Could the Global Financial Crisis Have Been Avoided?

Lawrence J. Lau, Ph. D.
President and Ralph and Claire Landau Professor of Economics
The Chinese University of Hong Kong
and
Kwoh-Ting Li Professor in Economic Development, Emeritus, Stanford University

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Phone: (852) 2609-8600; Fax: (852) 2603-5230
Email: LAWRENCELAU@CUHK.EDU.HK; WebPages: HTTP://WWW.CUHK.EDU.HK/VC

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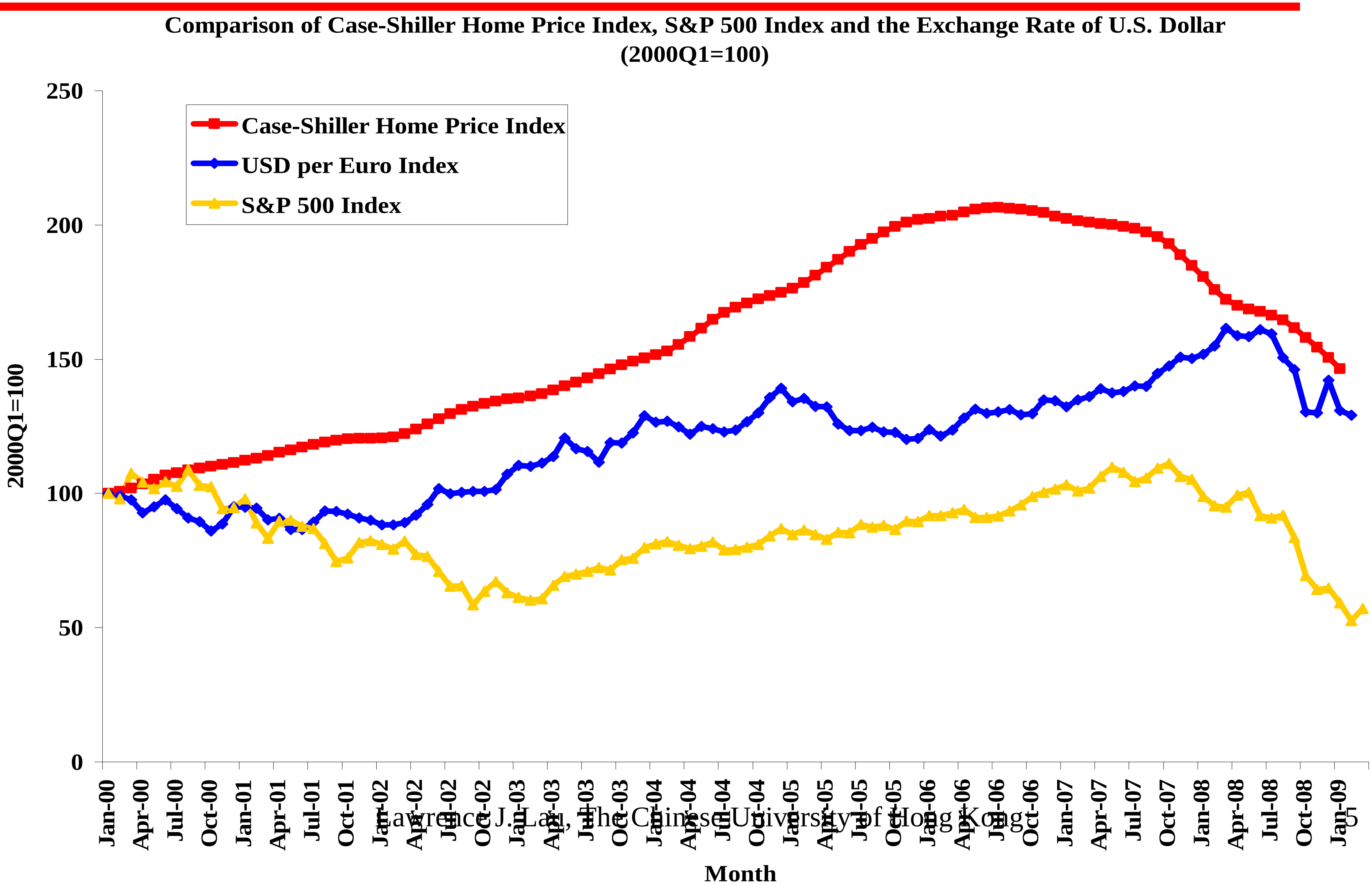
Introduction

- Globalization of international trade and capital flows has made the world economy much more inter-connected. The co-variance among the different economies has increased. This means that spillover of economic disturbances and contagion are much more likely.
- What cased the global financial crisis? Prof. Paul Krugman suggested three factors:
  - Regulatory failure
  - Easy money (low interest rate and global imbalances)
  - Complacency
- I generally agree with Prof. Krugman, but I also want to emphasize the central roles of moral hazard and failure in risk management, and above all, of lessons unlearned from previous financial crises.
- Irrational exuberance is not uncommon; Economic and financial bubbles do occur from time to time, abetted by the heavy use of leverage. Bubbles can be contained and restrained by the suitable and timely restriction of the use of leverage.

What Caused the Global Financial Crisis? Easy Money

- The real rate of interest in the U.S. has been negative for quite some time. Low and often negative real rates of interest encouraged borrowing and the use of leverage and fueled the bubble in asset prices, especially real estate prices, in the U.S. and elsewhere.
- While it is possible that global imbalances also had a role in enabling the recent asset price bubbles that ultimately caused the global financial crisis, I shall show below that the contribution from the Chinese trade surplus was minimal.
- In fact, China itself has been a victim of the global liquidity with speculative hot money flooding into China beginning in 2003. The inflow of speculative hot money into China has probably accounted for approximately half of the total increase in foreign exchange reserves in recent years.

Case-Shiller U.S. Home Price Index, US$-Euro Exchange Rate & the S&P 500 Index



What Caused the Global Financial Crisis? Regulatory Failure

- The sub-prime mortgage loan crisis was possible because of the failure of the regulators to control moral hazard.
- Originating lenders made residential mortgage loans to borrowers with no capacity of repayment, based only on a vague hope of appreciation of the property in the future.
- They sold these mortgage loans off through securitization with no residual liability. Thus, they had no incentive to make sure that the loans would perform—that the borrower was credit-worthy and that the collateral was worth its value. There was no attempt to check the borrower's credit worthiness or the property's real value, since the mortgage loans would be sold without recourse to the originating lender.

What Caused the Global Financial Crisis? Regulatory Failure

- If the originating lending institution were required to retain some residual liability, e.g., a mandatory buy-back if the loan does not perform during the first three years of the loan, or a holdback of 15 percent of the value of the mortgage loan for three years, contingent on loan performance, or simply required to hold 10 percent of the mortgage loan itself, it would have been much more careful and the sub-prime mortgage loan crisis could have been averted.
- Securitisation without any residual liability encourages moral hazard on the part of the originating lenders. Ultimately the purchasers of these sub-prime mortgage-backed securities could only rely on the ratings given by the credit rating agencies on these securities. But the credit rating agencies also had no liabilities for mis-rating, but were compensated for providing ratings satisfactory to the issuers of these securities, creating yet another potential moral hazard. We shall also return to this question if time permits.

What Caused the Global Financial Crisis? Regulatory Failure

- Off-balance-sheet activities conducted by Enron Corporation were the principal cause of its failure. It ultimately had to recognize on its balance sheet all the losses incurred in its off-balance-sheet activities. The venerable auditing firm Arthur Andersen was dragged down along with Enron.
- But off-balance-sheet activities have continued to be allowed—Sarbanes-Oxley Act, despite its many costly and intrusive provisions on corporate governance and auditing, did not address this most important issue at all.
- Many of the world's largest banks, Citicorp, HSBC, UBS, etc. suffered huge losses because of their off-balance-sheet activities in the form of "special investment vehicles (SIVs)" or "structured investment vehicles" and have had to take these off-balance-sheet activities onto their balance sheets and write off hundreds of billions (US$) of bad assets.

What Caused the Global Financial Crisis? Regulatory Failure

- If the Securities and Exchange Commission had learned its lesson and forbidden publicly listed companies to engage in off-balance-sheet activities, all of these losses could have been avoided, and the securitised sub-prime mortgage loans would not have found such a ready group of purchasers.
- Moreover, a great deal of the so-called shadow banking activities had the implicit and explicit support of the major banks but were not regulated nor reflected as potential or contingent liabilities of the banks.
- The regulators did not learn their lessons and allowed the same mistakes to be repeated in an even bigger way.

What Caused the Global Financial Crisis? Regulatory Failure

- In crisis after crisis, it has always been the high leverage that causes the domino effect. A badly managed but highly leveraged firm collapses, bringing down with it all of its creditors, contractors, suppliers, and counter-parties in its financial derivative transactions, in addition to its own shareholders.
- Long Term Capital Management (LTCM), a hedge fund, failed in 1998 in part because of its high leverage—at the time it had capital of US$4 billion but assets of US$100 billion and even greater potential liabilities.
- Bear-Stearns and Lehman Brothers had leverage of between 30 and 50 to 1 when they failed.

What Caused the Global Financial Crisis? Regulatory Failure

- High leverage not only makes the firms themselves failure-prone, as an ever so slightly adverse development can make them insolvent (negative net worth), but also greatly magnifies the spillover effects when they do fail. They bring down otherwise well managed banks and firms that do business with them.
- The high leverage also in turn increases the risk of other firms having them as "counter-parties."
- The U.S. regulators (Securities and Exchange Commission) decided to allow the high leverage in the securities firms some time in the early 2000s.

What Caused the Global Financial Crisis? Regulatory Failure

- Credit default swaps (CDSs) are basically insurance contracts. In principle, they insure the bonds, the outstanding obligations, of a firm.
- However, the insurance companies that sold the CDSs lost sight of the fact that they were selling insurance. They thought they were just taking bets.
- A fundamental principle of insurance is that the insured must have an insurable interest. Otherwise there would be moral hazard. Thus, for example, it is reasonable for someone who owns Lehman Brother bonds, or who is a contractor or supplier owed money by Lehman Brothers, to purchase a CDS from AIG for the amount outstanding. But it is not reasonable for anyone else with no direct exposure to Lehman Brothers, especially if this person has the power to influence the outcome, to purchase CDSs on Lehman Brothers.

What Caused the Global Financial Crisis? Regulatory Failure

- It is like a person buying insurance on someone else's house and setting fire to it and collecting the insurance. Or a pirate buying insurance on someone else's ship from Lloyds and then sinking it to collect the insurance. This is the well known problem of moral hazard in insurance that every insurance company should know.
- But AIG sold many times more CDSs on Lehman Brothers than Lehman Brothers had bonds outstanding (reportedly more than ten times). Many purchasers were simply gambling on a Lehman Brothers failure. It would have been fine if these purchasers had no influence on whether Lehman would go under or not. However, many of the purchasers had the power to force Lehman under, for example, by massively shorting its stocks or bonds, so that it would be effectively prevented from accessing the capital and credit markets.

What Caused the Global Financial Crisis? Regulatory Failure

- The total amount of CDSs outstanding has been estimated to be approximately US$50 trillion, relative to the total amount of the underlying bonds outstanding of only one-tenth of US$50 trillion. In other words, the insurance companies collectively sold US$50 trillion worth of insurance on bonds that are only worth US$5 trillion.
- In retrospect, even considered as insurance, the CDSs on Lehman Brothers were not priced correctly. The price of the CDSs did not reflect adequately the probability of its failure, given its high degree of leverage, and moreover did not take into account adverse selection—people buy insurance only because they expect the firm to fail. Furthermore, adequate insurance reserves were not established. That is why AIG is in so much trouble today.

What Caused the Global Financial Crisis? Regulatory Failure

- It does not help that the rating agencies did not fulfill their function. One of the problems is that they are paid by the firm they are rating, but if the firm does not like the rating it receives it does not have to pay (thus moral hazard once again). The ratings can therefore be worse than worthless. They mislead potential investors and give them a false sense of security.
- I have often argued that rating agencies are not very useful ex ante; because if they are really good at discriminating between the good and the bad securities as to their true riskiness, they should be in the asset management business investing real money for clients and making a great deal more money for themselves in the process and not in the ratings business.

What Caused the Global Financial Crisis? Regulatory Failure

- In as early as 2007 I noticed that the interest rate spread between junk bonds (and sub-prime mortgage backed securities) and U.S. Treasury was less than 100 basis points. I thought that was not possible because no matter how clever one is in financial engineering, someone has to wind up with the bad risks. The rating agencies might have contributed to this super-thin risk premium on junk bonds.

What Caused the Global Financial Crisis? Regulatory Failure

- The credit rating agencies need to be regulated. In particular, the moral hazard can be greatly reduced if the firms being rated are not permitted to “shop” the rating, which results from the firm being rated having a choice whether to pay the firm doing the rating.
- In the past, ratings are most typically used by asset managers to defend themselves when things turn sour—”The securities were rated AAA. What could I have done?”
- One may need to develop a penalty regime for credit rating agencies so that they will have to pay for their over-rating mistakes (just like the auditors).

The Role of the Global Imbalances

- The global reliance on the U.S. Dollar for international transactions
- The case of China
- Alternative clearing and settlement mechanisms
- A market for local-currency bonds issued by developing economies

The Global Reliance on the U.S. Dollar for International Transactions

- The central banks and monetary authorities of many countries hold U.S. Dollars and U.S.$-denominated assets as part of their foreign exchange reserves because the U.S. Dollar is widely accepted. Two countries trading with each other may not trust each other's currency, so that unless the bilateral trade is completely balanced and a straight barter is possible, they will need to use the currency of a third country which both of them trust. This currency often turns out to be the US$.
- The majority of world trade today is denominated in US$, including the trade in oil.
- Thus, US$ reserves held by these central banks and monetary authorities serve as the transaction balances for international trade and investment between countries which do not wish to accept and/or to hold each other's own currencies.

The Global Reliance on the U.S. Dollar for International Transactions

- A normal way for a country to be able to acquire net US$ balances is for it to run a trade surplus vis-a-vis the United States. Thus, it will receive more U.S. dollars for its exports to the U.S. than it will need to pay for its imports from the U.S. The net excess U.S. dollars will then be sold by the exporter to its central bank for local currency. The central bank will then retain the U.S. dollars in its foreign exchange reserves. It can, if it so wishes, purchase U.S. Treasury securities or other U.S.$-denominated assets or other assets. To the extent that it purchases U.S. Treasury securities it will become a creditor of the U.S.
- The United States, on its part, will have been able to import more than it exports, paying for the difference with U.S. Dollars and eventually with U.S. Treasury securities.
- As international trade increases, the need for U.S. Dollar balances for transactions purposes rises. It has been estimated that the amount of transactions balances needed by a country can be six months or more of the value of its imports.

The Global Reliance on the U.S. Dollar for International Transactions

- The U.S.$ balances held by the foreign countries, whether in central banks or in public and private firms, thus serve a useful function in making international trade and capital transactions possible. These balances have the same relationship to international economic transactions as the domestic money supply to domestic economic transactions.
- For its contribution, the U.S. has what is called seigneurage, that is, it can enjoy the benefit of being the issuer of the "international money," being the banker to the world's trading nations. It can purchase goods and services internationally using only paper money or paper bonds which it can print more or less at will; in other words, it can purchase with "credit".

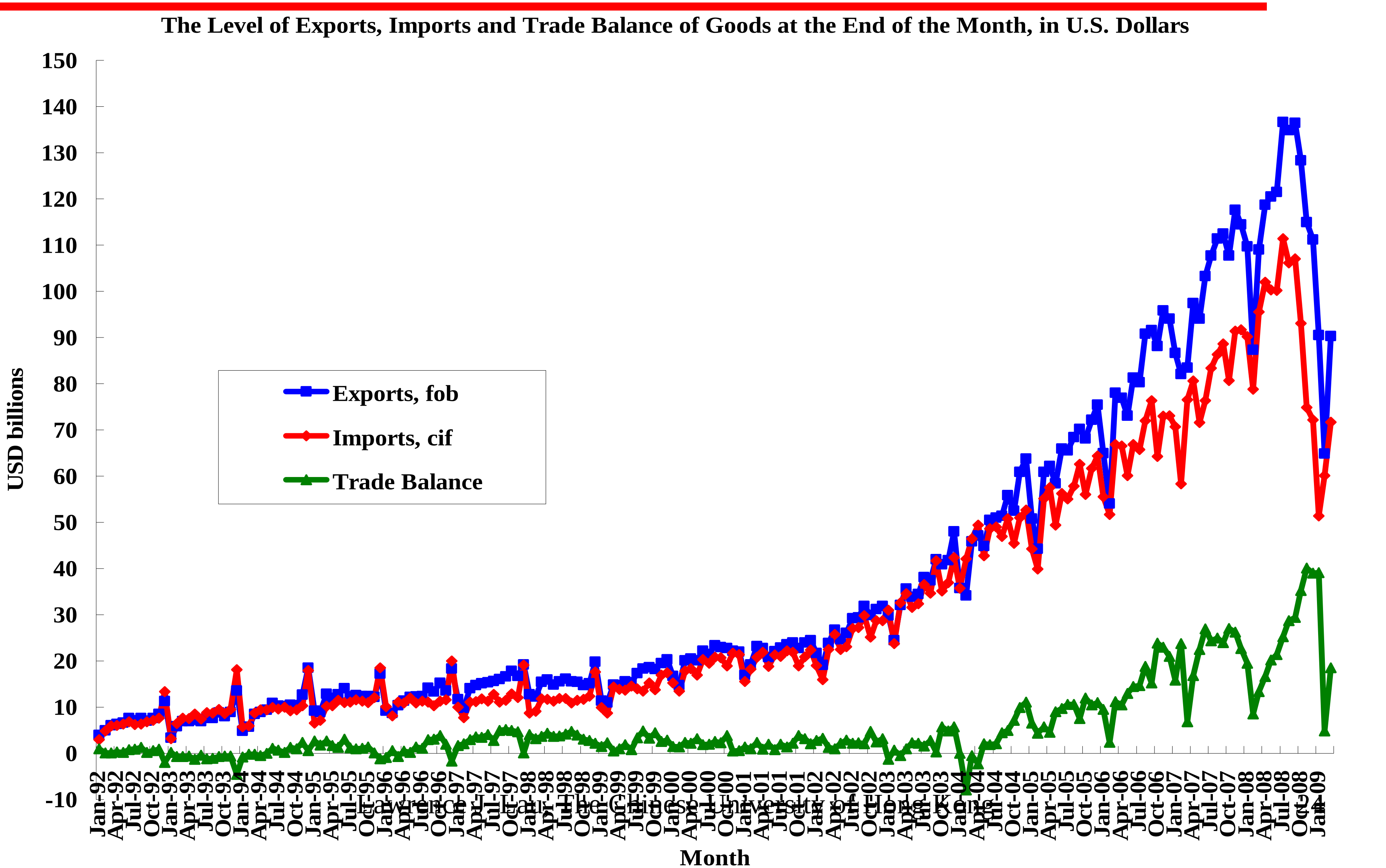
The Global Reliance on the U.S. Dollar for International Transactions

- An obvious question is what happens if the United States stops running a trade deficit and even begins to run a trade surplus. The aggregate US$ balances in the world will not grow but may start shrinking. But this may constrain the growth of world trade, unless there is an alternative currency to enable international transactions or an alternative method of settlement of net balances is found. This is a question that needs to be addressed within the next couple of years.

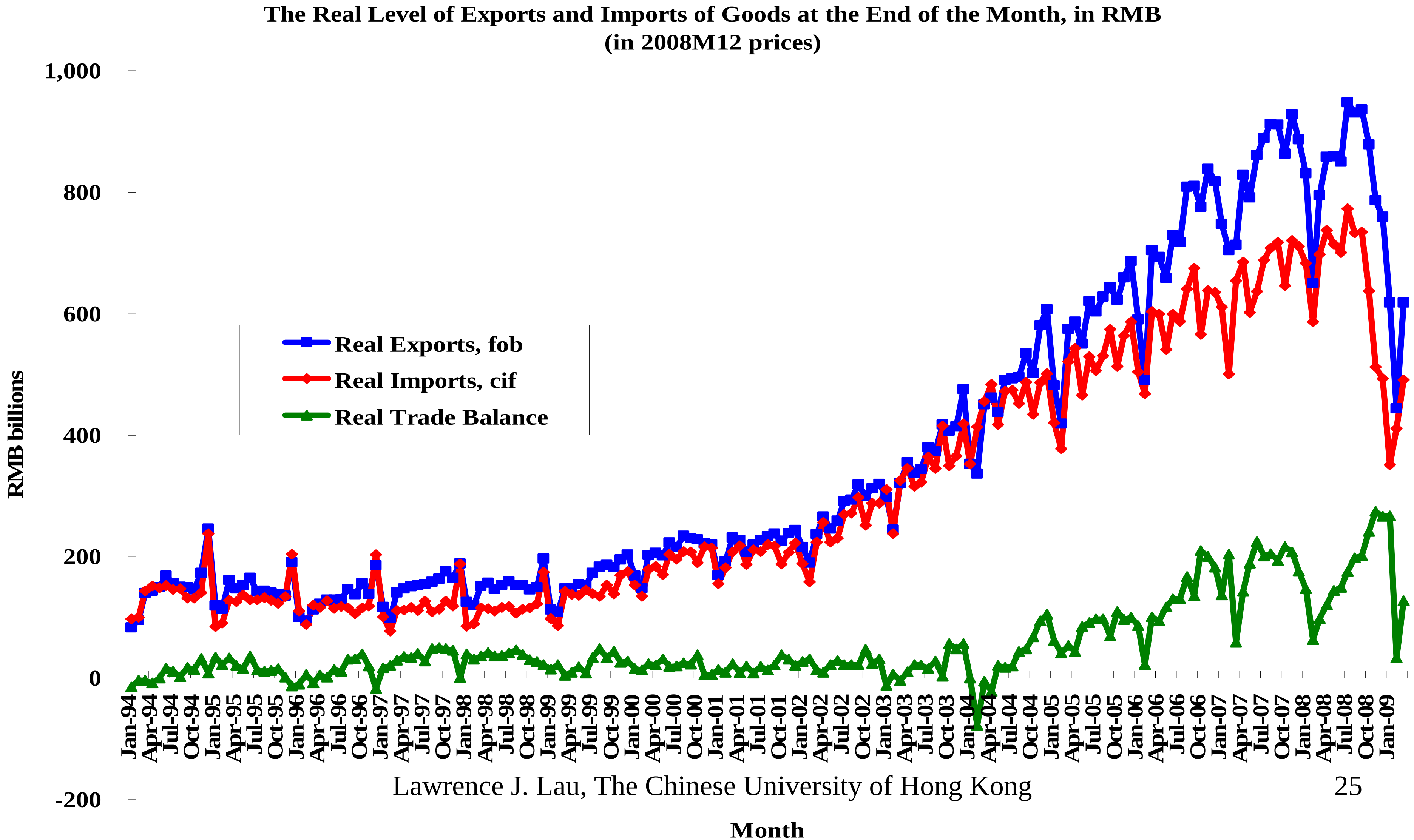
The Case of China

- China did not begin to have a significant trade surplus vis-a-vis the world until 2005.
- The Case-Shiller U.S. Home Price Index began rising in 2000 and reached a peak in 2006. There was a surge in total U.S. mortgage originations beginning in 2001, and in sub-prime (and Alt-A, also sub-standard) mortgage loans in particular beginning in 2003, reaching a peak in 2006.
- Thus, the Chinese trade surplus vis-a-vis the world could not possibly have been the source of the excess global liquidity back in 2003 or earlier, and hence the growth of the sub-prime and other sub-standard mortgage loans in the U.S. and the subsequent bubble in the U.S. residential housing market.
- The recent global imbalances are probably due to economies with chronic large trade surpluses such as Japan and the oil-exporting countries of the Middle East.

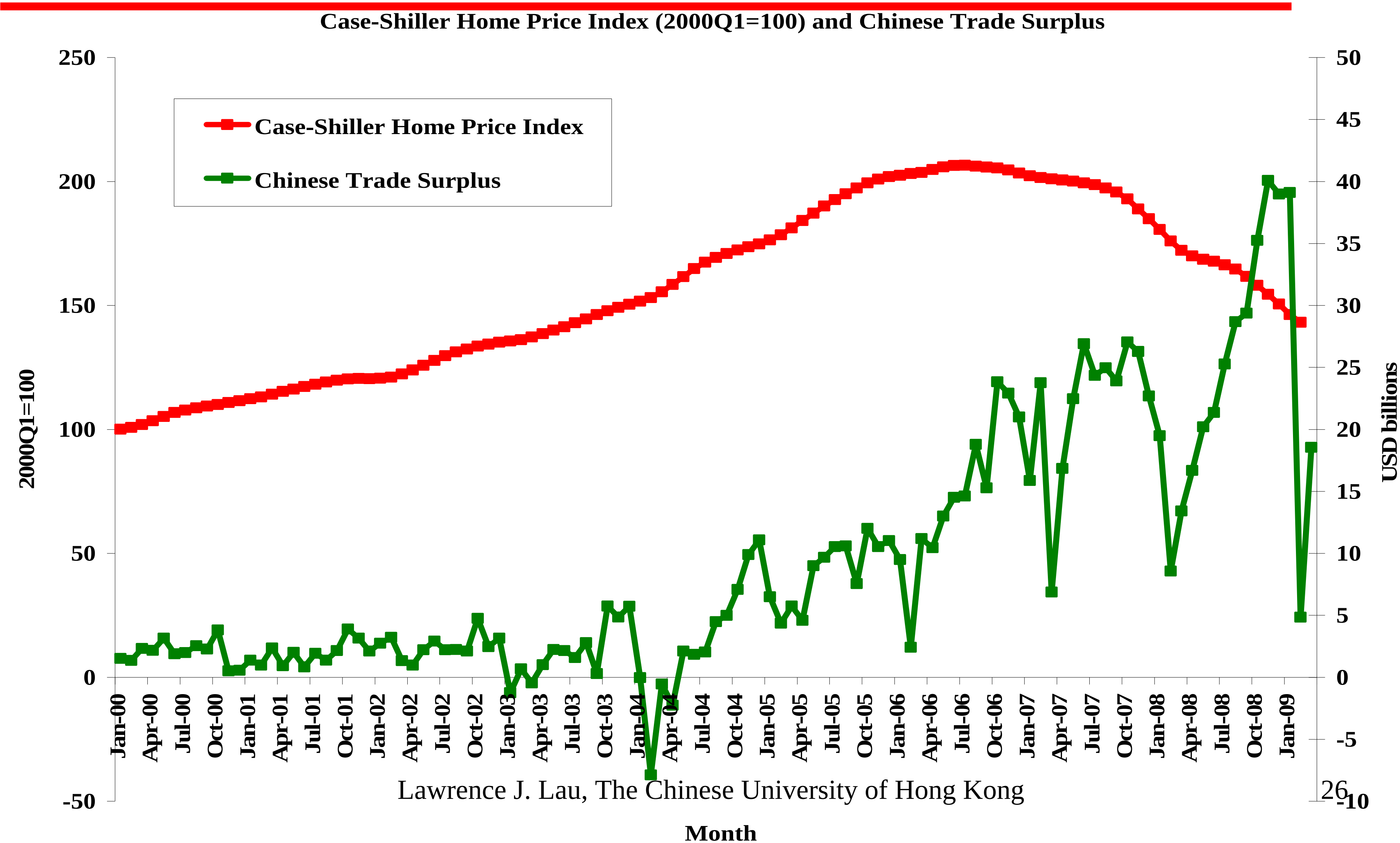
Chinese Monthly Exports, Imports and Trade Balance, US$



Chinese Monthly Real Exports, Imports and Trade Surplus (2008M12 prices)

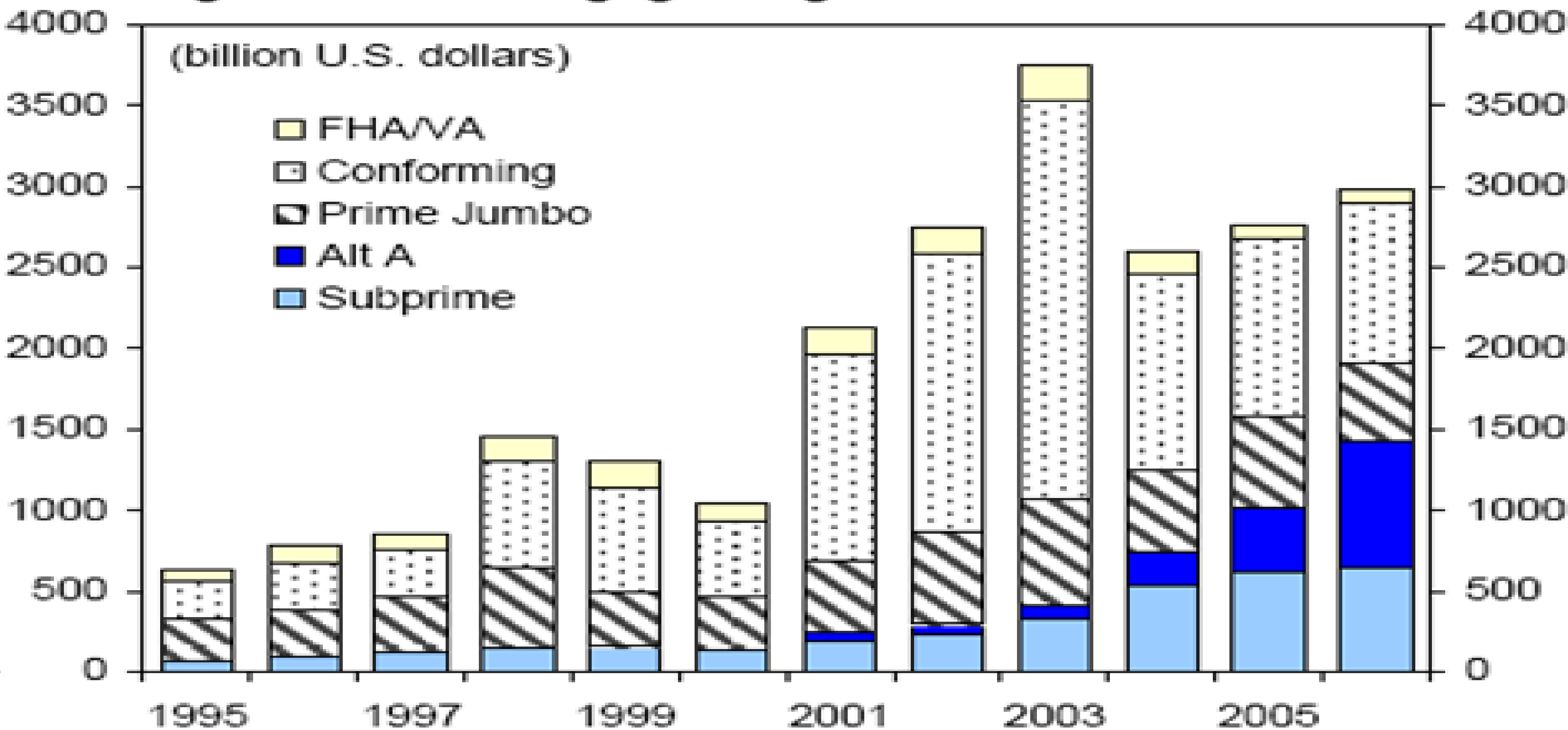


Case-Shiller U.S. Home Price Index and the Chinese Trade Surplus



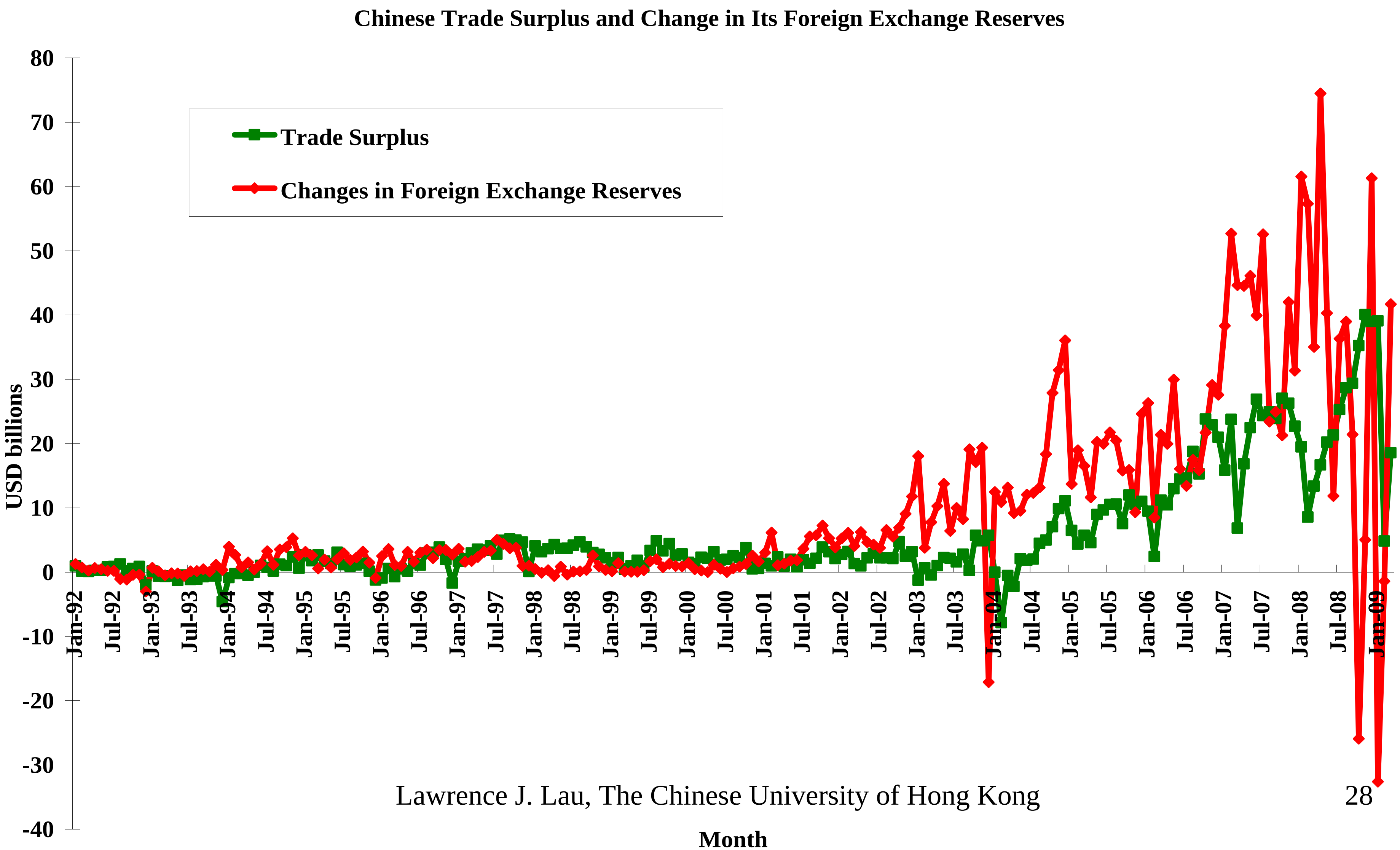
Growth in U.S. Mortgage Originations: from John Kiff and Paul Mills (2007)

Figure 3. All Mortgage Originations

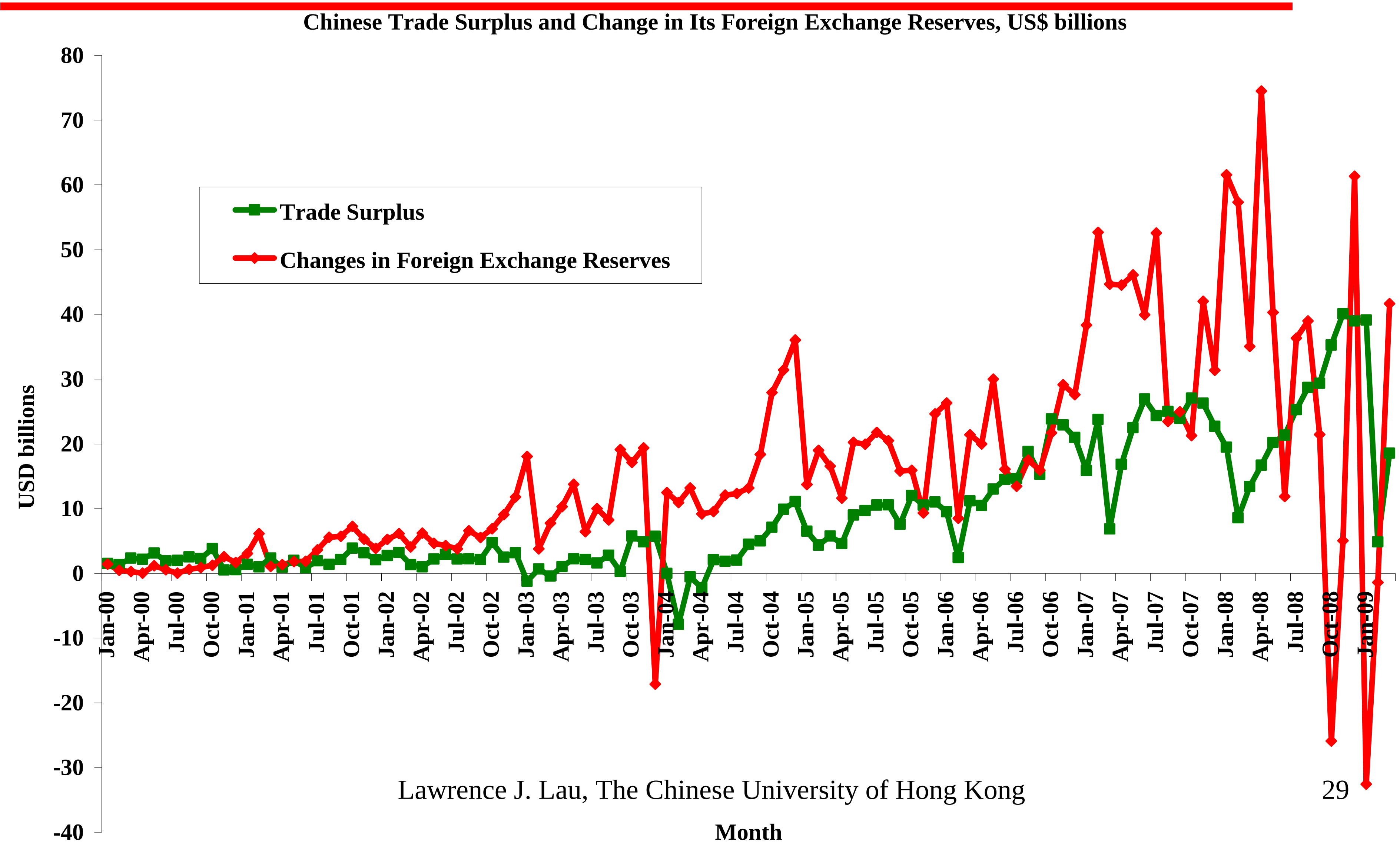


Source: Inside Mortgage Finance.

Chinese Trade Surplus and Change in Its Foreign Exchange Reserves, US$ billions



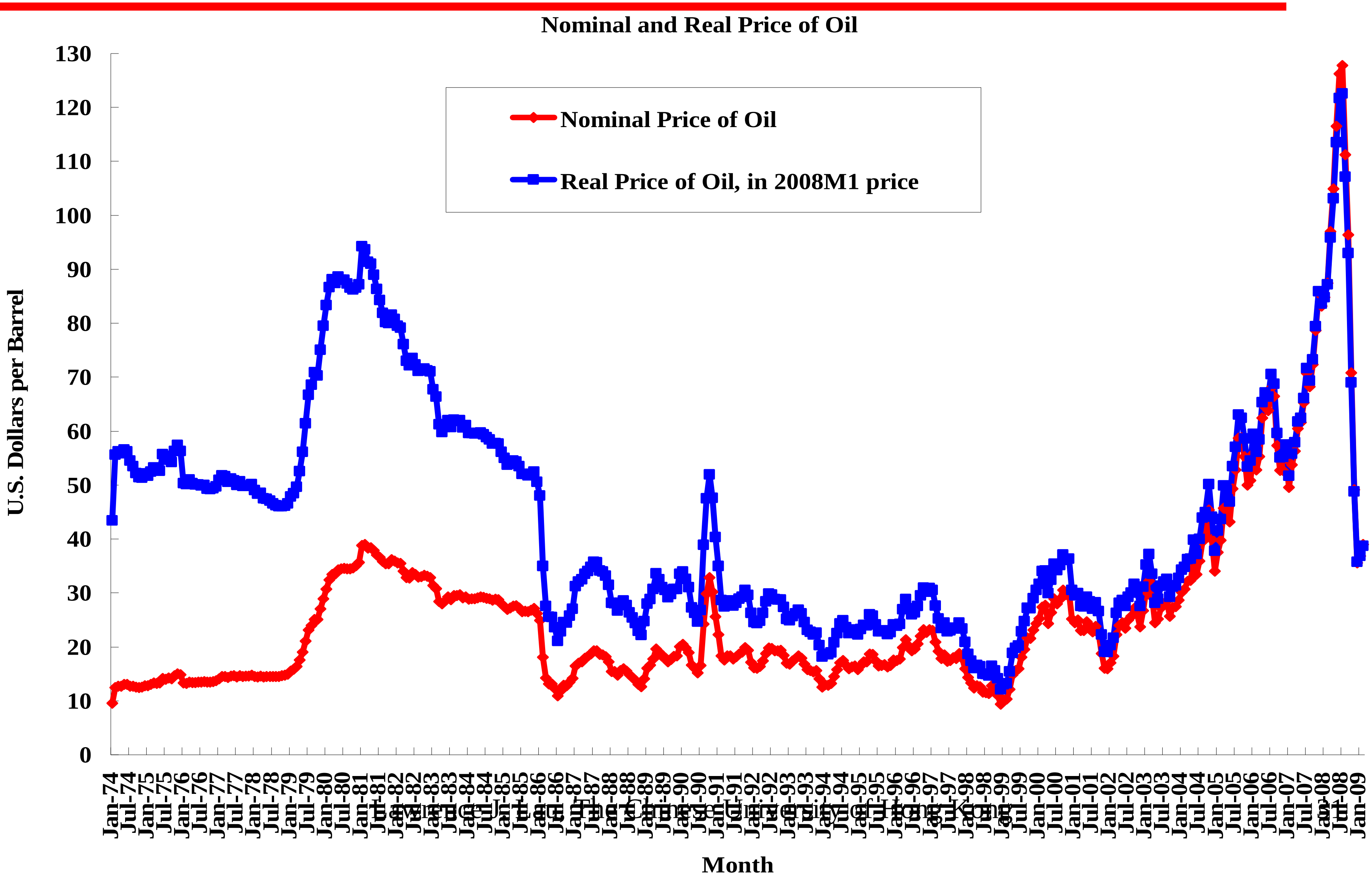
Chinese Trade Surplus and Change in Its Foreign Exchange Reserves, US$ billions



The World Price of Oil

- The world price of oil began rising sharply in 2003 but has recently begun to return to more normal levels. The world price of oil, in real terms, is not significantly different from the price of oil prevailing in the early 1980s. It has the room to fall further to about US$40 a barrel in 2008 prices which was the upper range of the price of oil between 1987 and 2004.

The Nominal and Real World Prices of Oil (2008 prices)



Alternative Clearing and Settlement Mechanisms

- There is also the important question of the settlement of international trade and other current account transactions. Global trade is currently mostly denominated and settled in U. S. dollars. That is what has given rise to the huge foreign demand for U. S. dollar balances. Most countries, other than the U.S. and outside of the Euro Zone, rely on the U.S.$ to conduct transactions not only with the U.S. but amongst themselves. The U. S. dollar reserves held by central banks and monetary authorities around the world provide in part the liquidity and transactions balances necessary to support the growth of their respective international trade and transactions.
- The recent scarcity of credit in U. S. dollars and the expected decline in the U.S. trade deficit would reduce the supply of U. S. dollars to the rest of the world in the future and ought to add impetus to the consideration of alternative ways to settle trade and other current account international transactions.

Alternative Clearing and Settlement Mechanisms

- Another consideration is the fact that the U.S. Dollar and the U.S. Treasury securities have always been considered "riskless" assets. While they are still "riskless" from the point of view of U.S. dollar-based investors and consumers, they are no longer completely riskless for investors and consumers who are not U.S. dollar-based. In what currencies should a country's foreign exchange reserves be held is a question that faces all central bankers. And that is also related to the question of which currencies to use in the settlement of international transactions.

Alternative Clearing and Settlement Mechanisms

- One obvious alternative would be to allow the importer of any country or region to pay for the imports in its own currency, provided that the exporter, or the exporter's country's central bank, is willing to accept and to hold the currency. For example, a Chinese exporter may be willing to accept payment in Malaysian ringgit for its exports to Malaysia, as long as he knows he can sell it to the People's Bank of China, China's central bank or to someone who needs Malaysian ringgit such as a Chinese importer importing from Malaysia. No U. S. dollar balances would then be necessary for such a transaction.
- To facilitate such a transaction, it would be helpful if the People's Bank of China could allow the Chinese exporter to sell forward the Malaysian ringgit to it at the time a firm export order is received. These forward sales can be restricted to Chinese exporters of goods and services to Malaysia that are invoiced in Malaysian ringgit and only up to the value of the individual export orders.

Alternative Clearing and Settlement Mechanisms

- Of course, one should also allow an importer to pay for the imports in the currency of the exporter or in its own currency. For example a Chinese importer may pay a Thai exporter for imports from Thailand in Thai Baht, or in Renminbi, or in US$, so long as they can agree between them.
- All of this can and should be done voluntarily, subject to mutual agreement between the importer and the exporter, and they may well agree to continue to use the U.S. Dollar. No change in the existing system is therefore required, except for the central banks in the respective countries being willing to buy and sell these additional foreign currencies. It is also not necessary for the central banks to buy and sell all currencies. There can simply be an eligible list.

Alternative Clearing and Settlement Mechanisms

- In our example, the People's Bank of China may decide to hold the Malaysian ringgit as part of its foreign exchange reserves (after netting out the payments for imports from Malaysia denominated in ringgit). Eventually, the central bank may wish to consider holding the ringgit in interest-bearing assets such as bonds issued by the Government of Malaysia, preferably indexed to Malaysian inflation to preserve the purchasing power of the central bank's ringgit-denominated assets.
- Thus, gradually, and on a voluntary basis, the use of currencies other than the US$ for international trade and other transactions will rise, thus easing the demand for US$ for transaction purposes, and hence the need for the U.S. to supply such liquidity by running large trade and current account deficits.

Alternative Clearing and Settlement Mechanisms

- The arrangement described above is not so different from what has been made possible by the Chiangmai accords and the bilateral swap agreements between many East Asian central banks and monetary authorities, except for the possibility of inflation-protection feature of the foreign-currency denominated bonds to be held as part of the foreign exchange reserves. However, given the historical rates of inflation in some of the developing economies in East Asia, the nominal rates of interest on straight, non-inflation-indexed bonds may have to be very high in order to attract buyers and holders.

Alternative Clearing and Settlement Mechanisms

- However, the issuance of inflation-protected bonds by the governments of developing economies has many advantages for these governments, among which is the possibility of borrowing abroad in its own currency. Foreign currency borrowing by developing countries and regions frequently leads to financial crises because of currency mismatch (revenue in local currency but liabilities in foreign currency) which is often also accompanied by maturity mismatch (borrowing short-term overseas but lending long-term locally). Thus it is a great advantage to be able to issue bonds denominated in one's own currency rather than a foreign currency.
- Over time, the Renminbi can emerge as a currency that firms, households and central banks and monetary authorities in other East Asian economies are willing to hold both for transaction purposes and as a store of value, just like the Japanese Yen.

The Creation of a Market in Bonds Denominated in Local Currencies

- Traditionally, local currency government bonds have little appeal domestically within certain developing economies themselves because of the high rates of inflation. They also have little appeal internationally. The result is that almost all developing economies can only borrow in foreign currencies and not in their own local currencies. Sooner or later, the foreign lenders would like to get their money back and hence would not roll over the loans, and a currency crisis would then ensue. For example, this happens habitually in Latin America, which has a currency crisis every decade or so.
- If the local-currency government bonds are indexed to the local cost-of-living indexes, they will have appeal both domestically and internationally. The purchasers of the bonds will be assured that they will receive a real rate of return in the local currencies, regardless of the movements of the relative exchange rates. They will always be able to purchase the same real quantity of goods that they could have bought at the time that they first purchased the local currency bonds (plus interest).

The Creation of a Market in Bonds Denominated in Local Currencies

- For example, suppose inflation-protected bonds are issued by the Government of Malaysia. If the amount paid for the inflation-indexed bonds can purchase 20,000 tons of rubber today, the proceeds received from the bonds at maturity will still be sufficient to purchase 20,000 tons of rubber, plus interest, at that time, whatever happens to the exchange rate of the ringgit in the interim. Thus, the risk of value erosion to a foreign central bank for holding Malaysian ringgit-denominated bonds in its portfolio is greatly reduced.

The Creation of a Market in Bonds Denominated in Local Currencies

- Inflation-protected bonds can help developing economies overcome the problem of the “original sin”--that they cannot borrow in their own local currencies.
- These bonds can also be held by the local citizens, especially retirees, to preserve the purchasing power of their pensions and savings.
- They can be held by foreign central banks as part of their foreign exchange reserves, thus allowing them to diversify further the composition of their reserves and at the same time to preserve the underlying purchasing power.
- A country that issues inflation-protected government bonds has a built-in incentive to control inflation, and thus issuance of these bonds per se is an indicator of a credible commitment against high rates of local inflation.

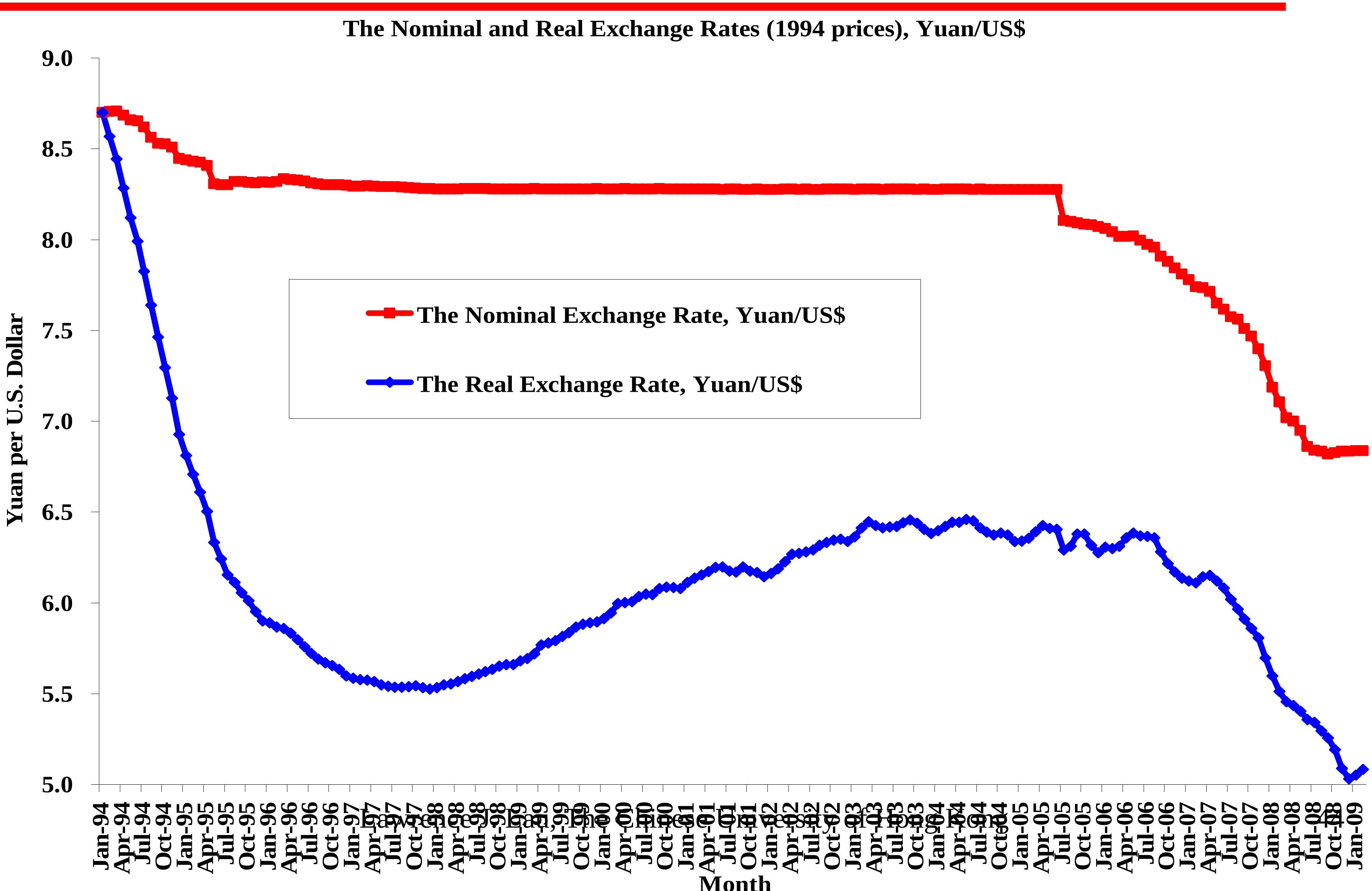
The Creation of a Market in Bonds Denominated in Local Currencies

- A country that issues inflation-protected bonds will find that its currency will be accepted more widely. This is because, in part, those who receive their currency always has the option of using it to purchase inflation-protected bonds in the same currency, thereby protecting its purchasing power over time; and also because, in part, the issuance of inflation-protected bonds per se is perceived as a commitment not to let inflation run away.
- Thus, with the introduction of inflation-protected, or equivalently, cost-of-living indexed bonds, more and more currencies can potentially become reserve currencies and there is no need to rely on only a few major currencies. Of course, not all countries will have the required credibility to issue inflation-protected bonds.
- In the intermediate to long run, issuing bonds in one's own currency is preferred to issuing bonds in a foreign currency, be it US$, Euro, Yen or even Renminbi denominated because the exchange rate is not directly affected by whether foreign investors are willing to buy and/or hold on the bonds if they are local currency-denominated.

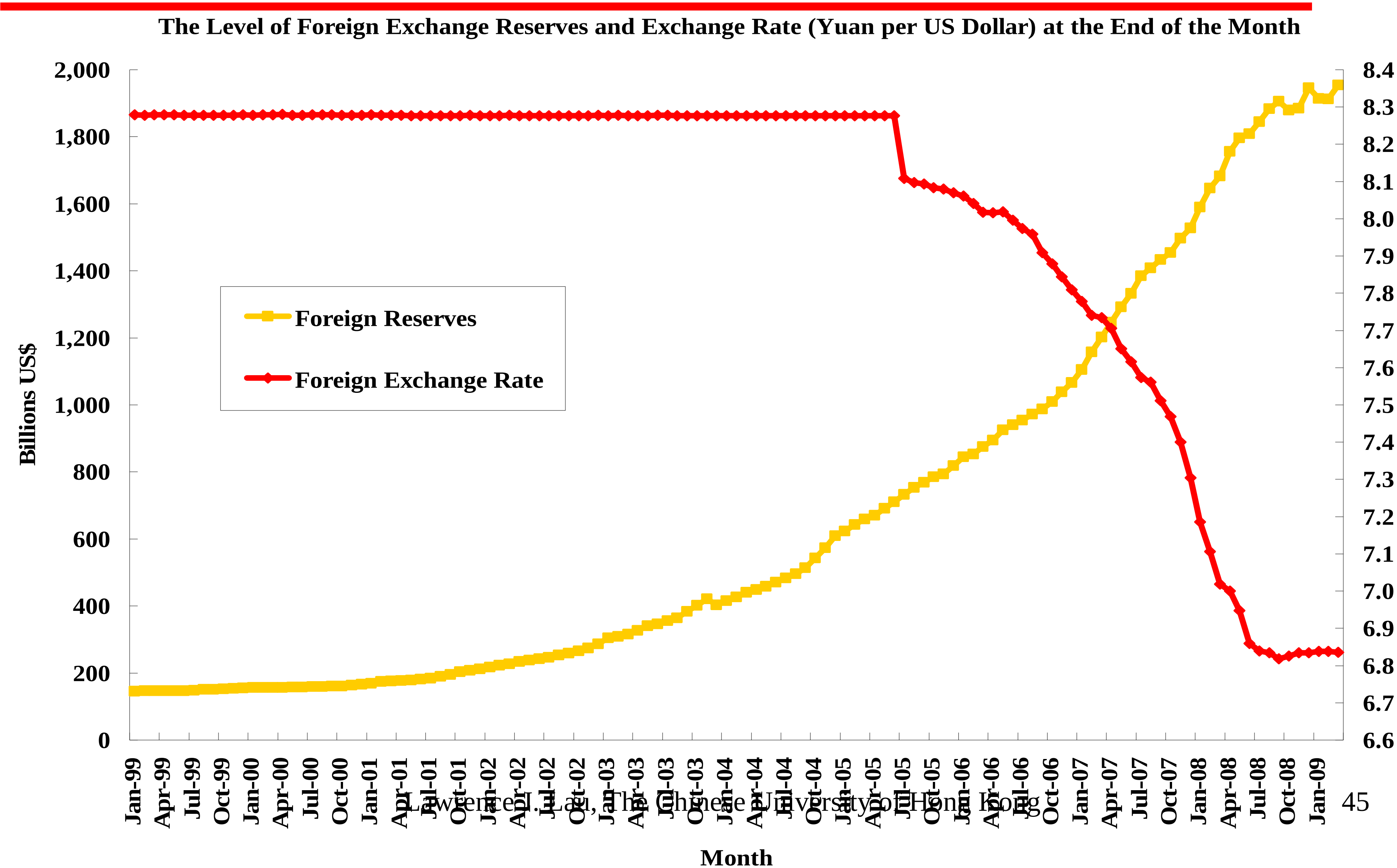
The Renminbi-U.S.$ Exchange Rate

- The near-term expectation is that the Renminbi—US$ exchange rate will remain relatively stable—neither appreciating nor devaluing.
- Currently, everyone in the world has an interest in trying to restore stability in the markets—the fewer changes, the better.
- A revaluation of the Renminbi would require the selling of US$ assets (including bonds and notes) and the buying of Renminbi by the People's Bank of China—such actions will help neither the U.S. nor China.
- However, as the Renminbi becomes much more widely acceptable, especially in East Asian economies, it may gradually supplement the U.S. Dollar as the currency of denomination in international trade in East Asia.

The Nominal and Real Yuan/US$ Exchange Rates



Foreign Exchange Reserves and the Yuan/US$ Exchange Rate



Complacency

- Prof. Paul Krugman mentioned complacency on the part of the regulator, for example, the U.S. Federal Reserve Board, which takes the position that whatever happens it will be able to handle and clean up afterwards if necessary and that there is no need for preventive measures.
- But there is also complacency on the part of the regulated, that whatever goes wrong, the regulator will be able to put it right. Federal Reserve Board Chairman Alan Greenspan's past success led to moral hazard on the part of everyone else, relying on and trusting the Chairman to be able to solve whatever problem that may arise.

Should Lehman Brothers have been saved?

- In retrospect, perhaps Lehman Brothers (but not its shareholders) should have been saved. This would have averted a crisis at the other major financial institutions, including the AIG Group.
- Unfortunately, Lehman Brothers was indeed too big to have been allowed to fail.
- The regulators should try to prevent financial institutions from becoming "too big to fail," by limiting the use of leverage.
- When an institution becomes "too big to fail," it should be nationalized outright or at least very tightly regulated, because otherwise there will be enormous moral hazard—the management of the institution may take huge risks knowing that it will have to be rescued.

Concluding Remarks

- The global financial crisis could have been averted had the regulators been more alert. But it is too late now.
- Going forward, regulations should be strengthened so that more hazard can be more adequately controlled.
- It is not the Chinese trade surplus per se that caused the global imbalances, leading ultimately to the global financial crisis, but multiple regulatory failure in the United States and elsewhere.