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CHINA'S FOREIGN EXCHANGE BLACK MARKET AND EXCHANGE FLIGHT: ANALYSIS OF EXCHANGE RATE POLICY

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INTRODUCTION

THE foreign currency black market is a neglected area in research on the People's Republic of China not only because of the lack of data availability and credibility but also because of its connection with the underground economy. The data used in this paper is based on sampling investigations of peddlers and vendors in Shanghai, and also on the *World Currency Yearbook*.[1] This data was modified and adjusted by the Shanghai Institute of Asian Research (1993), Wang (1991), and other sources. Since the semiofficial exchange rate[2] varied from place to place, the black market exchange rate also varied greatly among the coastal cities in China. Nevertheless, this does not have a great effect as long as the slope and tendency bears the features of the market. Although official data on the volume of transactions in the black market is usually not available on a systematic basis, formal and informal evidence suggests that the major sources within China of foreign exchange supply are smuggling, overinvoicing of imports and underinvoicing of exports, and from overseas Chinese remittances from abroad and border trading. Similarly, no direct information on the composition of foreign exchange demand in the black market is generally available. The existence of rationing in the official exchange market in China suggests, however, that the illegal demand for foreign currency arises for both current and capital account transactions. Unsatisfied demand at the official rate spills into the black market.

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[1] The book's former title was *Pick's Currency Handbook* (New York: Pick Publishing Corp.). This was changed in the early 1980s to the *World Currency Yearbook* edited by Philip P. Cowitt. The data about China's black market ended during the Tian-anmen incident in 1989.

[2] "Foreign exchange adjustment rate" in the swap center; the rate is based on the rates virtually agreed on between buyers and sellers of entities authorized to retain foreign exchange earnings.

The black market exchange rate usually includes a premium that reflects pent-up excess demand pressures that foreign exchange restrictions are intended to contain. It is the foreign exchange restrictions that lead to the emergence of the black market, whereas other administrative measures, such as import tariffs, import licenses, quotas, and so on, only exert some influence on this exchange rate.

The premium has direct linkage to the scarcity of China's foreign exchange and becomes the motive for evading such exchange rate restrictions. In China's case, the black market exchange rate, being market-determined as in most other countries, has shown large fluctuations, and higher volatility than the official rate. Besides the fundamental factors, noneconomic factors such as the upsurge in the number of people going abroad, the Tian-anmen incident, and expectations of the resumption of GATT (General Agreement on Tariffs and Trade) membership also have some weight on the black market.

Relying on research done by Agénor[3] (1990) and Fukao (1983), this paper will also examine the determinants of China's black market exchange rate through econometric approaches. Based on the same observation data and independent variables, China's official rate and its exchange rate policy will be evaluated. The gap between the official and black market exchange rates may show a deviation of the official rate from the market mechanism. At the same time, the implications for China's exchange rate policy may also be revealed.

In addition to analyzing the black market exchange rate, the volume of foreign currencies in this market has been studied a great deal by Sheikh (1976), Pitt (1984), and others. In their papers, they modeled the black market for foreign exchange to purchase illegal imports and the supply of foreign exchange available from illegal export. The role of the black market exchange rate in balancing the demand for smuggled imports and exports was pointed out explicitly. It was found that in a model of smuggling, legal transactions cloak illegal transaction, thereby reducing the cost. It was also found that increases in the exogenous demand for black market foreign exchange, perhaps for purposes of capital flight, act to increase export smuggling and the black market premium, and reduce import smuggling. Smuggling and the black market cannot be eliminated by the increased provision of legal foreign exchange if smuggling exists to avoid payment of trade taxes. Surprisingly their findings coincided in China's case after the second unification.

The remainder of this paper is arranged as follows. Section I describes the structure of China's black market currency exchange from both the supply and demand side. Section II seeks out the determinants of the black market exchange rates.

[3] Pierre-Richard Agénor, an economist in the Research Department of the International Monetary Fund (IMF), developed a macroeconomic model for parallel currency market analysis in his paper (Agénor 1990).

Policy shocks and the implication of exchange rate policy are examined in particular detail. As will be shown, devaluations of the official rate only reduced the black market premium in the short term and had no effects over the long run. Section III examines the linkage between exchange flight and the black market premium. Finally, Section IV analyzes the behavior of the black market exchange rate during the two unifications.[4] Current account convertibility does restrain the activities of the black market currency exchange, but does not uproot it. The ground still exists for this market as long as the market mechanism does not become fully established in China. This paper concludes with a discussion of the many related areas for further study.

I. STRUCTURE AND CYCLE OF CHINA'S FOREIGN EXCHANGE BLACK MARKET

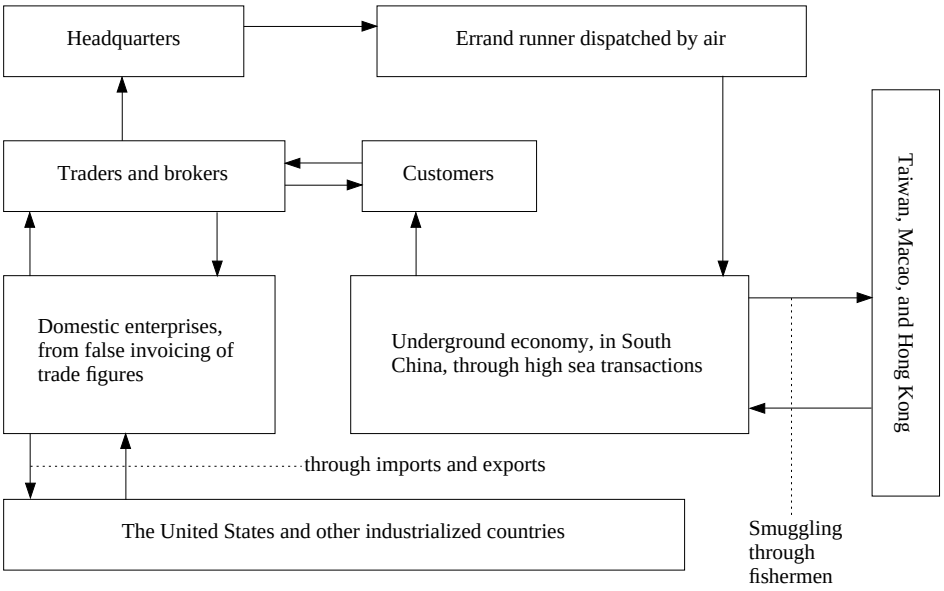
Black market exchanges are scattered all over the country, with large transactions taking place in the coastal cities. In the cities, the main locations for these exchanges are at the front gates of the Bank of China. Black market exchanges can also be found outside other banks engaging in foreign exchange operations. Places like ambassadors' residences, hotels, tourist resorts, "friendship shops," and duty-free shops are frequented by black market vendors and peddlers. The flow of black market currency is shown in Figure 1.

The operation of China's black market currency exchange is organized into two parts: one is collecting various foreign currencies from the customers; the other is carrying the foreign currencies to the south (usually Guangdong) to sell at a higher price, a trip known as "errand running." Such trips are run by air and may take a few days or up to one week. The foreign currencies are then smuggled to Hong Kong, Macao, and Taiwan, and in return higher-standard durable consumer goods are transported back to mainland China. Smuggling activities in coastal regions are rampant. Transactions on the high seas between fishermen from Taiwan, Hong Kong, Macao, and the mainland cannot be underestimated (see Figure 2). There is a large discrepancy in trade statistics[5] between the Hong Kong administration and the Chinese government. The Hong Kong figures indicate a lot more exports going

[4] The first unification happened in January 1985, between the "foreign trade internal settlement rate" and the official rate, and the second unification took place in January 1994 between the "swap center exchange rate" and official rate.

[5] These were calculated based on the *Direction of Trade Statistics* (IMF, various issues). For example, "exchange flight to Hong Kong" implies China's exports to Hong Kong (based on Chinese figures) minus Hong Kong's imports from China (based on Hong Kong figures), after making an allowance of 10 per cent for insurance and freight costs, shipping lags, and commodity misclassifications. The residual discrepancy reflects illegal trade to a significant extent. This method has been adopted by McDonald (1985).

Fig. 1.



to the mainland for which the Chinese administration has no figures for imports recorded.

The currency collection part of this process is usually handled by a group of six people,[6] each having a different role to play during the transaction. Altogether these venders and peddlers accumulate a variety of foreign currency and carry them to Guangdong or Fujian to sell in the underground economy (including to state-owned enterprises) at high prices. The route is from north to south, and from inland areas to the coastal regions (in particular, Guangzhou, Shenzhen, Dailien, and Fujian). Sources of foreign currency for the black market can be classified into the following categories.

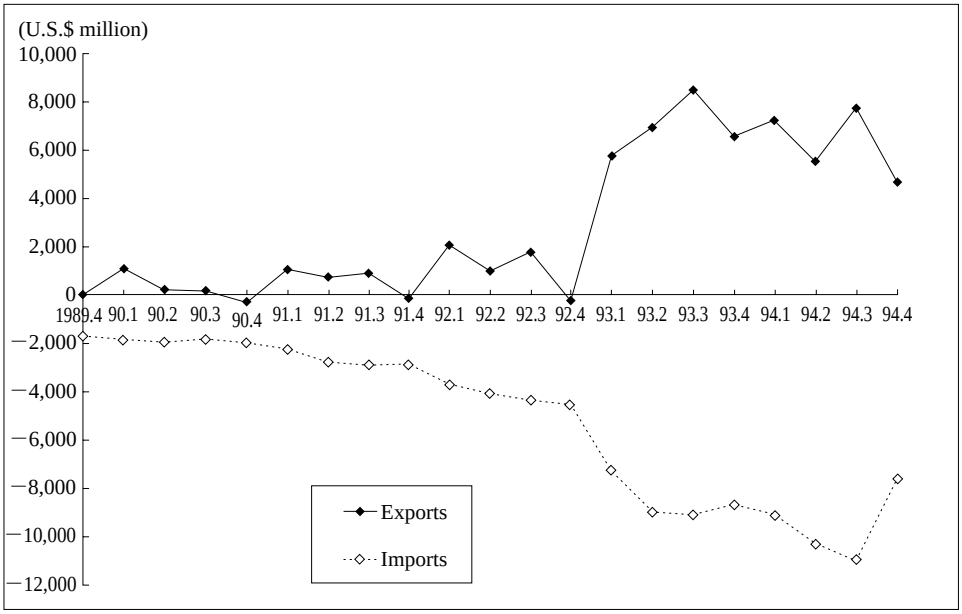
(1) Supply side

Domestic residents. This category includes interpreters, tourist guides, taxi drivers, and workers in hotels, tourist souvenir shops, and joint ventures. On the whole, this category does not have much of a share of the market.

Overseas Chinese home visits. Chinese from Hong Kong , Macao, and Taiwan make frequent trips to the mainland, are versed in the domestic situation, and will not convert their foreign exchange at the official rate.

[6] In Beijing vendors usually form a group of six people: the main trader, deputy trader, main broker, deputy broker, cashier, and guard. For details see Fun (1994).

Fig. 2. Exchange Flight to and Imports Smuggling from Hong Kong

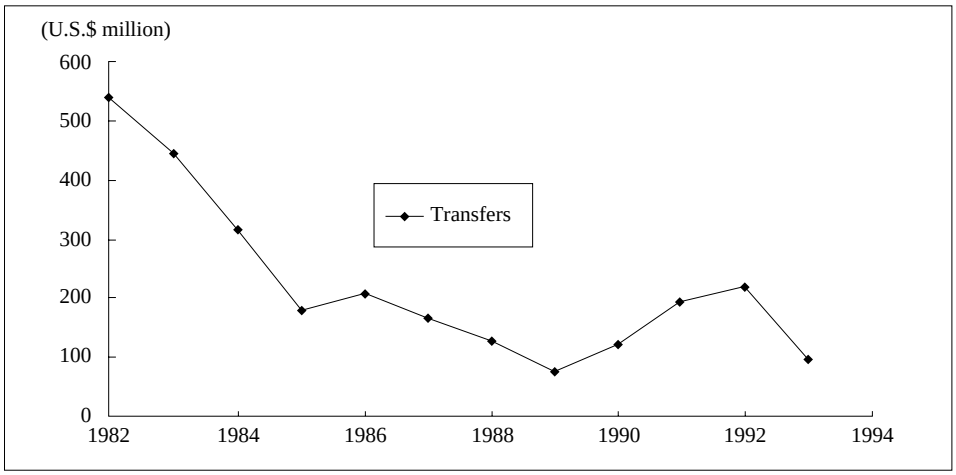


Sources: The data originate from IMF (various issues). The calculation is based on the method suggested by McDonald (1985).
Note: Exchange flight figures were derived by: (Hong Kong's imports, CIF)−[(China's exports, FOB)×(1+0.1)], with "0.1" being allowances for freight and insurance.

Remittance from overseas. This category provides a large share of the foreign exchange for the black market. Remittances usually do not go though official channels. They are in variety of forms to avoid official regulations since the official exchange rate is lower and only deal with six currencies. It is obvious that the official currency exchange market does not have the capacity to meet the needs of the economy. With the widening of the spread between the official and black rates, overseas remittances have been declining (see Figure 3).

Domestic enterprises. Both the private and the state-owned enterprises provide a larger share of the foreign currency for the black market. These enterprises possess huge amounts of various foreign currencies which need circulation to increase in value. Many vendors and peddlers act as agents for those enterprises. The former "foreign exchange retention quota" system also contributed greatly to the foreign exchange black market, since export enterprises were eager to use up their "remaining quota" by the end of the year because the quota would not continue to be valid. If the official and adjustment center rates were not favorable, they would have their agents sell the currencies on the black market. In order to have free

Fig. 3. Overseas Chinese Decreasing Currency Transfers to China



Sources: People's Republic of Chine, State Statistical Bureau, Department of Trade and Materials Supply, comp., *1979–1991 China Foreign Economic Statistics* (Beijing: China Statistical Information and Consultancy Service Center, 1992), p.10, Table 1-3B; People's Republic of China, State Statistical Bureau, Department of Trade and External Economic Relation Statistics, comp., *China Foreign Economic Statistical Yearbook, 1994* (Beijing: China Statistical Publishing House, 1995).

control over foreign currency, enterprises and institutions use overinvoicing and underinvoicing of real trade figures, leaving large amounts of foreign currency abroad. When the domestic rates are favorable, part of their foreign currency holdings will flow back to China. This situation was true before the second unification.

Foreigners. Vendors from Eastern European countries bring foreign currencies to China to sell on the black market and then purchase cheap Chinese goods to take back to their own countries. This seems to be a lucrative route. Moreover, embassy personnel have "permanent-contact" relations with black market vendors and peddlers through whom their monthly salaries can be raised by 50 per cent during the peak period (1988–89).

(2) Demand side

Domestic residents. People, especially young people in big cities such as Beijing, Shanghai, and Guangzhou, want to go abroad to study and work. If they intend to study in the United States, for example, they need to pass the TOEFL test which has an application fee of U.S.$10–20.[7] Those who want to go to Australia to study have to defray tuition payments in sums of thousands of U.S. dollars. Since

[7] This was the fee cost in the 1988–89 period.

the government does not provide the needed foreign currency, they must resort to the black market. Also expectation of inflation and negative real interest rates lure people to switch renminbi to foreign currencies to preserve their wealth.

Enterprises. Private and state enterprises resort to the foreign exchange black market when they urgently need foreign exchange to import raw materials and equipment, since application for foreign exchange through official channels takes time and adds on extra procedure costs.

Underground economy. Many underground economic activities cannot be sustained without a foreign exchange black market. With the development of the Chinese economy, regional economic unbalance has driven many people and enterprises to engage in underground transactions. The most noticeable underground activities are: (i) Black market gold transactions. Because of the price disparity between gold inside and outside of China, black market currency transactions match black market gold transactions in volume, rank, and importance. Guangdong Province, being adjacent to Hong Kong, is the main center for smuggling gold into and out of China. The total value of black market gold transactions was estimated at U.S.$500 million annually in the late 1980s (Cowitt 1989). (ii) Automobile smuggling. The Chinese tariff rate imposed on automobiles is between 180 and 220 per cent (1993). If one car worth U.S.$10,000 is successfully smuggled into China, it can be sold for 200,000 renminbi. The exchange rate would be 2,000 renminbi per U.S.$100. This is a lucrative advantage. Many cars stolen in Hong Kong are smuggled to the mainland. In 1993 the smuggled cars impounded by the General Administration of Customs amounted to 1.24 billion renminbi. In 1996 more than 30,000 Japanese automobiles were smuggled into China (Yu 1997). (iii) Cigarette smuggling. Cigarettes originating in Hong Kong, Japan, the Republic of Korea, and the Philippines are smuggled into China via fishing boats. For instance, a package of “Brand 555,” which cost U.S.$3, can be sold for 80–100 renminbi. Calculated at this price, the black market exchange rate would be 3,000 renminbi per U.S.$100. It is reported that cigarettes confiscated by the General Administration of Customs came to 1,150,741 cases between 1987 and 1996 (Yu 1997). (iv) Illegal emigration. The people from Chinese coastal provinces like Fujian, and border areas like Yunnan Province have been organized by “snakeheads” to emigrate to the West. The current charge for such emigration is about 220,000 renminbi or U.S.$ 26,000 per person, but the amount only covers overseas passage, thus pushing up the demand in the exchange black market. (v) Burma-China drug trade. China’s Yunnan Province, which borders on the Burmese and Laotlian areas of the Golden Triangle, the most famous opium-growing area in the world, reportedly has 250,000 drug addicts. The drug smuggling routes extend to Australia, Europe, and North America. Such international drug trafficking has an impact on the black market exchange rates along the Yunnan border.

The volume of transactions on the black market exchange cannot be measured

statistically, nevertheless, the potential amount can be estimated. According to the latest statistics of the General Administration of Customs, the volume of smuggling uncovered among enterprises and state-owned companies amounted to 1.22 billion renminbi during the first half of 1994. Assuming that the same amount of smuggling succeeded, it would channel a large amount of foreign currency to the black market. Furthermore, the startling figures from the *Direction of Trade Statistics* (IMF, various issues) show that one-third of China's exports receipts were left abroad unreported. Whenever the official rate is distorted arbitrarily by a large margin, transactions on the foreign currency black market booms. The potential capacity of China's foreign exchange black market is enormous. One example was the raid made by police in Beijing on February 1, 1993.[8] The total value of the confiscated amount was worth 1,600,000 renminbi and was composed of U.S.$110,000, 600,000 Japanese yen, 700,000 renminbi and also varying amounts of pound sterling, mark, Hong Kong dollars, and won. The foreign exchange deposits of Chinese citizens in all branches of the Bank of China (Ma 1995) were worth U.S.$11 billion at the end of March 1994, equal to the exchange reserves (U.S.$11.7 billion) held by the state in 1990. If the official exchange rate were to deviate substantially from the market rate, those deposits held by Chinese citizens (estimated to be U.S.$20 billion in 1997)(An 1997) would rush to the black market. Therefore, the Chinese authorities must take the black market exchange rate into consideration when they formulate the official exchange rate.

II. DETERMINING THE BLACK MARKET EXCHANGE RATE

The term, black market exchange rate, usually refers to the price level of those transactions which take place at a level higher than a legal maximum; the premium between it and the official rate indicates the strictness of government exchange controls. Risks of being caught, eagerness to go abroad, effects of political events, and speculation of would-be devaluation of the official rate contribute to a high fluctuation in the black market rate. A black market can only develop if the legal maximum is below the hypothetical free market price (Boulding 1947), so that at the legal price more is demanded than will be supplied. A black market will develop if some buyers and sellers can be found who are willing to buy or sell at prices higher than the legal maximum in spite of the penalties involved. In China the costs and risks are flexible since in some regions the penalties are severe and law enforcement is effective, while in the other regions the local authorities tolerate such illegal transactions. In this paper the risk and cost spreads are omitted for the simplicity of the model. *Eo* denotes the official rate, i.e., the rate at which commercial and service transactions are settled and which is set by the monetary authori-

[8] The example is adapted from Fun (1994).

ties, and is treated as a policy instrument. The remaining transactions are settled on the black market at the black market exchange rate *Eb*, which is determined by the interactions between supply and demand rather than by government fiat.

1. *The price determinant*

Previous studies by Koveos and Seifert (1985) found that the efficient market version of "purchasing power parity" (PPP) appears to be the appropriate framework for many black market currencies. For the two reference countries' currencies (U.S. and Canadian dollars) and for the black market currencies of Brazil, Ecuador, Mexico, and Peru, the results are generally supportive of the efficient market version. Culbertson (1975) demonstrated a positive relationship between purchasing power equilibrium exchange rates and black market rates for India, the Philippines, and Turkey between 1952 and 1971. As for China, this paper selects the price of the United States as the comparison counterpart not only because the United States is China's third largest trading partner[9] in dollar terms but also because domestic settlement is generally pegged to the dollar. The consumer price index reflects the trend of inflation in the United States, while in China the retail price index indicates inflationary movement.[10] We can write the PPP model: P_t^*/P_t, where P_t^* is the consumer price index of the United States at time t, P_t is the retail price index of China at time t; t is the base year 1985 (the first quarter = 100). After taking logarithms, we get log (P_t^*/P_t). Since it is generally acknowledged that the exchange rate is a mirror of inflation between the two countries, we assume its coefficient as 1 to combine with the dependent variables *Eb* and *Eo*, and the equation becomes:

$$\begin{aligned} Yo_t &= \log (Eo_t \times P_t^*/P_t), \\ Yb_t &= \log (Eb_t \times P_t^*/P_t). \end{aligned} \qquad (1)$$

We take it for granted that PPP is effective in China's exchange market, and let the exchange rates be adjusted by the price factors, from which the real exchange rate is generated.

2. *Monetary factor*

Hodrick, Porter, Dornbusch, Driskill and Sheffrin,[11] and Agénor (1990) all put the money supply and production output into their model to show that changes in the money stock affect the exchange rate. This paper uses the following approach: *M*1 / *Nominal GNP* represents China, while *M*1*/(*Nominal GNP*)* stands for the United States. Thus the equation ΔM_t is obtained after taking logarithms.

[9] In fact, many of the exports to the United States are transported via Hong Kong, although the volume of trade to Hong Kong ranks second.

[10] The Chinese government used to quote the retail price index as a symbol of inflation.

[11] These authors are mentioned in Fukao (1983, p. 8).

$$\Delta M_t = \log\left(\frac{M1/Nominal\ GNP}{M1^*/(Nominal\ GNP)^*}\right). \quad (2)$$

As long as ΔM_t is under control, the exchange rate will be stable, as will the economy as a whole. If the issuance of money gets out of control, people will shift their demand to foreign currencies to preserve their wealth, consequently pushing up the black market exchange rate.

3. *Interest rate parity*

The theory of "interest rate parity" has long been used to explain the fluctuations in exchange rates. The effective difference between rates and expected returns drives people to adjust their financial assets. Economic cycles and government financial policy affect both spot and forward rates, capital movement, and investment. However, only after price adjustments have taken place can interest rate be applicable. For simplicity, we exclude the effects of government fiscal policy and other relative measures. Here the model is adapted from Fukao (1984) and presented as follows:

R_t = Logarithm of "1 + interest rate (quarterly)" of China at time *t*. For example, China's interest rate is 10.98 per cent, $R_t = \log(1 + 0.1098)$.
R_t^* = Logarithm of "1 + interest rate (quarterly)" of the United States at time *t*.
π_t = China's quarterly inflation rate at time *t*.
π_t^* = The United States' quarterly inflation rate at time *t*.

$$\Delta R_t = \log\left(\frac{R_t^* - \pi_t^*}{R_t - \pi_t}\right). \quad (3)$$

ΔR_t stands for the interest difference between China and the United States. (China's nominal interest rate remains almost fixed, with little change annually.)

4. *Net foreign assets*

Both Agénor (1990) and Fukao (1983) rate "net foreign assets" as the most important factor determining exchange rates. The changes in the current account, through the shift of assets overseas, affect the stock of assets. The adjustment of assets by investors will have a great impact on exchange rates. In the equation below, *GNP* is for the comparative scale of the whole economy. N_t denotes the net foreign assets of China at time *t*. *AC** stands for the current account at the first quarter, 1985. $\sum AC$ indicates China's accumulated current account. B_t implies the adjustment of assets by investors.

$$B_t = \frac{N_t + AC^* + \sum_{j=1}^{t} AC_j}{GNP_t}. \quad (4)$$

This equation suggests that portfolio management in the financial market in the

long run will affect the exchange rate. Combining the previous equations (1)–(4), we obtain the following equation.

$$Y_t = \alpha + \beta\Delta M_t + \gamma\Delta R_t + \delta B_t + \varepsilon_t. \quad (5)$$

5. *Empirical results*

The basic model was tested using "first-order serial correlation of the error, maximum likelihood iterative technique, convergence achieved after two iterations" on time-series data from the first quarter of 1985 to the first quarter of 1994.[12] Table I indicates that the official exchange rate correlates poorly with the variables.

Regardless of the methodology,[13] the Chinese official rate is like a mysterious box that cannot be seen into, and the black market exchange rate was a much better barometer at depicting the macroeconomic phenomena during the 1985–94 sample period. This period witnessed great changes in China's market-oriented reform process. Before 1985, the black market rate showed no remarkable changes and deserved no attention (see Figure 4). A number of factors caused the two peaks in the black market premium. These factors included: the start of reforms in the urban

TABLE I

COMPARISON OF BLACK MARKET AND OFFICIAL EXCHANGE RATES

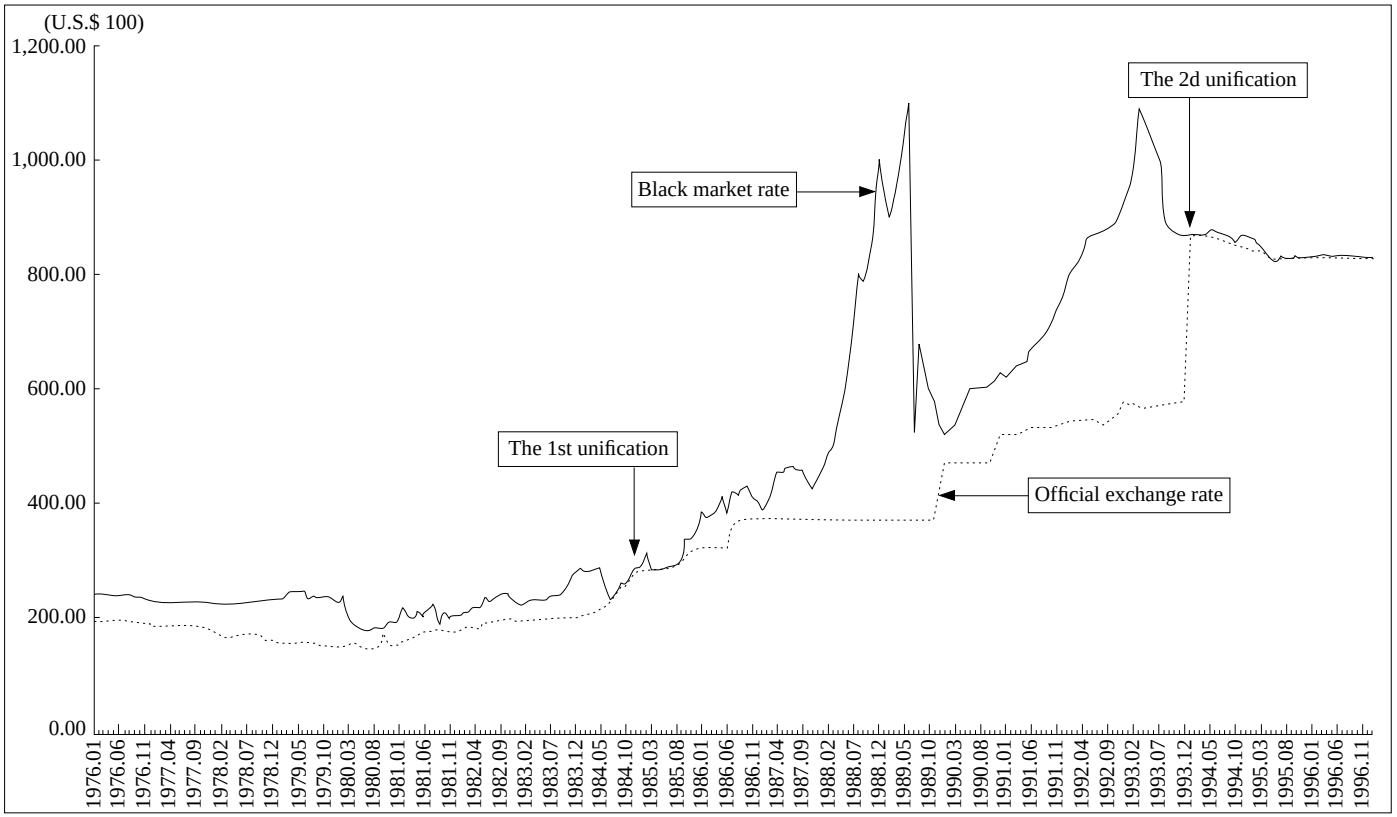
Independent Variables	Black Market Exchange Rate (*Yb*)	Official Exchange Rate (*Yo*)
Constant term (α)	6.05329	0.563676
	(29.9738)***	(33.7927)***
*M*1/*Nominal GNP* (β)	0.344834	0.129503
	(1.51110)*	(0.746487)
Real interest rate (γ)	0.371971	0.396598
	(1.76098)**	(1.69787)**
Assets adjustment (δ)	–1.95134	0.122652
	(–1.96997)**	(0.127006)
Adjusted R^2	0.970197	0.973547
Durbin-Watson statistic	1.59259	1.41092
Autocorrelation coefficient (ρ)	0.795745	0.914593
Sum of squared residuals	0.151589	0.081343

Notes: 1. Number of observations: 36.
2. Figures in parentheses show *t*-statistics.
*** Significant at 0.01 level, two-tailed test.
** Significant at 0.05 level, two-tailed test.
* Significant at 0.10 level, two-tailed test.

[12] This was the period between the two unifications of official exchange rates and also was the period when the black market exchange rate fluctuated greatly.

[13] The author has tested other variables, such as the balance of trade and official foreign exchange reserves, and found that, except for price, those variables explain nothing.

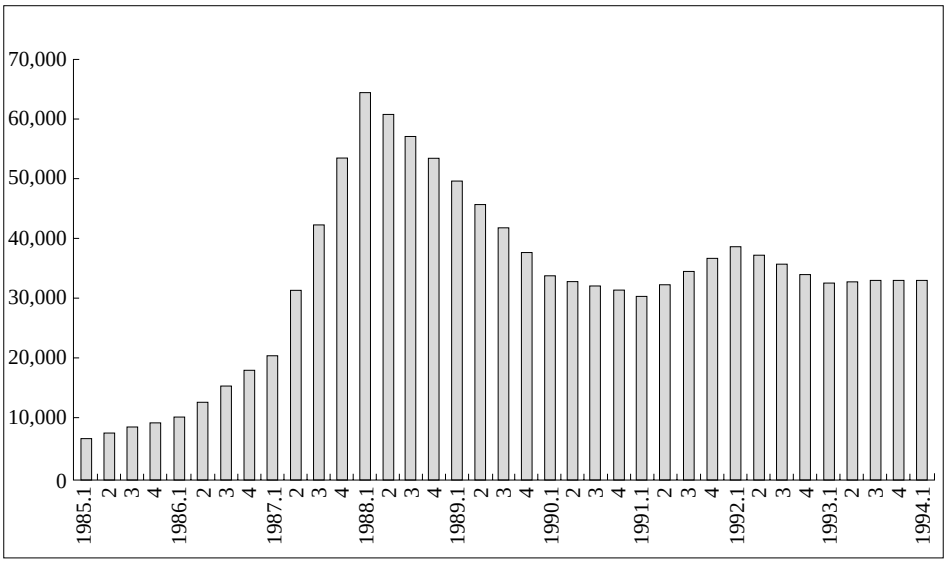
Fig. 4. General Picture of China's Foreign Exchange Black Market



Sources: Cowitt (various years); From samplings of peddlers and vendors in Shanghai, 1988–96 (It is the weighted average of discrete records from sites in the urban areas); The official rate is based on IMF (various issues).

areas after 1985, the upsurge of young people going abroad (see Figure 5), the Tian-anmen incident, and the resumption of the GATT membership. These spurred inflation, and the changes in the black market exchange rate compelled the alteration of the official exchange rate. Political factors had a definite effect on the black market premium. Right before the Tian-anmen incident, China experienced rampant inflation, purchasing mania, and runs on the banks which led to dissatisfaction with the government. In April 1989 China was swept by students demonstrations for "democracy" in eighty cities after the death of Hu Yaobang.[14] In May 1989 the students began a "hunger strike" in Tian-anmen Square. Fearing that the government might "close the door" on going abroad, students rushed to the black market exchange to purchase foreign currencies and headed for Western countries as early as possible. The black market premium rose dramatically until the announcement of the Ministry of Education in July 1989 which reiterated that China would not change its policy to send students abroad. Almost at the same time, some foreign consulates in China's big cities stopped accepting visa applications. Also the United States Senate did not pass the act concerning the visa status of overseas Chinese students. All this caused a sudden fall in the black market premium.

Fig. 5. Number of People in Shanghai Going Abroad at Their Own Expense



Source: Human Resource Department of the Shanghai Public Security Bureau in 1995.

[14] Head of the Communist Party of China in 1986.

Speculation about the devaluation of the official exchange rate during negotiations between China and GATT caused the second peak. In January 1986 China's premier expressed his country's intention to resume its membership in GATT. In February 1987 China presented its memorandum on trade policy as the first step for rejoining GATT. A month later the GATT set up a special "workshop" to review and evaluate China as a contracting party. Nineteen rounds of workshops have been held since then. Entering GATT had two effects on the black market premium. One was the premium's rise caused by speculation. The GATT system is suited for the market economies in the West. China's "would-be" resumption implied altering its currency exchange and foreign trade systems to bring them in line with those of the West. The long hard talks had psychological effects on China's society; people speculated that the official rate would jump (devaluate the renminbi) sooner or later. Purchasing foreign currencies would bring later profits, and this pushed the black exchange premium even higher. The other effect was downward pressure on the black market premium with gradual relaxation of foreign exchange controls and lowering of tariffs. The Chinese government adopted the measures in Table II.

Nevertheless, upward pressure on the exchange rate outweighed downward pressure. Compared with the high fluctuations of the black market, the official rate was inert and lacked any response. What has been the direction of the China's exchange management? "Export promotion" or "stability" have been the choices for the Chinese government. At the time of the first unification, the official rate kept pace with the black rate, suggesting export promotion as the priority of exchange rate policy. However, after the Tian-anmen incident, the priority shifted to stability, and the margin between the black market and official rates have grown larger and larger.

III. BLACK MARKET PREMIUM AND EXCHANGE FLIGHT

The black market premium is by definition the black market rate divided by the official rate.[15] The premium is one of the incentives for exchange flight. Many researchers have resorted to indirect techniques to measure the importance of black market transactions by investigating the scale of export underinvoicing and import overinvoicing. For example, one would need to look at the ratio of exports to major partner countries, as shown by domestic data, to the corresponding imports as recorded in partner country data. When this ratio is less than unity, the evidence points to capital flight (or exchange flight). This approach was adopted in some studies reprinted in the Bhagwati volumes (Bhagwati and Hansen 1973; Bhagwati

[15] According to the definition of Agénor (1990), the premium is defined as the log (black market rate / official rate).

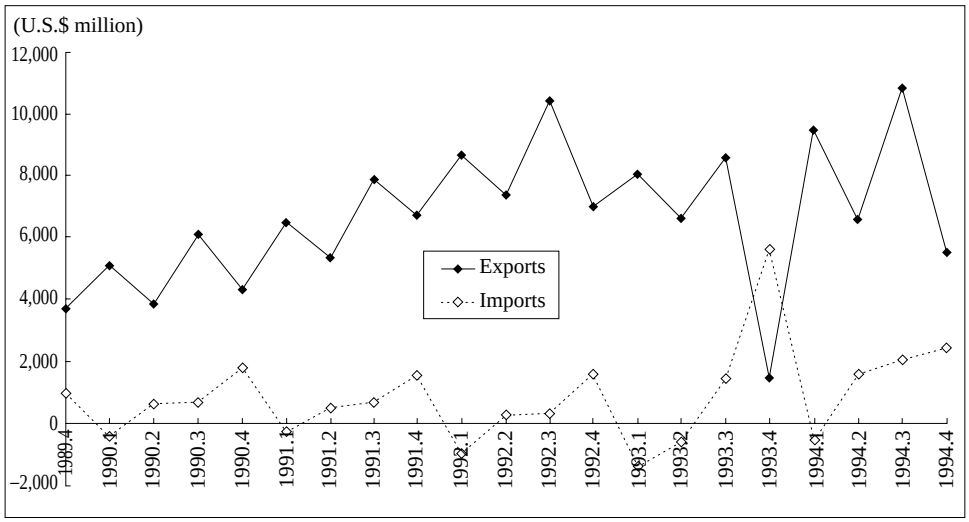
TABLE II

THE MEASURES ADOPTED BY THE CHINESE GOVERNMENT, 1990–93

Aug. 1990	The rate was allowed to fluctuate on the Shanghai Foreign Exchange Swap Market.
Nov. 1990	Renminbi was officially depreciated by 9.57 per cent.
Jan. 1991	The domestic foreign-trade companies were required to complete in the world markets without any government subsidies.
Dec. 1991	Foreign exchange markets open to the public were set up all over the country. Foreign exchange held by private individuals could be deposited in and sold to banks without limit or reporting sources. They could purchase exchange as long as they had proper reasons.
Dec. 1991	The Shanghai Security Exchange began operating, marking the first step in China's domestic financial market reform.
Jan. 1992	Tariffs on 225 imports items were reduced.
Mar. 1992	The import adjustment tax was abolished.
June 1992	The State Council announced the opening of fourteen cities on the borders with neighboring countries to foreign trade and investment.
June 1992	The Foreign Exchange Transaction Market was set up in Shanghai.
July 1992	The State Council approved the simplification of procedures for enter and leaving the country.
Aug. 1992	The National Foreign Exchange Adjustment Center (swap center) was opened in Beijing. The center was fully computerized and consisted of dealers from forty-two local swap centers across the country.
Oct. 1992	A memorandum of understanding was signed with the United States that committed China to significant liberalization of its trade regime over the next few years. The United States expressed its support for China's resumption of GATT membership.
Oct. 1992	The import substitution list was eliminated.
Dec. 1992	Import duties on 3,771 items were lowered which adjusted the general level of tariffs downwards by 7.3 per cent.
Mar. 1993	Chinese residents were allowed to take 6,000 renminbi abroad. Some banks in Hong Kong started handling the conversion of renminbi.
June 1993	The former administrative measures to control the market were replaced by the "Foreign Exchange Stabilization Fund" to regulate the foreign exchange market for the first time in the history.

and Srinivasan 1973) and in Nayak (1977), de Wulf (1981), Gupta (1981), and McDonald (1985). It involves the comparison of a country's reports of its trade activities with the corresponding reports of its trade partners. Clearly, such trade data discrepancies can have many sources: insurance and freight costs, shipping lags, and misclassification of trade with respect to commodity classification. The

Fig. 6. China's Export Underinvoicing and Import Overinvoicing



Source: From IMF (various issues).

Note: 1. The calculation is based on the method suggested by McDonald (1985). Recorded countries are the United States, Japan, Germany, Canada, Australia, Italy, France, the Netherlands, the United Kingdom, and Singapore.

2. Export underinvoicing is derived by: (Trade partners' imports, CIF) – [(China's exports, FOB) × (1 + 0.1)], with "0.1" being allowances for freight and insurance.

3. The figures in Figure 6 have not been adjusted to include China's reexports via Hong Kong.

general tendency, however, has been to assume that, once allowance has been made for insurance and freight, the residual discrepancy reflects illegal trade to a significant extent.[16]

This paper only records China's major trade partners' statistics, leaving other countries aside. The major countries are the United States, Japan, Germany, Canada, Australia, Italy, France, the Netherlands, the United Kingdom, and Singapore. However, the shares of these countries in China's total exports and imports are enough to explain the movement of trade misinvoicing (see Figure 6). For China export underinvoicing is obvious while import overinvoicing is not significant after seasonal adjustments. It is because Chinese import duties remain four times higher than those of Japan. Import overinvoicing is not profitable after imposition of tariffs. Comparing the black market premium with the tariff rates, Chinese importers would rather underinvoice imports, thus saving more in import duties

[16] See McDonald (1985).

than making up the difference from the black market premium. Unlike other countries, the allowance made for trade data discrepancy is relatively large in China since there exists the following problems.

(1) *Transit trade*. Although both China and the United States have adopted international practices concerning country of origin and destination, verification of the country of origin can be difficult. It has long been argued that "transit trade" among other things accounts for the statistical gap between China and the United States. Approximately 60 per cent of China's exports to the United States and 80 per cent of its imports from the United States are via Hong Kong, where the exports have undergone value-added processing and repackaging[17] before final sale in the United States. Similarly U.S. exports to China via Hong Kong have the same problems. U.S.$1.8 billion and U.S.$2.3 billion of the U.S. exports to China via Hong Kong dropped out of its statistics on total exports to China during 1992 and 1993 respectively. In this way, the U.S. trade deficit with China was overestimated by 70 per cent, with amounts of U.S.$8 billion in 1992, U.S.$9.6 billion in 1993, and U.S.$16 billion in 1996 respectively (Li 1997). As a result, the United States recorded its first trade deficit with China in 1983, whereas Chinese statistics indicate the first trade surplus with the United States in 1993.

(2) *Classification confusion.* Chinese customs statistics (PRC 1995) have not had a consistent classification for "transit trade." During the period between 1985 and 1992, "transit trade" was classified under "general trade." Beginning from 1993, "transit trade" was classified independent from "general trade" with its own code (No. 28). But code No.28 was nullified in 1994, and "transit trade" was put under the category of "imports and exports of bonded warehouse" (code No. 52) and was excluded from the customs imports statistics. However, code No. 52 was also abandoned, and in 1995 "transit trade" was once again included in customs imports and exports statistics under a new code No. 33 (PRC 1995).

In addition to trade data discrepancies and allowances for classification, China's balance of payments also indicate the phenomenon of capital flight under its "errors and omissions" (Table III). The causes of "errors and omissions" can be summarized as follows. (1) During the period between 1991 and 1994, the total overdue and uncollected foreign exchange for various Chinese enterprises amounted to U.S.$ 8.9 billion. (2) Some Chinese enterprises overseas withheld their exchange receipts from profits and interest abroad. There are thousands of such enterprises in Hong Kong with leakage of billions of U.S. dollars. (3) Some multinational companies investing in China manipulated their import and export prices to avoid being taxed. Exchange flight is a phenomenon of the Chinese economy, and its movements affect the black market premium since the premium reflects the strictness of

[17] How much allowance should be taken for the processing industry in Hong Kong remains unsolved, the residual exchange flight cannot be estimated.

TABLE III

CHINA'S ERRORS AND OMISSIONS

Year	Error and Omission (U.S.$ Billion)	Its Share in Total Exports (%)
1988	1.940	2.67
1990	3.162	6.14
1992	8.274	11.88
1993	9.800	11.36
1994	9.794	9.50
1995	17.810	13.90

Source: Tao Shigui, "Shilun renminbi zibenxianmuxia yutiaojian keduihuan de celue" [Strategy for convertibility of the renminbi under the capital account], *Guoji jingjimaoyi tansuo*, No. 6 (1996), p. 50.

exchange controls and the instability of the domestic economy. Both "export underinvoicing" and "errors and omissions" declined around the second unification of the exchange rate, but since then have reappeared as large as ever. This is no mere coincident. It shows that exchange flight is a fact of life in China which will not vanish as long as the black market premium exists.

IV. ROLE OF THE BLACK MARKET EXCHANGE RATE

Grosse (1994), Agénor and Flood (1992), and Goldberg (1993) examined the behavior of the black market exchange rate before and after the official exchange rate unification. They concluded that anticipatory behavior in the black market reflected the post-reform policy stance. Liberalization of the foreign exchange market and elimination of capital controls undermined the black market and induced the transfer of a large part of the underground financial activities into the legal economy. In Russia the 1992 unification increased the overall attractiveness of the official market and eliminated the gap between the effective exchange rate in the legal market and black market. What roles did the foreign exchange black market play during the two unifications in China? Was the Chinese Exchange Administration monitoring the trends of the black market before each unification? The statistics show clearly the course of events (see Figure 4).

(1) China's two unifications were the acknowledgment of the "status quo." The Chinese Exchange Administration did nothing more than admit the truth of the black market rate. The black market exchange rate was already the mature stable rate that the official rate could follow at each unification.

(2) Each big devaluation came after high fluctuations in the black market exchange rate. During the fluctuations, the official rate was kept unchanged until the fluctuations became stable. When a stable point was reached in the black market,

the official rate was suddenly devalued towards the black market rate. To some extent the black market exchange rate has been a predicator of the devaluation of the official exchange rate.

(3) The test of successful unification is whether the black market premium grows larger after unification. The first unification was a failure since the black market continued to grow. The second unification successfully depressed the black market premium for more than two years.[18] The success was reflected in China's balance of payment which turned from deficit to surplus, and the approach adopted by the authorities to control the exchange market was through the market mechanism in contrast to the measures applied by the administration in the past.

The question thus arises as to why the government hesitated to follow the black market exchange rate. There are several reasons. The black market rate indicates the real inflation rate; if the official rate followed the black market rate, it would devaluate frequently, thus inducing disorder in the society like the Tien-anmen incident. Since the mid-1980s China's import dependency increased steadily reaching 19.1 per cent. Those imports were indispensable daily necessities, raw materials, machines, and equipment. The devaluation of the official rate would spur another round of inflation. The share of the processing industries continued to grow, implying more imports of raw materials and semi-finished products. In 1993 such imports accounted for 35 per cent of the total imports. The devaluation of the official rate would increase the cost of imports which in turn would make those exports less competitive. Moreover, in the late 1980s China's ratio of external debt to service grew considerably. Thus a devaluation would worsen budgetary conditions. Finally, devaluation would trigger trade friction between China and the United States since the United States previously charged China with "exchange dumping."

CONCLUSIONS

This paper undertook a comparison of China's official and black market exchange rates. The main finding can be summarized as follows: First, the Chinese authorities take the black market exchange rate into their policy considerations. In fact, the black market exchange rate serves as a barometer to measure the deviation of the official rate from market equilibrium. It also helps the exchange control authorities determine the point and timing of each devaluation and unification. Second, the inflation rate appears to be the main determinant of the black market exchange rate. The government's expansionary monetary policy to sustain a high rate of growth is reflected in the black market which, through devaluation, helps eliminate excess real money imbalances and restore macroeconomic equilibrium. The devaluation of the official rate reduces the black market premium. Third, the official rate has not

[18] This refers the period from January 1994 to January 1996, the time when this paper was finished.

always been sensitive to the black market rate, depending upon the policy of the authorities. There was a trade-off between export promotion and stability in the economy. Fourth, the existence of the black market premium is one of the incentives for exchange flight.

Although China's foreign exchange black market dwindled to nothing after the second unification, the market still exists. Whether it will loom large in the future rests on China's macroeconomic policies, in particular, on exchange rate policy. During the process of market-oriented reform, realizing the convertibility of the renminbi, both in current and capital accounts, will cause the black exchange market to disappear.

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