchange allowed two methods of trading: one was spot trading, called *jiki*, and the other was futures trading with three-month contract months, called *teiki*. In *jiki*, a special method called *azukeai* was used. *Azukeai* was refined trading practices under Tanaka's initiative and so attractive to traders.

Azukeai meant that exporters and importers would deposit their respective currencies with their *ryogae-sho* or *doruya* before exchanging them for Mexican dollars and yen, respectively. Both exporters and importers deposited their respective currencies to *ryogae-sho* or *doruya*. Exporters would have needed to exchange Mexican silver for Japanese silver to pay their suppliers. If the *yogin* quote was rising, i.e., if the yen were depreciating, Japanese exporters would have an incentive to postpone the exchange until the due date for payment to the suppliers. On the other hand, Japanese importers, who needed Mexican silver to pay for the goods they received from abroad, would have an incentive to sell their Japanese silver quickly to obtain more Mexican silver. If the *yogin* quotes were dropping, the situation on whether to rush to exchange money would have been reversed. To coordinate the interests of Japanese exporters and importers, *ryogae-sho* or *doruya* began to hold deposits of Mexican silver or Japanese silver from both exporters and importers, allowing them to exchange them at their preferred timing (Yokohama City 1963, p. 388). This service came to be known as *azukeai* in the end of the 1860s.

There were two types of *azukeai*: one was *katai-azukeai*, which was the normal type, and the other was *banami-azukeai*, which was the derivative type. *Azukeai* would be terminated when one of the two parties fulfilled the exchange. In the case of using *katai-azukeai*, actual delivery of Japanese silver and Mexican silver was required upon exchange (Yokohama City 1963; Hora 1977).

In the case of using *banami-azukeai*, the physical transfer of either Japanese silver or Mexican silver was not required. In this derivative type, participants were able to engage in the money game of differential settlement. The government was particularly wary of *banami-azukeai* as it had fueled speculative fever. Once *azukeai* was executed, *ryogae-sho*, who had been entrusted with both the purchase and sale, would transfer *atamakin* (the difference between the previous day's quote and the current day's quote) each time the day changed. In the case of *banami azukeai*, it was necessary to add interest to *atamakin* as part of the transfer. If *azukeai* would not be terminated, *ryogae-sho* could extend the settlement of delivery from day to day (Yokohama 1963, pp. 389-390).

Both *banami-azukeai* in *jiki* transactions and differential settlement in *teiki* transactions would have induced speculation. The Meiji government attempted to regulate these two methods.

3.2 Regulations and Its Limitation

The Meiji government prohibited *azukeai* at the Yokohama Yogin Exchange on the grounds that *azukeai* had fueled a speculative fever. The *yogin* trading brokers applied the Meiji government to partially lift the ban on *azukeai* and to impose autonomous rules voluntarily. This application was approved on *katai-azukeai*, which did not allowed settlement for difference. However, some individuals who were still enticed by the allure of *banami-azukeai* speculation decided to engage in the practice. In December 1879, the Meiji government again prohibited azukeai entirely.

Even after the government tightened regulations, the trend of soaring *yogin* quotes did not diminish. Yogin Trading came under fire in the inflationary environment. The Meiji government had no choice but to listen to these voices and temporarily suspended silver 1-yen trading in April 1880. This suspension led to the emergence of a black market for silver 1-yen trading. In order to prevent this situation from worsening, the Meiji government reinstated silver 1-yen trading instead of banning teiki transactions in *yogin* trade in May of the same year. Since futures quotations were no longer formed, this meant that expected future prices were not announced to exporters and importers anymore. The logistics surrounding the trade were disrupted after teiki transactions ceased (Tokyo Koto Shogyo Gakko Chosabu 1914). In addition, y*ogin* trading itself flowed to the black market. Brokers in this the black market dealt with differential settlement in *banami-azukeai* (Yokohama City 1963, p.397).

The exchange and the brokers petitioned the government to begin trading in government bonds and stocks, to reduce the tax burden by half, and to lower the brokerage deposit by two-thirds.

In September 1880, the Ministry of Finance authorized the renaming of the Yokohama Exchange to the Yokohama Stock Exchange and allowed the exchange to trade government bonds and stocks alongside silver. *Yogin* trading became booming, and the *yogin* quote reached its highest value in April 1881. The Meiji government raised taxes on brokers at the exchange beginning in April 1883. In August of the same year, *teiki* transactions were restored on the Yokohama Stock Exchange's *yogin* market. The achievement of the policy intervention in *yogin* trading was to indirectly endorse speculation as a means to generate higher tax revenues from the exchanges.

The Meiji government's various attempts to suppress *yogin* quotes turned out to be ineffective. In fact, some of these measures inadvertently contributed to the growth of the black market. The prioritization of financial resource security led to a policy intervention that was inconsistent in nature, permitting the reintroduction of *teiki* transactions that had been banned before.

4 Conclusion

Despite the Meiji government's various endeavors to restrain *yogin* quotes, the desired outcomes were not achieved. A few of these measures unintentionally fostered the expansion of the black markets. The emphasis on securing financial resources resulted in a policy intervention that lacked coherence, allowing for the revival of previously prohibited *teiki* transactions.

Currency substitution is both an old and a new topic (Calvo and Végh, 1992; Rodríguez, 1993; Agénor and Khan, 1995; Sawada and Yotopoulos, 2002; Selçuk, 2003; Schilling and Uhlig, 2019; Edwards, 2021; Benigno, Schilling and Uhlig, 2022). Japan might have experienced partial currency substitution in the 19th century. The interaction between changes in the yogin quotes and other variables, such as the domestic money supply, price levels, interest rates, and the real economy—especially net exports—could be a topic for further research, particularly in terms of deriving statistical relationships.

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