TRANSACTION COSTS AND CORRUPTION: 
CHINESE CAPITAL FLIGHT, 1984-2012

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ABSTRACT: Since 1984, the foreign debt of the Peoples' Republic of China has increased at a greater rate then would be explained by changes in the country's current account, foreign direct investment and reserve holdings. This pattern is consistent with the large-scale outflow of financial capital, commonly referred to as capital flight. However, since 2005, there has been a sharp acceleration of capital flight reaching an estimated $350 billion in 2012 alone. This study provides three estimates for capital flight from the PRC for the period 1984 through 2012 using both Cuddington's balance of payments and the more inclusive residual measures. These measures are adjusted to reflect the legitimate assets of the Chinese banking industry, mis-invoicing of China’s trade with its major trading partners (especially Hong Kong), and the failure of official debt data to capture certain bank transactions. Based on these estimates, the possible causes of the recent acceleration of capital flight are examined. Since the increase of capital flight occurred during a period of rapid economic growth, appreciating currency, and improved perception of political stability; the most likely causes are corruption combined with high transaction costs in China’s financial markets. JEL# F34, O16

Key terms: capital flight, China, Hong Kong, transaction costs, international capital flows, balance of payments, foreign debt, corruption

Correction, criticisms, and comments would be greatly appreciated. Please do not quote without permission.

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I. INTRODUCTION

Since the late 1970s, the People’s Republic of China (PRC) has experienced rapid economic growth fueled, in part, by a sharp increase in foreign direct investment (FDI). However, there is evidence that China has also experienced large-scale capital flight during the same period. (For example, Kaye 1993, Wu 1993, Prybyla 1994, Gunter 1996 and 2004, Fu 2000, Wu and Tang 2000, Zhu et al 2005, and Sharman 2012)

What is capital flight? A common definition of capital flight is that it is “…an outflow of funds from a country motivated by an adverse change in the country’s economic, political or social environment.” (Gunter 2008, p. 434) Some researchers use a narrower definition. For example, Epstein (2005, p. 3) states that: “Capital flight is the transfer of assets abroad in order to reduce loss of principal, loss of return, or loss of control over one’s financial wealth due to government sanctioned activities.” When defining capital flight it might be useful to keep in mind Dornbusch's warning that capital flight is like the proverbial elephant, more difficult to describe than to recognize. (1990, p. 3) Regardless of the precise definition, the size and large variance of a country’s capital flight are sources of concern since capital flight may contribute to an unnecessary increase in a country’s foreign debt, undermine the tax base, and result in a net real capital transfer out of the country (Khan and Ul-Haque, 1985).

Some critics of the literature have argued that capital flight is just a pejorative term for international diversification. Or as one writer put it: "Why is it that when an American puts

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1 It is often confusing to define the inclusiveness of “China”. In 1997, Hong Kong was formally reincorporated back into the People’s Republic of China. However, consistent with “one country, two systems”, Hong Kong continues to report balance of payments data separately from the rest of the People’s Republic. For the purposes of this paper, “China” will refer to the People’s Republic of China minus Hong Kong.
money abroad it is called 'foreign investment' and when an Argentinean does the same it is called 'capital flight'?" (Kanitz 1984) Recognizing this distinction, Dornbusch posits two types of capital flight. The first is motivated by the fear of discrete losses as a result of expected major changes in the exchange rate, political risk, financial repression, and tax considerations. The second type, referred to as "low level capital flight" takes the form of a steady outflow motivated by tax considerations or the inability to diversify a portfolio in the developing country's capital market. (Dornbusch 1990, pp. 4-4) This study will examine both types of Chinese capital flight.

Previous studies of capital flight from China have attempted to both estimate the volume of capital flight and seek explanations for its size and growth. Gunter (2004 and 1996) estimated capital flight from China for the period 1984-1998 and discussed various explanations including high domestic financial transactions costs, inappropriate exchange rates, the entrepôt role of Hong Kong, and political uncertainty. Roache and Maziad (2013) discuss the implications of Chinese capital flight for financial stability and the international use of the Chinese currency, the Renminbi (RMB). They report People’s Bank of China estimates of $60-$80 billion a year of unreported capital flows for the period 2008-2011. (pp, 106-107) These results fall between the unadjusted and adjusted residual measure of capital flight shown on Figures 1 and 2 of this paper. Sharman (2012) returns to transaction costs as a determinant of capital flight while rejecting criminal activities and tax arbitrage as possible explanations.

Zhu, Li, and Epstein (2005) not only provided estimates of capital flight for the period 1982-2001 but also examined why large-scale capital flight from China had less of a negative impact then expected. Wu and Tang (2000) provide several estimates of Chinese capital flight based on three different estimates of China's external debt. They then examine the implications of capital flight for the value of the Yuan and the Chinese economy in general. Cai in his 1999
study of outward foreign direct investment noted that the growing amount of corruption might be an important determinant of capital flight. (pp. 857-858) Sicular (1998) used the Gunter (1996) capital flight estimates in her study of capital flight and foreign investment in China. She focused on the mystery of why China was simultaneously experiencing large amounts of inward foreign capital investment and outward capital flight. She concluded that an important component of an explanation was the different incentives faced by foreign and domestic investors. Shih (2011) focuses on the severe concentration of wealth in the Chinese economy. He argues that this concentration means that a relatively small percentage of the Chinese population could be responsible for a rapid growth in capital flight. There have also been valuable studies of other post-socialism states that shed light on Chinese capital flight. (For example, Brada et al 2013.)

This current paper focuses on extending Gunter (2004) in three ways. First, the same techniques for estimating capital flight and adjusting these estimates for the effects of legitimate foreign bank assets, trade mis-invoicing, and incomplete foreign debt coverage are used to produce an extended period, 1984-2012, of Chinese capital flight. This will provide data for analysis of the determinants of Chinese capital flight. Second, an over-valued exchange rate, political and economic uncertainty, and capital controls will be considered – and rejected – as the primary determinants of the relatively recent acceleration of Chinese capital flight. Finally, there will be a discussion of the roles of corruption and transaction costs as possible explanations.

II. MEASURING CAPITAL FLIGHT

One method of estimating capital flight is the balance of payments method credited to Cuddington. He believed that the most important characteristic of flight capital was that it was "hot" money. Small changes in perceived returns or risks result in a rapid transfer of these funds
out of the country. Based on this characteristic, Cuddington's balance of payments estimate of capital flight is equal to the sum of reported short-term capital exports by the non-bank sector and, the balancing entry, errors and omissions. The latter inclusion reflected Cuddington's belief that errors and omissions largely reflected unrecorded short-term capital flows (1986, p. 3).

Estimates for the 2012 PRC capital flight using the balance of payments formula is given in Line G of Table 1 while the balance of payments estimates for 1984-2012 are shown on Figure 1 and Tables 2A and 2B. This balance of payments measure of capital flight shows substantial year-to-year variation ranging from a low of minus $69 billion – a net capital inflow – in 2007 to a high of $146 billion net capital outflow in 2012. If one assumes that the return on this flight capital is equal to the dollar inflation rate then the cumulative capital flight over the period 1984-2012 was about $387 billion in 2012 dollars or roughly $13 billion a year.

Table 1: 2012 Capital Flight Estimates

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<tr>
<th></th>
<th>Balance of Payments Measure</th>
<th>Residual Measure</th>
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<tbody>
<tr>
<td>A</td>
<td>Non-Bank Private Short-term Capital Outflows</td>
<td>$66.0 billion</td>
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<tr>
<td>B</td>
<td>Net Errors and Omissions Outflows</td>
<td>$79.8 billion</td>
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<td>C</td>
<td>Current Account Balance</td>
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<td>D</td>
<td>Net Foreign Direct Investment</td>
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<tr>
<td>E</td>
<td>Change in International Reserves</td>
<td>-$96.6 billion</td>
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<td>F</td>
<td>Change in International Debt</td>
<td></td>
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<tr>
<td>G</td>
<td>Unadjusted Capital Flight Estimate</td>
<td>$145.8 billion</td>
</tr>
<tr>
<td>H</td>
<td>Reported Foreign Assets*</td>
<td>-$88.3 billion</td>
</tr>
<tr>
<td>I</td>
<td>International Debt Correction</td>
<td></td>
</tr>
<tr>
<td>J</td>
<td>PRC/Hong Kong Trade Mis-invoicing</td>
<td></td>
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<tr>
<td>K</td>
<td>Adjusted Capital Flight – Low Estimate</td>
<td>$57.5 billion</td>
</tr>
<tr>
<td>L</td>
<td>PRC Trade Mis-invoicing (Substitution for PRC/Hong Kong Mis-invoicing – Line J)</td>
<td></td>
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<tr>
<td>M</td>
<td>Adjusted Capital Flight – High Estimate</td>
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</tbody>
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A more widely accepted method of estimating capital flight concentrates on capital flight as being a residual. (See Erbe, 1985; World Bank, 1985; BIS, 1989; Gunter, 2004, 1997, 1996 and 1991; and Brada et al 2013.) The current account balance, changes in reserves and the amount of net foreign direct investment determine the amount of necessary international borrowing for a nation. If actual foreign borrowing during a period exceeds this necessary amount then it is assumed that the difference or residual represents additional borrowing to offset capital flight. The estimate for 2012 Chinese capital flight using this residual method is also shown in Table 1. In that year, the PRC had a current account surplus of over $193 billion while there was a net inflow of foreign direct investment of about $156 billion. Since, China’s international debt increased by $44 billion in 2012, one would expect – in the absence of capital flight – a $393 billion increase in the country’s international reserves (i.e. $393 = $193 + $156 + $44). However, China’s international reserves increased by only $97 billion, which implies about $296 billion of capital flight – Line G in Table 1. As can be seen in Figure 1 and on Tables 2A and 2B, estimated capital flight for 2012 is the highest ever recorded; it is almost three times greater than the 2011 estimate of $92 billion.

Is the surprisingly high 2012 estimate of capital flight, using the residual method, a statistical artifact? There are several reasons to think that it may reflect an actual acceleration of
capital flight. First, there was anecdotal evidence in 2012 that outflows were extraordinarily heavy. (Economist 2012, pp. 45-46) Second, while some of the economic and financial variables are subject to substantial revision after their initial release, the 2012 data used in this study was reported in 2014 and incorporates initial revisions. Third, although the scale is much smaller, the balance of payments measure also shows a substantial increase in capital flight between 2011 and 2012. As discussed above, these two estimation methods use different data and make different assumptions of the underlying relationships. Therefore, while there is often a divergence in these two measures, especially since 2005, the fact that both showed large increases in 2012 is additional evidence that the increase was real.

During the sample period, 1984-2012, the cumulative capital flight according to the residual measure was $1,100 billion ($1.1 trillion) or about $38 billion a year. Wu and Tang (2000, Table 4, p. 70) used the same method in their estimates of Chinese capital flight for the period 1990-1998 and got roughly the same results for the overlapping period. It should be noted that almost half of the accumulated capital flight occurred during 2008 – 2012.

The balance of payments approach and the residual measure, which rely on fundamentally different methods, provide a very rough guide to the direction and volume of Chinese capital flight. However, both approaches are flawed in different ways. The next section will attempt to improve these estimates of capital flight by adjusting for legitimate resident external capital, mis-invoicing of exports and imports especially, and correcting some exclusions in China’s foreign debt data. Rather than concentrate on a single measure of Chinese capital flight, these adjustments will be made – as appropriate - to both the balance of payments and the residual measures in order to provide a rough guide to the direction and volume of unreported capital flows and yet avoid the danger of implying an accuracy to the results that is not deserved.
III. ADJUSTMENTS TO CAPITAL FLIGHT ESTIMATES

1. **Legitimate Resident Foreign Capital**

   All holdings of foreign financial assets are not evidence of capital flight. Some may be necessary to facilitate foreign trade and finance. (Perez et al, 2012, p. 110) It seems especially inappropriate to count as capital flight, foreign financial asset holdings that are reported to the Chinese government. Therefore one can reduce the capital flight estimate by any increase in the non-reserve foreign assets of China’s banking system as reported by the People's Bank of China to the International Monetary Fund. Of course, changes in the value of these "legitimate" foreign assets can be caused by exchange rate variations as well as international flows. From 1984 through 2012, there have been large year-to-year changes in this adjustment for legitimate resident foreign assets. For example, the largest negative change – increasing estimated capital flight – occurred in 2009 when legitimate resident foreign assets decreased by $66 billion. While in 2011, there was the largest positive change in the total of such assets – decreasing estimated capital flight for that year – of $105 billion. In the final year of the sample, 2012, there was also a positive change of about $88 billion. (Shown on Table 1 as a negative – capital flight reducing – entry on Line H. See also Line C on Tables 2A and 2B.)

2. **Incomplete Foreign Debt Data**

   The remaining adjustments are only appropriate for the residual measure. One adjustment that has become less important over time is to fill in reporting gaps in China’s foreign debt statistics. Until 2002, the China statistical authorities only reported detailed data on long-term public debt owed to foreign creditors. There was evidence that this foreign debt was understated
in two ways. First, foreign banks report exposure to the private non-guaranteed sector in the PRC that was not reported by the Chinese government. Second, foreign banks' estimates of their short-term exposure to the public sector in China also exceeded the amount reported by the public sector in the official statistics.

One method of adjusting for this discrepancy is as follows. Add the foreign debt reported by the Chinese government – primarily public debt - to the liabilities of Chinese entities – both public and private sector debt - reported by international banks. This sum, of course, would count twice loans from foreign banks to public entities in China. Since China provided a breakdown of foreign debt by maturity and, for long-term debt, by creditor, one can correct for this double counting. This correction is shown on Line E of Tables 2A and 2B.

If the sum of short-term debt and long-term debt reported as owed to foreign banks is greater than the reported liabilities of the international banks then it is assumed that the reported debt figures are correct. This occurred in 1987, 1989, 1992, 1997, and 1999. However, if incorporating foreign bank data leads to a larger debt estimate then the revised data is used. Beginning in 2002 through the end of the sample period, continued debt adjustment was not necessary as a result of the Chinese government’s decision to use the debt data reported by international creditors, instead of the data reported by its own bureaucracy.

It is, of course, possible that the higher estimates for the level of Chinese foreign debt could be consistent with the same amount, or even less, debt accumulation than that shown by the official debt figures. While this debt adjustment has no effect on the balance of payments measure of capital flight, it had a significant effect on the residual method since it changes the amount of foreign debt to be "explained." As is well known, China’s foreign debt has grown
rapidly since 1984, doubling about every six years. Most recently, foreign debt grew from $321 billion in 2006 to $754 billion in 2012. This data does not include the

3. Mis-invoicing of Exports and Imports

Another adjustment that might be made to residual estimates is to correct for mis-invoicing of exports and imports. The residual measure assumes that the current account measure is accurate. If the actual exports were larger or imports were smaller than reported in the official statistics then this increases the size of the residual that will be identified as capital flight. McDonald and Gulati have argued that both reported exports and imports may be biased as a result of deliberate mis-invoicing in order to circumvent trade controls, avoid import tariffs and/or facilitate capital flight (McDonald, 1985; Gulati, 1987:68-78). For example, a Chinese resident may under-invoice his exports and then direct the unreported difference between the invoice amount and his actual receipts to some financial haven. Such under-invoicing of exports would reduce the reported Chinese trade surplus. Similarly, a Chinese resident may over-invoice her imports. If capital flight is her motivation then the payment for these imports would be divided between the actual cost of the imports and an unreported deposit in some foreign haven financial institution. When foreign exchange is selling at a premium in the parallel market, over-invoicing of imports might also provide a means of obtaining additional foreign exchange to sell on the parallel market. Over-invoicing of imports also has the effect of worsening the country's reported balance of trade.

Accompanying the growth and changing pattern of China’s trade since 1984 has been a growing discrepancy in the statistics reported for bilateral trade. One should be able to roughly match up China’s exports to one of its trading partners, for example the U.S., as reported by
China and the counterpart transaction of U.S. imports from China as reported by the U.S. The difficulties of making this type of comparison have been well known since Morgenstern's seminal book on the subject of the accuracy of economic data (1965, Chap. 9). First, one must adjust for the additional costs of insurance and freight (cif) that adhere to an import that are not included in the price of an export. According to the International Monetary Fund, this cif difference is approximately 9% for China. Second, comparisons can also be affected by problems of timing. An export may be recorded in one year while the corresponding import is not recorded until the next year. Third, the quality of import data tends to be better than the quality of export data since governments more carefully monitor imports in order to maximize tariff income or enforce quotas. Fourth, while the country of origin of an import can often be determined by close examination of the product; the ultimate destination of an export is often impossible to determine since it may be re-exported by one or more intermediate countries before its journey is complete. Finally, comparisons of counterpart data can be complicated by deliberate attempts of exporters or importers to deceive customs officials or other government agents. This deception can be motivated by the avoidance of tariffs, non-tariff trade barriers, or as a means of facilitating capital flight.

In 2012, the Chinese government reported $875 billion in exports to and $638 billion in imports from its twenty-two high-income trading partners. However, after adjusting for the difference between cif and fob, China’s trading partners reported Chinese exports of $996 billion and Chinese imports of $559 billion in that year. Combining these discrepancies points to mis-invoicing of $200 billion in 2012! (Line L on Table 1 and Line D.1 on Tables 2A and 2B)
The discrepancies in China – high-income nations bilateral trade statistics have grown sharply from 1984 through 2012. If these estimates are accurate then mis-invoicing is now the method of choice for capital flight from China tending to dominate other possible options.

4. Role of Hong Kong

Any analysis of Chinese capital flight is complicated by the importance of Hong Kong as a capital and trade entrepôt for China. This importance is a function of geography, history, comparative advantage, and the 1997 reunification. While some state that Hong Kong is still the laissez-faire state that flourished under British rule prior to reunification. (Huang 2008, p. 3), there is evidence discussed below that its role has evolved since reunification. What is unambiguous is that Hong Kong remains one of Mainland China's most important export destinations. Chinese exports to Hong Kong totaled about $324 billion in 2012, second only to the United States, $353 billion, as an export destination. Japan was third at $152 billion. However, a large proportion of Hong Kong's international merchandise transactions take the form of re-exports - goods imported into Hong Kong for processing and/or warehousing before being shipped to another country. China’s imports from Hong Kong in 2012 were small, only about $18 billion, less than China’s imports from Switzerland.

Bilateral trade between the China and Hong Kong reveals an interesting pattern. As was discussed above, Chinese data on trade with industrial nations reveals an over-invoicing of imports and an under-invoicing of exports. Both of these mis-invoicing results are consistent with capital flight. However, with respect to its trade with the same high-income countries, Hong Kong tends to show under-invoicing of both exports and imports that to a great extent offset the mis-invoicing of China. In other words, the combined trade data for China and Hong Kong
(adjusted for double counting) reveals much smaller mis-invoicing with respect to high-income countries than either China or Hong Kong data considered separately.

To the extent that this offsetting occurs, it lends support to the view that the discrepancies in China’s trade statistics may be caused more by problems in determining provenance and destination of merchandise trade rather than capital flight. In fact, until 1997, the contribution of the combined China-Hong Kong estimates of mis-invoicing to capital flight was small and often negative. However, beginning in 1998, the combined mis-invoicing began to increase although remaining substantially less than the mis-invoicing attributed to China alone. For example, in 2012, as can be seen on Table 1, China’s mis-invoicing with respect to the major industrial nations was about $200 billion (Line L, see also Line D.1 in Tables 2A and 2B.), while is more than twice the combined China-Hong Kong mis-invoicing of about $82 billion. (Line J see also Line D.2 in Tables 2A and 2B). Need to explain $118 billion and $82 billion.

However, even if one accepts that the transshipment of Chinese exports through Hong Kong as the primary source of the discrepancy in the China’s bilateral trade statistics then one is still left with the question of determining the destination of the earnings from this mis-reported trade. There are three possibilities. First, these earnings from Chinese exports may be repatriated back to China but not reported as such. The failure to report may be a result of defective data collection or an attempt to capture certain subsidies intended for foreign investors. In this case, Hong Kong serves as a way station to disguise the origin of Chinese funds in order to facilitate the returns of these funds to China as "fake foreign" investments or round tripping. (See Huang 2008, pp. 1-10, for a discussion of the motivations of round tripping.)

Second, the fact that the China and Hong Kong trade discrepancies tend to be offsetting may be irrelevant since Chinese portfolio holders may still view Hong Kong as a "foreign" haven
for their capital. This confidence that their holdings in Hong Kong could be based both on China’s commitment of "one country two systems" as well as a more pragmatic view that if the financial independence of Hong Kong is threatened then China portfolio holders with assets in Hong Kong will be able to quickly and efficiently move their funds to another haven at minimal cost. Despite their long history in China, capital controls are still considered very unlikely in Hong Kong especially since Hong Kong lacks the legal justification and procedures to enforce such controls. In fact, the U.S. Drug Enforcement Administration lists Hong Kong as an area where substantial money laundering occurs. (Perez et al, 2012, p. 112)

Third, Hong Kong may simply be a way station for capital flight headed to other countries. As noted above, the combined China Hong Kong mis-invoicing estimates began to increase following the 1997 reunification. (See Line D.2 in Tables 2A and 2B.) This may reveal reduced confidence that Hong Kong will continue to be a safe haven that is secure from the Chinese authorities. Holders of flight capital are moving increasing amounts of their holdings from Hong Kong to countries perceived to have a better combination of secrecy, security, and return.

IV. PATTERN OF PRC CAPITAL FLIGHT

Since estimating capital flight is fraught with theoretical and practical difficulties, it would give a false sense of accuracy to focus on one measure as "the" measure of capital flight. However, keeping in mind the assumptions that are required, some conclusions concerning the probable range of PRC capital flight during the sample period are possible. Figure 2 shows three estimates of capital flight, an adjusted balance of payments estimate (labeled K.1) and two residual estimates. The "low" residual estimate (labeled M) is adjusted using the combined
China/Hong Kong mis-invoicing data. The “high” residual estimate (labeled K.2) is adjusted using only the China mis-invoicing data.

[Insert Figure 2: Adjusted balance of payments, residual estimate (low), and residual estimate (high)]

Due to the importance of the mis-invoicing adjustments especially after the imposition of capital controls in 1998, it is likely that the actual level of capital flight from the People's Republic of China is between the “low” and “high” residual estimates. If this is correct then capital flight over the last three years has grown from roughly $162 billion (plus or minus $55 billion) in 2010 to about $132 billion (plus or minus $60 billion) in 2011 before reaching approximately $348 billion (plus or minus $60 billion) in 2012. Assuming that net earnings of this flight capital was just sufficient to offset dollar inflation then the accumulated PRC capital flight since 1984 is approximately $2.3 trillion ($2,300 billion) about $80 billion a year with over 50% of this total occurring in the most recent six years.

It might be useful to compare both the flow and stock of PRC capital flight to other Chinese economic variables in order to get a sense of scale. The estimated $348 billion of capital flight in 2012 is equal to about 15% of China’s total exports of goods and services and roughly 180% of the country’s current account balance in that year.

Another comparison, emphasized by Cai (1999), is the ratio of capital flight to inward foreign direct investment. In 2012, this ratio was 138%! In other words, outward capital flight that year was larger than the inward foreign direct investment (FDI) of $253 billion. (Note that $253 billion is gross FDI while the $156 billion shown on Table 1 is net FDI.) In fact, capital flight from the PRC was greater than inward FDI in every year since 2006.
With respect to the scale of the accumulated flight capital, the estimated 1984-2012 accumulated flight capital of about $2.3 trillion was equivalent to 70% of the country’s international reserves, which were $3.3 trillion at the end of 2012. Another possibility is to compare it to the level of PRC foreign debt. This ratio has changed little over the last decade and was an estimated 300% at the end of 2012.

Since the balance of payments estimate of capital flight is dominated by capital flight through financial transactions while the residual estimates of capital flight are dominated by trade mis-invoicing, it is somewhat reassuring that, from 1984 until the imposition of capital controls in 1998, the three estimates tended to mirror each other. The rest of this paper will be devoted to attempting to explain the post-1998 pattern of Chinese capital flight especially the rapid acceleration of capital flight according to the residual measures since 2005.

V. TRADITIONAL DETERMINATES OF CAPITAL FLIGHT

In Gunter (2004 and 1996), it appeared that inappropriate exchange rates, political uncertainty, capital controls, and changes in the unique role of Hong Kong were the major determinants of the volume and pattern of capital flight from the PRC. In view of the new data and the greater internationalization of the Chinese economy these explanations must be reconsidered.

It is tempting at this point to take one of the estimates of capital flight shown in Tables 2A and 2B and regress it on a series of variables representing the theoretically possible determinants. This is a widely adopted approach. (For example, see Collier, Hoeffler, and Pattillo, 1999 study using quarterly capital flight data.) However, since my use of annual data only provides 29 data points and there is a strong possibility that there are large
measurement errors in both the dependent and independent variables; a regression approach is inappropriate. Not only will the results suffer from a degrees of freedom constraint but also the existence of measurement errors usually leads to regression parameters that are both biased and inconsistent. (See Pindyck and Rubinfeld 1991, pp. 159-161 and 174-179; and Herbert 1995, pp. 98-100) Consequently, this paper uses a more intuitive approach that avoids assuming unwarranted data accuracy.

1. Inappropriate Exchange Rates

One of the most widely accepted causes of capital flight is exchange rate overvaluation. If portfolio holders expect devaluation then they have a strong incentive to arrange for at least part of their holdings to be denominated in a foreign currency in order to profit from the exchange rate change. Has exchange rate overvaluation been one of the causes of Chinese capital flight during the sample period?

Based on the gap between the official and black market exchange rates, one could make the argument that the RMB was overvalued through most of the 1980s and 1990s. And, in fact, there was a substantial devaluation – almost 33% - of the official RMB rate in 1990 that reduced but did not completely close the gap between the official and black market rates. Such an overvaluation is consistent with capital flight and, as can be seen in Figure 2, the “High Residual” measure (listed as M) of such flight grew substantially. However, despite the Asian Financial Crisis of 1997, China resisted any further devaluation. It is possible that China engaged in a "back door" devaluation for two or three years following the Asian Financial Crisis.

Concerned that an announcement of devaluation might lead to a further loss in international
confidence in the region, China may have achieved some of the same trade benefits of
devaluation by simultaneously providing export subsidies and increasing import tariffs.

Regardless of any “back door” devaluation, the RMB continued to trade at 8.3 RMB/$ on
the official market until 2005 when the government orchestrated a series of appreciations
resulting in an exchange rate of 6.8 RMB/$ in 2010 and about 6.3 RMB/$ at the end of 2012.
(Chalk and Syed 2013, Figure 2.11, p. 42) However, this 20% appreciation was accompanied by
an acceleration of capital flight – the opposite of the prediction.

What can be said about exchange rate overvaluation and Chinese capital flight? Keeping
in mind the large possible measuring errors in estimates of both capital flight and overvaluation,
it seems fair to conclude that exchange rate overvaluation was a major but not the sole
determinate of capital flight during the 1984-1998 period. However, between the Asian Financial
Crisis and 2005, the Chinese RMB went from an undervalued currency to an overvalued one that
required rapid accumulation of foreign reserves combined with capital controls to slow its
appreciation. And yet, as can be seen on Figure 2, capital flight accelerated as the RMB
increased in value. Expected exchange rate changes do not appear to be major determinate of
Chinese capital flight during the post-Asian Financial Crisis period.

2. Economic and Political Uncertainty

Increases in economic or political uncertainty can lead to increased capital flight in two
ways. First, increases in uncertainty reduce the expected risk adjusted return on domestic
investments. This reduction could range from a slight decrease in expected risk adjusted interest
all the way to government confiscation of real or financial assets. Lower expected domestic
returns relative to those on foreign assets will lead to a capital outflow. Second, increases in
uncertainty tend to decrease planning horizons and desired maturity of investments. (Gunter 1994, pp. 24-32) As discussed below, to the extent that foreign assets have transaction costs and risk adjusted returns that dominate domestic assets for shorter maturities then a shortening of desired maturities will also lead to increased capital flight.

_Institutional Investor’s_ twice a year listing of country risk provides an external evaluation of the political and economic risk facing investors in China. The almost one hundred participants tend to base their ratings on a country's debt service record, political outlook, economic outlook, financial reserves and current account, and several macroeconomic and financial measures. (Coplin and O'Leary 1994, p. 138) China’s ratings reveal an interesting pattern. From the first _Institutional Investor’s_ rating of China in 1984 until 1989, the country was considered one of the 25 best countries in the world for FDI. However, after Tiananmen Square, both China’s ratings and its international ranking dropped sharply for almost a decade and a half. In fact, it wasn’t until 2004 that the country’s rating exceeded the Pre-Tiananmen value of 62.9, which made it the 38th best country for FDI. Since 2004, its rating and ranking have steadily improved reaching 77.8 – 23rd in the world – in 2012. Comparing China's capital flight and its credit rating fail to show the expected inverse relationship. The annual rate of growth of Chinese capital flight was about the same (22-23%) before and after the collapse in the country's credit rating in 1989-1990. More recently, the improvement of China’s ratings since 2004 has been accompanied by a substantial increase in capital flight, again the opposite of the prediction. However, there does appear to be a drop in capital flight when there is a perceived increase in the political and economic uncertainly in destination countries. For example, one is struck by the declines in outward capital flows in 2001, the year that the al Qaeda terrorist group attacked New York City and Washington D.C., and in 2008, following the Asian Financial Crisis.
Is the steady improvement in the *Institutional Investor* China ratings consistent with other data on the country’s economic and political environment? As is well known, China has experienced almost three and half decades of strong real GDP growth. Of course, this progress has been uneven. As discussed below, while per capita real income has increased dramatically, the benefits and burdens of this growth are unevenly distributed with wide geographic, industrial, and professional inequalities. There has also been serious environmental degradation. However, the liberalization of the Chinese economy is generally perceived to be a great success.

Less discussed is the political situation. In the two and half decades since the People’s Liberation Army crushed the Tiananmen Square protest, confidence in the country’s political stability has increased. The transfer of leadership under the 4th Constitution from Yang Shangkun to Jiang Zemin to Hu Jintao and – in March 2013 – to Xi Jinping followed accepted Communist Party procedures and was peaceful. It is true that the much-heralded transition to democracy has stalled while communism is no longer widely accepted as the ideal form of social and economic organization. As a result, China lacks an ideology to provide legitimacy for the state. However, the national leadership has been able to rely on the other two legs of the legitimacy tripod; economic growth and nationalism. This political stability combined with strong economic growth is consistent with China’s improved country risk rankings and inconsistent with the observed acceleration of capital flight.

3. Capital controls

Since the beginning of the economic liberalization until 1998, there was a gradual weakening of Chinese capital and exchange controls. The ability of Chinese residents to deal in foreign currency and instruments increased as well as the ability of foreigners to deal in RMB
and RMB-denominated instruments. However, some restrictions on such transactions remained
and, in late 1998, China substantially tightened controls on capital and money market
instruments in order to reduce capital flight. And, to a great extent, these capital controls
continued through 2012. (Heritage 2014, Investment and Financial Freedom: 1995-2014. Also,
see World Bank 1997, pp. 196-203 for a detailed look at capital controls before the 1998
changes.) Before the impact of these strengthened controls is analyzed, it might be useful to look
at the theoretical impact of controls. Capital controls, to the extent that they increase the
transaction costs associated with holding foreign assets or decrease the return on such assets
should reduce capital flight. However, there are indirect effects that may cause capital controls to
result in an increase in capital flight or at least a decrease in the repatriation of flight capital.
(Gunter 1994, pp. 73-77.)

First, the imposition of capital controls may be taken as a signal that the government
intends to adopt new fiscal or monetary policies that will injure Chinese business persons or
portfolio holders. Before controls, economic decision makers were restrained from adopting bad
policies by the concern that adopting these polices would lead to a sharp increase in capital
flight. By increasing the cost of capital flight, greater policy flexibility is obtained. Therefore, to
the extent that portfolio holders think that capital controls will allow the government to adopt
policies that will have adverse effects, there may be an increase in capital flight.

A second way in which capital controls may exacerbate problems with capital flight is by
reducing flight capital repatriation. With low barriers to capital flight then repatriation of flight
capital will occur whenever a change in the relative returns, transaction costs, or preferred
maturities causes a reversal in the dominance of foreign and domestic assets. For example, a fall
in economic or political uncertainty would increase the risk adjusted return on domestic assets
and lead to some repatriation. However, an increase or strengthening of capital controls such as occurred in China in 1998 would reduce or eliminate such repatriation by increasing the penalty of guessing "wrong" about the economy's future. In other words, the holder of foreign assets realizes that if she repatriates her flight capital this month and realizes next month that she has made a mistake then sending her funds back abroad will be more difficult and expensive. Portfolio holders will therefore require a higher degree of confidence in their expectations of the future performance of domestic and foreign assets before they will repatriate since the decision may be irreversible. In other words, tightening of capital controls may "maroon" flight capital abroad.

Finally, the reporting requirements, enforcement procedures, and bureaucratic influence required by tougher capital controls may reduce the efficiency of Chinese firms. This loss of efficiency will reduce the expected growth of the domestic economy, the return on domestic investments, and, therefore, increase the incentives for capital flight.

The effect of the 1998 capital controls on Chinese capital flight was surprisingly straightforward. Imposing stricter capital controls on the international transactions of Chinese banking and other financial intermediaries changed the preferred route of capital flight without substantially reducing the volume. As noted by Shih, despite the capital controls, there remained many routes for capital flight ranging from taking briefcases of currency across the border to: "…underground money changers, doctored trade invoicing, false reporting on the amount of money raised in overseas share offerings, and fake foreign direct investment in fixed assets…" (2011, p. 26) The data supports the inability of capital controls to substantially reduce capital flight. As can be seen in Figure 2 and Tables 2A and 2B, capital flight estimated according to the balance of payments method (Line K.1), which is dominated by financial transactions, fell
sharply from $27 billion in 1997 – the year before the new capital controls - to a \textit{minus}$23 billion in 2000 – the year the controls were fully implemented. However, during the same period, more inclusive residual measures of capital flight (Line M), which is dominated by mis-invoicing, actually increased during the crackdown from $109 billion in 1997 to $113 billion in 2000. This divergence between the balance of payments and the residual measures continued until 2009 when the government began to partially relax capital controls as part of its effort to internationalize the RMB. (Economist 2013, p. 76)

The acceleration of Chinese capital flight from 2005 to the end of the sample period in 2012 does not appear to be caused by an overvalued exchange rate, an increase in economic or political uncertainty, or the relaxation of capital controls. Alternative explanations are that the recent capital flight represents the fruits of corruption or that it is an example of Dornbusch’s “low level capital flight”.

VI. ALTERNATIVE EXPLANATIONS

1. Corruption

Since 2000, the Chinese government has made little progress is improving its reputation for integrity. Corruption, the use of public power for private gain (Gunter 2008), is difficult to measure but the standard sources show little progress or deterioration. Changes in Transparency International’s measure of perceived public sector corruption is sometimes incorrectly used to document a deterioration in China’s honesty. For example, Transparency International reported that China was the 40\textsuperscript{th} most honest country in 1995 but had fallen to 80\textsuperscript{th} in 2012. However, this apparent fall in the rankings was almost entirely a result of new countries being added to the sample. If one compares China in 2012 to the countries that were in the 1995 and 2003 reports
then its ranking is roughly unchanged. This conclusion is supported by the Heritage annual ranking of corruption that shows a drop in China’s reputation for probity following the Tiananmen massacre but a fairly rapid recovery until 2000. Since that year, perceived corruption among Chinese officials has been more or less unchanged though 2012. (Heritage 2014, Freedom from Corruption Graph)

If there is little evidence that China has become more corrupt in the last half decade then how can corruption lead to an acceleration of capital flight? Capital flight may increase if either the corrupt have more illicit funds to hide or are more interested in foreign sanctuaries as a place to hide their illicit money. There is evidence to support both. Since the liberalization of the Chinese economy began in the late 1970s there has been a sharp increase in income inequality. In fact, China, in a single generation, has transitioned from one of the most equalitarian states in the world to one of the most unequal. By 2012, a private estimate of the China’s Gini coefficient had reached 0.61 (a Gini coefficient of 0 represents complete equality of incomes while 1 represents complete inequality). (Osnos, 2014, p. 268) For comparison, the U.S. Gini coefficient is less than 0.45. Also in 2012, Forbes magazine reported that there were 95 Chinese billionaires putting the country in third place behind the U.S. and Russia as home to the most number of the extremely rich. (Forbes 2012) In an extensive investigation of wealth concentration, Shih estimated that the top 1% of urban households (0.4% of the Chinese population) controls between $2 trillion and $5 trillion. (2011, p. 23)

How much of this wealth is ill-gotten is difficult to estimate but it is believed that the origin of many recent fortunes in China are from legally ambiguous sources. This is especially true when newly rich persons are closely related to high government officials. (Gilley 2001, pp. 59-60) As noted by Joffè: “‘politics beats profitability as an allocator of resources.’” (2013, p.
C2) And this allows those with political influence to capture huge rents. According to Osnos “By 2012, the richest seventy members of China’s national legislature had a net worth of almost ninety billion dollars – more than ten times the combined worth of the entire U.S. Congress.” (2014, p. 252)

Concern that this wealth might be confiscated during the next Chinese government anti-corruption campaign can be an important motive for capital flight. Basically, the corrupt official faces three choices: keep his illegal earnings in the form of cash, use Chinese financial institutions to launder the illegal earnings, or move the funds abroad. The first option is difficult especially since the largest Chinese bill - the 100 yuan note – was only worth about $16 in 2012. (Osnos, 2014, p. 239) The second option, using Chinese financial intermediaries to launder holdings, is also difficult since the authorities closely monitor them and, for the reasons, discussed below, domestic holdings may have a low or negative return.

With respect to the third option, not only does moving funds overseas reduce the likelihood that they will be confiscated but also may reduce the likelihood that corrupt acts will be uncovered in the first place. Based on survey data, the very rich in China report that almost 20% of their wealth is held overseas, mostly in violation of Chinese law. And there are signs that even the middle class of China is increasingly sending funds abroad in excess of the $50,000 a year legal limits. In many cases, this is part of families’ long-term plan to move “their children, their money, themselves” permanently out of China. In 2011, the Central Bank estimated that over two decades, about 18,000 corrupt officials had fled the country taking an estimated $120 billion with them. (Osnos 2014, p. 244)

Corruption as a motivation is different from the other possible causes discussed above since it is important to disguise or “launder” the illegal sources of funds. This requirement, rather
than relative risk adjusted returns, is the primary motivation of such flight. (Perez et al 2012, pp. 110-111) Why should a legitimate Chinese wealth holder interested in investing in a country with a well-developed financial system pay a Hong Kong intermediary to handle the transaction? While it is possible that the Hong Kong intermediary provides value added as a result of financial or legal expertise, anecdotal evidence points the Hong Kong intermediary’s primary role is in disguising the origin of funds. (Lague 2001 pp. 57-58) These funds are not intended for investment in Hong Kong but rather, after their origin is disguised, they are invested elsewhere.

2. **Transaction Costs**

In addition to corruption, an unusual pattern of transaction costs is also contributing to the sharp escalation of capital flight. Purely as an attempt at portfolio diversification, Chinese capital flight is somewhat of a mystery. As a developing country, it would be expected that the return on capital would be greater in China than in one of the developed states or international financial centers. Also, China is a big economy. Its GDP today is greater than that of the entire world economy of just seventy-five years ago. And with over a billion people spread out over a large geographically diverse country engaged in a wide variety of economic activities, why can’t any demand for portfolio diversification be met inside the country? One possible explanation is the unusual pattern of transaction costs in China.

"Transactions costs arise from the transfer of ownership or, more generally, of property rights. They are a concomitant of decentralized ownership rights, private property and exchange." (Jürg Niehans, 1992, p. 683) With respect to financial instruments, these transaction costs would include the costs of gathering accurate information about an asset or liability, finding and evaluating the other parties involved in the transaction, negotiating the agreement
and, possibly, enforcing any agreements. As noted by Brada et al, any explanation of the volume and direction of capital flight must consider the effects of these costs. (2013, p. 34)

In the case of countries with well-developed financial markets, these transaction costs tend to account for only a small fraction of the value of a financial transaction. In addition, for well-developed markets, the transaction costs associated with international transactions are usually higher than those associated with domestic transactions. (See Gunter 1994 for a more extensive discussion.) However, portfolio holders in the People's Republic of China appear to face a situation where not only are 1) the transaction costs associated with financial transaction costs within China substantial but also 2) the domestic costs are greater than those associated with equivalent international financial transactions. In other words, the transaction costs for a Chinese person to purchase a diversified portfolio of common stock on the Shanghai Stock Exchange are probably greater than the transaction costs for the same Chinese person to purchase a diversified portfolio of common stock on the New York Stock Exchange.

There are several reasons for the high level of financial transaction costs in China’s financial markets. First, there is the high cost of missing, incomplete or confusing legislation on firm management and finance. (Roache and Maziad 2013, p. 111) These weaknesses, and the attendant uncertainty, are caused in part by the relatively recent legalization of the security markets in China. The bond market only dates from October 1990 while the market in equity began in November 1989. (Bei, Koontz, and Lu, 1992) It was only in 1999 that a National Security Law was announced intended to replace the confusing "temporary" regulations that governed Chinese stock markets during the 1990s.

Second, accompanying the lack of regulatory rules and procedures are severe failings in accounting and auditing making it difficult or impossible to obtain information on ownership,
revenues, expenses, and balance sheets of Chinese corporations. China continues to lack both generally accepted accounting procedures and an independent auditing function to assure the public that data is reliable. As recently as 2008, investors found it impossible to determine whether one of the largest private sector firms in China was, in fact, employee owned. Even determining whether a particular enterprise is a state owned enterprise (SOE) or private company could be difficult. Prospective investors have to search out clues such as the job tenure of firms’ senior leadership i.e. government directors of SOE tend to have shorter appointments than the leadership of private companies. (Huang 2008, pp. 10-12)

While there are over 1,000 Chinese companies listed in China or abroad with an estimated capitalization of almost $500 billion, almost all of these companies are majority owned by the government. As a result, regulators come under a great deal of pressure by various levels of the Chinese government to allow the firms to exaggerate their good news and conceal their bad. Eng and Lin found that even for Chinese firms that cross-listed in the United States, there was evidence of earnings smoothing and delays in loss recognition. (2012, p. 22) As a result of all of these issues, potential investors can have little confidence in the accuracy and timeliness of official statements concerning income statements, balance sheets, etc. In response, careful investors must expend money and energy in order to gather and analyze the necessary information before they can invest.

Finally, there is a substantial transaction costs associated with enforcing financial agreements. Chinese commercial law and the necessary body of procedures to enforce it are in their infancy. Adding to the lack of confidence in the agreement enforcement process is the widely held belief that the courts are often corrupt and biased.
The difficulty of obtaining reliable accounting information distorts financial intermediation in China. Insiders tend to dominate equity transactions since it is difficult, expensive and maybe impossible for an outsider to discover enough about a financial transaction to make a rational decision. Also, financial intermediation in China is still dominated by large state-owned banks. As recently as 2011, corporate issued stocks and bonds accounted for only about 14% of the nation’s capital while bank loans and acceptances accounted for 82% (Guo 2013, Figure 11.1, p. 166)

The impact of changes in transaction costs on capital flight is illustrated using Equations 1-3, which are shown in Figure 3. Assume that there are only three financial instruments available to a Chinese portfolio holder: domestic (Chinese) money, foreign bonds, and domestic equity. Money (M), Equation 1, is assumed to have zero transaction costs. And since there is severe interest rate repression especially for demand deposits (Shih 2011, p. 31), money has a negative real return roughly equal to the expected domestic inflation rate, $\lambda$. The line labeled Mt in Figure 3 shows the change in the expected real value of money holdings at any time n. Similarly, as shown in Equation 2, the expected real value of Domestic Equity at any time n is the product of the nominal return on this equity, $i_d$, adjusted by expected inflation, $\lambda$, minus the transaction cost, $C_d$. The change in the expected real value of domestic equity is shown as line $D_t$ in Figure 3.

The expected real value of foreign bond holdings, Equation 3, at any time n is the product of the nominal return on these bonds, $i_f$, adjusted by both any expected exchange rate changes, $(E_n-E_0)/E_0$, and expected domestic (Chinese) inflation, $\lambda$, minus the transaction cost, $C_f$. The change in the expected real value of foreign bond holdings is shown as line $F_t$ in Figure 3. The transaction costs for domestic deposits, $C_d$, and foreign bonds, $C_f$, are “round trip” costs e.g. the
costs of buying domestic equity (or foreign bonds) with domestic money as well as the cost of converting that equity (or bonds) back into domestic money at some future time. Also, these transaction costs could be fixed, e.g. a notary fee, or proportional to the size of the transaction.

(1) Domestic Money: 
\[ M_t = \frac{M_0}{(1 + \lambda)^n} \]

(2) Domestic Equity: 
\[ D_t = D_0 \frac{(1 + i_d)^n}{(1 + \lambda)^n} - C_d \]

(3) Foreign Bonds: 
\[ F_t = F_0 \frac{(1 + i_f)^n (E_n)}{E_0} - C_f \]

Subject to \( C_d > C_f \) and \( i_d > i'_f \) where \( i'_f = i_f (E_n/E_0) \)

Consistent with the above discussion Chinese financial markets, it seems plausible that, first, the transaction costs associated with foreign bond purchases and sales are less then the costs associated with the purchase of domestic equity i.e. \( C_d > C_f \), and, second, the expected nominal return on domestic equity will be greater than the exchange rate adjusted nominal return on foreign bonds, i.e. \( i_d > i'_f \) where \( i'_f = i_f (E_n/E_0) \).

These relationships are shown in Equation 4. The impact of these assumptions can be seen in Figure 3. A Chinese portfolio holder who intends to hold an asset for a period less than \( t_0 \), will choose to hold domestic money since for this period, the transaction cost involved in either of the alternative assets offsets the returns on these assets. For any period of time between \( t_0 \) and \( t_1 \), foreign bonds are the preferred asset even though the nominal return on foreign bonds is less than that of domestic equity. It is only for periods of time greater than \( t_1 \) that the higher returns of domestic equity offsets the higher transaction costs and allows domestic equity to become the
dominant asset. Thus we would observe capital flight whenever the optimal period for an asset was between \( t_0 \) and \( t_1 \).

Therefore, there are basically two routes through which changes in the Chinese and foreign situations can lead to a decrease in capital flight. Under the first route, there are five ways in which the "capital flight window," \( t_0 \) to \( t_1 \), could be reduced. They are: (1) a decrease in the domestic inflation rate, (2) a decrease in the transaction costs associated with domestic equity, (3) an increase in the return on domestic equity, (4) an increase in the transaction costs of foreign bonds, or (5) a decrease in the return on foreign bonds. All of these changes have the effect of either moving \( t_0 \) to the right or of moving \( t_1 \) to the left thereby reducing the period of time where foreign bonds dominate both domestic cash and equity.

The second route reflects the role of desired maturities in portfolios. A shift of portfolio holders preferences in the direction of longer maturities, greater than \( t_1 \), would lead to a reduction in capital flight because for a long enough maturity the higher return on domestic equity investments offsets the higher transaction costs. For example, the expectation of a new more aggressive anti-corruption will have two effects. First, because of the increased risk of fines or even confiscation, it will reduce the return on domestic investments, \( i_d \). This will increase the capital flight period, \( t_0 t_1 \), i.e. the range of maturities where foreign holdings dominate domestic ones. Second, by increasing uncertainty, there will probably be a reduction in the desired maturity. This will also probably increase the portion of a Chinese portfolio that falls within the capital flight period. This crude model of the impact of transaction costs on Chinese capital flight seems to provide insights into a phenomenon that has received extensive attention from researchers; the relationship between capital flight and FDI.
3. Foreign Direct Investment Revisited

China is currently experiencing large-scale *inward* foreign direct investment (FDI), *outward* FDI, and capital flight. This somewhat contradictory situation deserves an explanation. Thinking about the relationship between inward/outward foreign direct investment (FDI) and capital flight has been dominated by two theories. For several decades, the Chinese government encouraged inward FDI in order to accelerate economic growth. However, the government now increasingly facilitates outward FDI in order to strengthen Chinese firms internationally and achieve access to natural resources. (Sauvent and Chen 2014, p. 141)

According to the investment-climate theory, capital flight is determined by the relative return on foreign and domestic assets. If the expected return on foreign assets increases relative to that on domestic assets then one would expect both an increase in capital flight and a decrease in inward FDI. This is inconsistent with the Chinese situation over the last decade where there has been acceleration in both inward FDI *and* outward capital flight.

The alternative explanation, the discriminatory-treatment theory, emphasizes that countries often discriminate in favor of foreign investors. This discriminatory-treatment theory could provide an explanation of how a country might experience both large-scale capital flight and inward foreign direct investment. (See Kant 1996, pp. 11-15 for a discussion of these two theories.) For example, Sicural (1998) when she examined the seeming contradiction between China simultaneously being the recipient of large-scale foreign direct investment and experiencing substantial capital flight, concluded that the explanation lay in the "...differential between returns to domestic and foreign investors..." (p. 601) Adams (1993), in his note on investments from Hong Kong into Guangdong Providence, stated additional reasons why capital flight and inward foreign direct investment might be highly correlated.
First, like many developing countries, the PRC provides various tax, regulatory, and other benefits and incentives to foreign investors that are not available to domestic investors. Responding to these incentives, a Chinese portfolio holder might seek to use Hong Kong or another capital center as a laundry to disguise the origin of PRC funds in order to facilitate the return of these funds to the PRC as "fake foreigner" investments or "round tripping." (See Gunter 1996, p. 84; and Cai 1999, p. 870.) A second motivation for round tripping is the concern that the government may impose restrictions on the domestic use of foreign currencies such as those imposed in 1993 and 1998. By routing investments through Hong Kong or some other capital center, it may be easier to circumvent such restrictions. If these explanations are accurate then unreported capital movements to Hong Kong are not really capital flight any more than if capital flows from Nebraska to New York City before it is invested in Kansas.

The pattern of transaction costs provides a third explanation. If the desired maturities of Chinese portfolio holders are less than \( t_1 \) on Figure 3 while the desired maturities of foreign portfolio holders is greater then \( t_1 \) then there would simultaneously occur both outflows of Chinese controlled funds and the inflows of foreigner controlled funds. For example, if the optimal portfolio maturity is one year among Chinese portfolio holders and ten years for U.S. holders then the Chinese will send their money to Hong Kong while the Americans send their money to China.

FDI may also reduce the transaction costs involved with capital flight. Perez et al argue that the choice of which countries to invest in may be motivated, in part, by whether such investment will facilitate capital flight e.g. there would be greater tendency to invest in countries that are known to have weak financial regulatory regimes. (2012, p. 118-120) In other words, the transaction costs of outward and inward capital flows may not be independent; an increase in
inward or outward FDI may reduce the transaction costs of capital flight, $C_f$. The involvement of a Chinese individual, or firm in either being the recipient of inward FDI or the source of outward FDI tends to reduce the transaction costs of capital flight by providing general information, specific contacts, and access to transactions that can be converted, possibly using the trade mis-invoicing techniques discussed above, to facilitate capital flight. (Perez et al, 2012, pp. 111-112) For example, a manager of a firm in western China may desire to move some of his (or the firm's) assets abroad but lacks the knowledge and the means. However, if this firm becomes involved either as the recipient or source of FDI, it becomes more likely that he will be able to make international trips and consult with foreign financial institutions.

The foreign firm or individual that is the source of FDI into China or the recipient of FDI from China may have strong incentives to facilitate the capital flight. The incentive could be an innocent desire to be helpful or involve a degree of corruption. Possibly the counter-party will simply perceive that such assistance is necessary in order to ensure a successful FDI relationship. The impact of this reduction in transaction cost associated with purchasing foreign assets, $C_f$, can be seen in Figure 3. Participation as either the source or recipient of FDI will reduce the transaction costs associated with purchasing foreign assets, $C_f$, resulting in an upward shift in the expected real return of foreign assets. This will widen the range of maturities, $t_0t_1$, where foreign assets dominate both domestic money and equities.

If either inward or outward FDI facilitates capital flight then it is likely that there will be an hysteretic effect if such FDI decreases. In other words, while an increase in either inward or outward FDI tends to lead to increased capital flight by providing useful knowledge and contacts, a decrease in FDI may have little impact on capital flight since the information gained and contacts made will not immediately lose their usefulness to anyone planning capital flight.
VII. CONCLUSIONS

If the estimates are correct then capital flight over the last three years has grown from roughly $162 billion (plus or minus $55 billion) in 2010 to about $132 billion (plus or minus $60 billion) in 2011 before reaching approximately $348 billion (plus or minus $60 billion) in 2012. Assuming that net earnings of this flight capital was just sufficient to offset dollar inflation then the accumulated PRC capital flight since 1984 is approximately $2.3 trillion ($2,300 billion) about $80 billion a year with over 50% of this total occurring in the most recent six years.

Since the imposition of capital controls in 1998, the bulk of this capital flight has taken the form of mis-invoicing of exports and imports. Since China has experienced an appreciating currency, improved economic and political stability, and no relaxation of capital controls; the recent sharp rise in capital flight does not appear to be caused by fear of discrete losses. An alternative explanation is that the surge in capital flight is caused by corruption and an unusual pattern of transaction costs associated with foreign investment.

Capital flight of $350 billion a year is probably unsustainable especially if it represents the illegal fruits of corruption, In addition to the adverse economic effects of reduced government revenues and slower economic growth, there will most likely be a political impact as well. The political legitimacy of the Chinese government is a function of ideology, economic growth, and nationalism. The massive corruption that appears to be fueling capital flight over the last half decade is rapidly undermining the ideology - born in the era of “high” communism – that the state exists to serve the Chinese people. Combined with slower economic growth and rising income inequality, the loss of legitimacy brought about by corruption driven capital flight
may force the authorities to attempt to maintain their legitimacy by fostering nationalism. This can be regionally destabilizing.

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Figure 1: Basic Capital Flight Estimates
Figure 2: Adjusted Capital Flight Measures

![Graph showing adjusted capital flight measures](image-url)
Figure 3: Transaction Costs as a Determinate of Capital Flight

- Domestic Currency
- Foreign Bonds
- Domestic Equity
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<th>Table 2A</th>
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<td>Measures of Capital Flight</td>
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<td>A. Balance of Payments Measure</td>
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<td>Cuddington Method</td>
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<td>$1,175</td>
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<td>B. Residual Measures</td>
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<td>World Bank Method</td>
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<td>C. Adjusted Banking System</td>
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<td>Foreign Assets</td>
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<td>D. Mis-invoicing Adjustment</td>
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<td>D.2 PRC and Hong Kong</td>
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<td>E. Bank Debt Adjustment</td>
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<td>K.1 Balance of Payments</td>
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<td>M. Residual (PRC only)</td>
</tr>
</tbody>
</table>