United States-China External Imbalance and the Global Financial Crisis¹

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Abstract

This paper advances an alternative explanation of the large external imbalance between the United States and China, and its linkages to the current global financial crisis. We show that US current account deficits dated back long before the emergence of China’s recent large trade surpluses, with China accounting at its peak for at most one-third of this deficit. The relative rise in China’s savings in recent years can be attributed to an increase in its corporate savings, a trend which reflects distortions arising from the transition process from a planned to a market economy. These distortions exacerbate China’s income inequality, causing domestic consumption to remain a small share of GDP. Large recent current account deficits in the United States, on the other hand, can be attributed to public sector dissavings and perverse incentives generated by housing and equity bubbles, made possible by loose monetary policy and by “innovative” financial derivatives arising from the financial deregulation in the early 1980s. The paper shows that short run measures are unlikely to fully address these external imbalances. Both countries require long run, structural measures to resolve the underlying problems and to restore a sustainable foundation for growth.

1. Introduction

The global imbalances had received much attention before the current global financial crisis erupted in 2008. In a testimony before the United States Congress, C. Fred Bergsten (2007) stated: “The global imbalances probably represent the single largest current threat to the

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continued growth and stability of the US and world economies.” Throughout the crisis, there have been claims that this deep, and most severe global recession since the Great Depression, was caused in part or wholly, by the global imbalances, especially the imbalance between the United States and China. Some researchers, such as Paul Krugman (2009, 2010), argued that the undervaluation of the Renminbi (RMB) caused the large US trade deficit and that the consequent Chinese purchase of US Treasury bonds lowered the interest rate and caused the real estate and equity bubbles in the United States, which then led to the financial crisis. Others, such as Goldstein (2010), argued that a revaluation of the RMB to rebalance the US and China’s trade is also considered a prerequisite for a sustained global recovery. At the Pittsburgh summit in September 2009, the G20 leaders noted their responsibility to ensure “sound macroeconomic policies that serve long term economic objectives and help avoid unsustainable global imbalances.”

This paper advances a different explanation of the United States-China external imbalance and its linkage to the global crisis. We first show that the US current account deficits dated back long before the emergence of China’s trade surpluses, and that even at its peak, China accounted for no more than one-third of the US current account deficit. Second, the causes of the current global financial crisis are manifold, but the RMB was not the main cause. Third, the paper argues that the United States-China imbalance can only be resolved through structural reforms on both sides.

We attribute the relative rise in China’s savings in recent years to the increase in its corporate sector savings. This trend is the result of the transition process from a planned to a market economy that left distortions in the financial sector, monopolies in key industries such as telecommunications and finance, and led to under-taxation in the resource sector. These distortions exacerbate the income inequality in China causing domestic consumption to remain a small share of GDP. The large current account deficits in recent years in the United States, on the other hand, can be attributed to the perverse incentives generated by the housing and equity bubbles and public sector dissavings in the United States. Financial deregulation in the early 1980s that paved the way to the development of “innovative” financial derivatives and loose monetary policy in the first half of the past decade can explain most of the surge in consumption and the fall in US national savings. These factors together could explain most of the imbalance
between the United States and China. Since economic distortions in both the United States and China represent a significant share of the sudden increase in this imbalance, measures should be taken to address them. However, short run remedies such as a revaluation of the RMB vis-à-vis the US dollar and other major currencies alone are not sufficient to work since these measures will not address the underlying problems in both countries. Long run, structural measures are needed to reduce the imbalances and solidify the basis for a sustained global economic recovery.

The paper is organized as follows. In section 2, we will review the evolution of global imbalances and analyze the extent to which the United States-China imbalance in trade, current, and capital accounts contributed to the global financial crisis as claimed by some observers. Section 3 will analyze the causes of the current crisis, its transmission mechanisms, and the challenges for a global economic recovery. In section 4, we will assess whether a large revaluation of the RMB would contribute to the rebalancing of the United States-China imbalance and if it would be conducive to a global economic recovery. We will then discuss the necessary structural measures for addressing the imbalances in the United States and China and for sustaining a global economic recovery. Concluding remarks follow.

2. **Evolution of Global Imbalances and the US-China Trade and Payments Relations**

2.1. **Global Imbalances**

Global imbalances, defined as persistent current account surpluses in some countries and persistent current account deficits in others, are not a new concept. Bordo (2005) and Eichengreen (2004) provide a good historical overview of the evolution of global external imbalances. Bracke et al. (2008) also point out that the global economy has previously seen the emergence of global imbalances. For example, the world economy experienced external imbalances under the Gold Standard era preceding the WWI. These imbalances reappeared in the 1970s with the United States being the main deficit country, first with oil-exporting countries under the oil price shocks, and subsequently with other advanced countries running current account surpluses (Japan, Germany, and the Netherlands). Figure 1 shows the US current account deficit from 1990 to 2008.
An interesting feature that emerges from Figure 1 is that the US current account deficit has grown both in dollar terms and as a share of GDP since 2001, reaching a peak in 2006, and has only recently slowed down in the wake of the 2008 global financial crisis. This widening of the US current account has drawn the attention of academics and policy makers alike well before the onset of the global financial crisis (Backus et al. (2005), Bernanke (2005), Blanchard, Giavazzi, and Sa (2005), Cavallo and Tille (2006), Hausmann and Sturzenegger (2006), Krugman (2007), Obstfeld and Rogoff (2007), Roubini and Setser (2005), Summers (2004), among others). Many economists have expressed their concerns about the long-run sustainability and economic implications of these imbalances.

The debate on global imbalances that predated the global financial crisis revolved around whether these imbalances could result in a smooth or disruptive unwinding which could lead to macroeconomic instability (Krugman (2007)). This view is captured succinctly by Xafa (2007):

“The rising US current account deficit has increased concerns among policymakers about a possible abrupt disruption and disorderly unwinding, involving a major sell-off of dollar assets, a sharp increase in US interest rates, and an associated sharp reduction in US absorption. Such an abrupt unwinding of imbalances, triggered by a sudden loss of market
confidence in the dollar, would obviously have negative spillover market effects on financial markets and the global economy.”

There is certain resemblance in these warnings with emerging markets’ sudden stops and balance-of-payments crises. But one important characteristic that differentiates the United States from emerging countries is that the US dollar is widely used worldwide as a reserve currency. The United States can effectively finance its own current account deficit, up to a point. However, even in the event of a current account reversal, the effects on economic activity in the United States are likely to be smaller relative to similar episodes in developing countries due to lack of currency mismatches in private sector liabilities and in government debt². However, the impact of a US current account reversal on the international financial and trade system could be significant, especially due to the role of the dollar as a means of international settlements. One additional concern related to the global imbalances is the rising protectionist sentiment in a number of countries as a result of the persistent trade deficits in the United States and the large trade surpluses in emerging Asia in combination with increasing reserve accumulation and intervention in foreign exchange markets.

In his Sandridge Lecture³ at the Virginia Association of Economics in Richmond, Virginia, in March 2005, the then Federal Reserve Governor Ben Bernanke took issue with the common view that the large and worsening US current account deficit reflected policies and developments in the United States. Bernanke asserted that a combination of events over the previous decade had created a global excess supply of saving, what he termed a “global savings glut”, which accounted for the large and rising US current account deficit and the low level of interest rates in the United States. In particular, he pointed out that China and other East Asian countries had had significant current account surpluses resulting in large current account deficits incurred by the United States. At the same time, those countries purchased US bonds and Treasury bills resulting in low interest rates and rising asset prices in the United States. Noting that the developing countries as a group should have had current account deficits, he called for a

³ Bernanke (2005).
more direct approach to help and encourage developing countries to return to their long term, natural role as borrowers, rather than as lenders, of capital.

In June 2006, the Federal Reserve Bank of Boston organized a conference entitled “Global Imbalances-As Giants Evolve”\(^4\) where economists, business leaders and policy makers from around the world gathered to review the global imbalances and the role of emerging powers such as China and India in the global economy. At this conference, some economists, such as Kotlikoff (2008), expressed concern on the US saving gap, largely on account of intergenerational expropriation—the transfer of saving from the young to the old. But others, including Cooper (2008), Dooley, Folkerts-Landau, and Garber (2008) argued that these global imbalances might be good for the United States and the world. In particular, Cooper (2008) provided several reasons to downplay the alarm over the size of the US current account deficit. He noted that the rate of private saving in the United States had been fairly constant, with corporate saving making up for the decline in household saving while it was the federal government dissaving that continued to rise. Cooper (2008) pointed out that the measurement of saving in national income account also leaves out major components such as acquisition of durable goods, research, development, education which are very important for the United States. Furthermore, since the United States was a vibrant economy with innovative financial markets, it made sense for capital to flow to the United States. Over the years, Cooper argued, one should expect the more of this phenomenon as both foreign governments and nationals have a perception that the United States is a safe haven for their assets.

Some explanations attribute the emergence of these imbalances to several factors such as the heterogeneity in the level of financial development (Caballero et al. (2006) and Mendoza et al. (2008)), measurement error (Hausmann and Sturzenegger (2006)), global savings glut (Bernanke (2005)), demographic dynamics (Wei and Zhang (2009)\(^5\)), self-insurance against crises (Bernanke (2005)), and valuation effects (Gourinchas and Rey (2005)).

\(^4\) http://www.bos.frb.org/economic/conf/conf51/index.htm

\(^5\) Wei and Zhang (2009)’s story involves a distortion generated by the one-child policy in China rather than a precautionary savings motive.
As the debate on global imbalances was taking place, a global financial crisis shook the foundations of the global economy in 2008. Since then, the attention paid to these imbalances has shifted to a higher level, especially the imbalance between the United States and China. Some researchers argue that the RMB undervaluation caused the large US trade deficit and that the consequent Chinese purchase of US Treasury bonds lowered interest rates and caused real estate and equity bubbles in the United States, which then led to the financial crisis. A revaluation of RMB to rebalance trade between the United States and China, they argue, is also considered a prerequisite for a sustained global recovery. The debate on global imbalances still remains a hot topic in international macroeconomics. Several studies have looked at how these two phenomena are interconnected (see, for example, recent papers by Caballero et al. (2008) and Obstfeld and Rogoff (2009)). Others examine the role of these imbalances in the global recovery process (Blanchard and Milei-Ferretti (2009)), whether they are sustainable (Durdu et al. (2009)), and whether global imbalances will return with full force once the recovery process becomes self-sustained. The next section proceeds to provide a closer look at the United States-China external imbalance.

2.2. **The United States-China External Imbalance**

Beginning in 1988, China began to accumulate trade surpluses with the United States (Figure 2). However, even at its peak in 2006, the Chinese trade surplus never accounted for more than one-third of the US trade deficit. The remainder was mainly accounted for by other East Asian countries and oil-exporting economies. Why, then, has China become the sole focus of attention, rather than other nations which also have incurred large current account surpluses with the United States? Concerns about China’s current account surpluses are partially due to the (then) growing trend in China’s external accounts. Surpluses in other countries could be explained by demographic dynamics (Japan) or by rising oil prices (oil-exporting countries). However, China and other East Asian countries, one argument goes, deliberately followed a mercantilist policy, manipulating the exchange rate to run large current account surpluses and acquiring a large amount of international reserves.

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6 See Goldstein (2010)

7 See Krugman (2009, 2010)
This line of thought establishes that the recent surge in global imbalances has its roots in the export-led growth strategy followed by emerging Asia (particularly by China). The so called “Revived Bretton Woods” explanation highlights the reliance on exchange rate undervaluation and continual intervention in foreign exchange rate markets to promote net exports and external markets as key components for the development strategy adopted by these countries (Dooley, Folkerts-Landau, and Garber (2003, 2005)). Although this hypothesis has caught the attention in many circles, a closer examination of the evolution of the trade flows and the exchange rate between the United States and China suffices to show its lack of support.

Figure 3 shows the evolution of the real effective exchange rate of the RMB, along with China’s trade and current account balance. Until 2005, the RMB was pegged against the US dollar and since then, has shown an appreciation vis-à-vis the US currency and yet the bilateral current account balance continues to show a surplus in favor of China. Similarly, the real effective exchange rate of the RMB showed a real appreciation of the Chinese currency after 2005 (Figure 3) at a time when the Chinese surplus widened.
The composition of the US trade deficit provides further evidence in this respect. Figure 2 shows that China only accounts for at most one-third of US trade deficit even in 2007-2008 when this deficit was the largest in dollar terms. Before 2004, US trade deficit with China was not that large, and even in 2008 when the US trade deficit was at its highest, the total US trade deficit was US$ 866 billion and the Chinese trade surplus with the US was only US$ 285 billion\(^8\). The remaining two thirds and more of the US current account deficit were attributed to other developed and developing countries, with an important share belonging to oil-exporting countries. These altogether strongly suggest that the level of the bilateral exchange rate between the US dollar and the Chinese RMB was not the main driving force behind the US trade deficit.

Gruber and Kamin (2005) provide an assessment of some of the explanations offered to explain the pattern of global imbalances. In their evaluation of the “Revived Bretton Woods” hypothesis, they conclude that:

“If keeping currencies competitive to achieve current account surpluses is good long-term development strategy, why did the East Asian economies wait until the late 1990s to start implementing this strategy, why did this implementation coincide so neatly with their financial

\(^8\) Direction of Trade Statistics (2009), The International Monetary Fund.
“crises, and why haven’t economies in other regions in recent decades also adopted this strategy?”

But it could be argued that the linkage between China and other East Asian countries on the one hand and the global crisis on the other are through capital flows, and not necessarily through trade flows. Figure 4 below shows that, just as in the case of trade and current accounts, the evidence on capital flows does not support the theory that China was the cause of the massive capital inflows that were responsible for the easy monetary conditions in the United States. Figure 4 also shows that while it is true that capital inflows from China have risen rapidly in recent years, they remained a small portion of the total until 2008, when total inflows dropped by almost 80 percent.

![Figure 4: Foreign Capital inflows to the US 1999-2009, in US $billion](image)


Furthermore, the above evidence stands even if one includes only portfolio flows and not US foreign direct investment (FDI) in the capital flows into the United States. Figure 5 below shows total foreign and Chinese purchase of US long term securities. Again, even at its peak in 2008, Chinese purchases of US long term securities amounted to less than half of total. Therefore, it is clear that the United States-China imbalance was not the root cause of the low interest rates that prevailed during 2001-2004.
Therefore, the claim made by some observers that global imbalances contributed to the financial crisis of 2008-2009 by adding excess liquidity to the US financial markets and encouraging the development of toxic financial products does not fit the sequence of events. The United States-China imbalance did not become large until 2005, whereas the US interest rate has started to rise in 2004 (see Figure 3 and Figure 6 below). As Corden (2009) pointed out:

“...There is no reason to imply that the worldwide credit imbalance, and China in particular, are responsible for the current crisis. The role of the international capital market is to allow for these imbalances by intermediating between lenders and borrowers. Thus, there were several steps to the story. First there was the large surplus (or “savings glut”) coming principally from Japan, China, the oil exporters, and Germany. Then there was the lack of sufficient demand for funds for fruitful investment for a variety of special reasons. Finally, there was the response in the world capital market, leading to a “search for yield”, excessive leverage, unwise lending, and so on.”

To sum up, the evidence presented in this section indicates that it is misleading to attribute the large US current account deficits, the low-interest rates that caused the housing and equity bubble in the United States and the subsequent global economic crisis to China’s trade
surpluses or exchange rate policy. We provide another alternative explanation that better fit the facts that preceded the global financial crisis. Loose monetary policy, financial deregulation, growing fiscal budget deficits, and existing distortions in both the United States and China contributed to the emergence of these large current account imbalances in the years that preceded the crisis. Some of these factors also triggered or exacerbated the impact and the spread of the crisis.

3. **Causes, Contagion and Challenges of the Global Financial Crisis**

3.1. **Global Bonanza**

To review the linkages between the current financial crisis and global imbalances, we first explore in detail the reasons behind the large US trade deficit in recent years and the extent to which they are linked to factors originated from abroad. Figure 1 shows that the US current account deficit began to gradually increase (in absolute terms as well as relative to US GDP) in the late 1990s, with a short slowdown in 2001 due to the dot-com recession, and to peak in 2006.

The many factors that contributed to generating the large US current account deficits of the past decade can be grouped into direct and indirect ones. The latter is primarily linked to the financial deregulation that started in the 1980s. On the one hand, financial deregulation allowed a large number of new financial innovations, generating positive effects and making financial markets very dynamic. However, deregulation also brought some undesired effects. It allowed economic agents to engage in high leveraging and excessive risk-taking behavior. And high leveraging and risk-taking behavior turned what was believed to be idiosyncratic risk into systemic risk.

The direct factors dated back to the burst of the dot-com bubble in 2001. With the burst of the I.T. bubble, consumers experienced a significant wealth loss. With consumption and economic activity falling and the economy heading towards a recession, the US Federal Reserve adopted an aggressive monetary policy to mitigate these effects, reducing the funds rate 27 times from 6.5 percent in March 2001 to 1 percent in June 2003 (see Figure 6 for the evolution of the Federal Funds rate). Other events in the US also contributed to the Federal Reserve’s decision to keep the low interest rate policy. For instance, after the 9/11 event, US stocks markets responded with a sharp decline, raising concerns about the health of the US economy after the terrorist
attacks. As a result of the active monetary policy, the US economy recovered quickly and the dot-com recession was short-lived\textsuperscript{9}.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{Figure6.png}
\caption{Federal Funds Rate - US 1990-2009}
\label{fig:Figure6}
\end{figure}

The protracted period of low interest rates in combination with financial innovations led to a situation of excess liquidity\textsuperscript{10}, which supported an incipient housing boom since 2002 (Figure 7). Real estate and equity investment increased rapidly, and the housing boom turned into a bubble, with housing prices reaching well beyond what economic fundamentals would indicate\textsuperscript{11}. In general, housing and real estate property represent an important share of household

\textsuperscript{9} According to the National Bureau of Economic Research, the 2001 recession lasted 8 months from March 2001 to November 2001 (shorter than the average duration of a recession in the US in the post-war era).

\textsuperscript{10} The World Bank (2010)

\textsuperscript{11} World Economic Outlook, October 2008 (Chapter 1), The International Monetary Fund. According to the WEO: “The countries that have experienced the largest unexplained increases in house prices over the past decade are Australia, Ireland, and the United Kingdom; house prices in these countries were 20 percent to 30 percent higher in 2007 than can be attributed to fundamentals. A group of other countries -including France, Italy, the Netherlands, and Spain- have house price gaps of between 10 percent and 20 percent. The gap estimate for the United States –per about 7 percent- is smaller than for most other countries and has been narrowing compared with earlier estimates, partly reflecting the decline in U.S. house prices over the past 18 months.”
Wealth in total household net worth\(^{12}\). Wealth effects from the real estate market and the recovery of the equity market made households feel richer, and hence, consume more. Financial innovations allowed households to refinance their mortgages, and capitalize their wealth gains in the housing markets.

![Figure 7: FHFA Housing Price Indices](image)


Note: Both the Housing Price Index for all transactions (HPI) and the seasonally-adjusted Purchased-Only Index are presented (changes over the previous quarter and over the previous 4 quarters for the U.S.

Consumption increased rapidly, as well as household debt during this period. Figure 8 shows that in 2001 US household debt as a percentage of household disposable income was 100 percent. By 2007, it increased up to 132 percent. This 32 percentage point increase in household debt was mainly used to support household consumption. The boom was not only limited to the housing market. The US stock market also increased by more than 50 percent from June 2003 to October 2007\(^{13}\). Figure 9 shows the evolution of households’ net worth relative to disposable personal income. Disposable personal income has been constantly increasing over 1986-2009. However, net worth fell from 1999 to 2002 to rise again from 2002-2006. Hence, during 2002-

\(^{12}\) Data from the Flow of Funds Accounts of the United States of the US Federal Reserve indicate that the share of real estate in total net worth for households and non-profit organizations was less than 30% in 2000, peaked at 40% in 2005 to drop to 37% and 34% in 2008 and 2009 (Q3) respectively.

\(^{13}\) World Bank staff estimates (2010).
2006 households saw their wealth increase as a consequence of soaring housing and equity markets.
Mussa (2004) noted the co-existence of low policy interest rates in the world and global imbalances and expressed fears that together with the low inflation rates, these rates masked the need to tighten monetary conditions when needed, especially with high and rising asset prices\textsuperscript{14}. In this situation, if the authorities tighten monetary policy too soon, a credit crunch would be inevitable. But if they postpone this policy action, unsustainable asset price bubble was likely to develop, which was exactly what happened. Mussa (2004) also pointed to the significance of large fiscal deficits in most industrial countries which would limit the extent of fiscal stimulus when needed.

One additional factor contributed to the large US current account deficits: the US public sector dissavings. The wars in Iraq and Afghanistan and the tax cuts from the Bush administrations largely turned the US government budget from a surplus of almost 1 percent of GDP in 2000 to a deficit of 4.5 percent\textsuperscript{15} of GDP in 2008 (Figure 10). All else equal, this increase in the budget deficit implies a fall in public sector savings and national savings, and a corresponding swing of 5.5 percentage points of US GDP in the current account.

\textsuperscript{14}Mussa (2004)

\textsuperscript{15}Office of Management and Budget (2009). The deficit is defined here without Social Security funds.
To summarize, loose monetary policy that was enacted to counteract the burst of the tech bubble and the 9/11 attacks contributed to the development of a housing and equity bubble, which increased households’ wealth and, as a result, consumption and the US economy boomed. US domestic production was not able to meet the increase in domestic demand, and this gap between resources and expenditures was financed mainly by foreign sources, including China, oil-exporting countries, and emerging Asia. The hike in private consumption was also accompanied by larger government deficits, resulting in even larger US current account deficits.

Along with the US economy, the world economy also entered into a period of extraordinary growth between 2002 and 2007. Developing countries grew on average an astounding 6.6 percent during this period. This extraordinary global economic growth was partially possible due to, among other factors, the low cost of borrowing and the excess liquidity in the United States. With low interest rate and excess liquidity, large capital outflows flew from the United States and other high income countries to the rest of the world in search of higher yields. In 2001, capital flows to developing countries represented US$ 223 billion. By 2007, they

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increased almost six-fold to US$ 1.2 trillion. Large inflows of capital to the developing world certainly contributed to the high investment growth rate observed during that period. For example, in the developing world, the annual growth rate of fixed asset investment in the 1980s was 1.7 percent per year. In the 1990s, the annual growth rate of fixed asset investment was 3.3 percent per year. But in 2002-2007, this rate increased to 10.6 percent per year in developing countries. Not only investment accelerated during this period. Large capital flows also contributed to equity and housing market booms in developing and high income countries.

During this time, international trade expanded considerably, and it provided the engine for global economic growth. Due to the fact that consumption demand increased significantly in the United States and other advanced countries as a consequence of wealth effects, imports of consumption goods from the developing countries also increased. Advanced countries’ exports of capital goods also benefited from the global bonanza. Investment in the world increased, and so the demand for the investment goods. International trade data for 2002-2007 also shows that total world exports also grew at 14.7 percent annually, much higher than the previous period, and also much higher than the growth rate of global GDP during this period. Total exports in developing countries also increased rapidly, at an average annual growth rate of 20.6 percent in 2002-2007, compared to 8.1 percent in the 1990s.

Growth in the developing world was reinforced by two factors, the increase in commodity prices and workers’ remittances. Commodity prices such as oil and coal prices increased significantly due to the high demand for raw materials that resulted from large increases in investment and consumption (Figure 11). This provided additional funds and confidence for resource-rich countries to make further investments. Even resource-poor countries benefited from this period of global bonanza, mainly due to the extraordinary high growth rates

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17 The World Bank (2010).

18 The World Bank (2009a). Fixed asset investment growth is the annual growth of gross fixed capital formation. The average growth rate reported is the simple average of the growth rate over the indicated time period. Developing countries are defined as those countries in the low and middle income group (2008 GNI per capita of $11,905 or less).

19 The World Bank (2009a). Export growth is defined as growth of merchandise exports (in current US dollars). Export volumes grew annually at 10.4 percent in emerging and developing countries, and at 7.1 percent in the World (World Economic Outlook Database, October 2009).
in high income countries. Migration workers in advanced countries sent back remittances to family members in developing countries. For instance, during the 2000s, remittances grew at 15 percent per year, reaching US$ 433 billion globally in 2008. Workers’ remittances to developing countries, on the other hand, increased from US$ 115 billion in 2002 to US$ 285 billion in 2007 as a result of high labor demand in developed countries\(^{20}\). As it is well known, for many developing countries, remittances are one of the most important sources of income. These large remittances helped support increases in investments and consumption in resource-poor countries. Overall, from 2002, all countries in the world enjoyed about 5 to 6 years of extraordinary growth.

3.2. **The Burst of the Bubble**

As mentioned before, low interest rates and excess liquidity supported the booming housing and equity markets, turning into an incipient bubble. The increase in wealth turned into

\(^{20}\) The World Bank (2009a). Remittances are defined as workers’ remittances and compensation of employees received (in current US$).
consumption and investment and so on. But all bubbles burst eventually, and when they burst, the process is just reversed. This process began in 2007, with the subprime mortgage crisis. At the time, it was believed that its ramifications would be short-lived and limited, as the subprime market itself was only US$ 700 billion.

However, because of financial innovations, the risk derived from subprime loans turned into systemic risk. Lax prudential and regulatory oversight of the financial system were not free of consequences, as default started to mount within subprime mortgages in mid-2007 after the increase in interest rate to mitigate the real estate demand. Losses associated with mortgage-backed securities left financial institutions on the verge of insolvency. The collapse of Lehman Brothers in September of 2008 all of a sudden raised concerns of systemic risk and a financial crisis of greater scope. The subprime crisis subsequently developed into a full-fledged banking crisis, and ultimately turned into a global financial crisis. All financial institutions encountered some balance sheet problems, and to sail through the crisis, they needed to deleverage. Asymmetric information problems in credit markets exacerbated the credit constraints of financial institutions, generating a credit crunch and increasing the borrowing costs in financial markets. As interest rates shot up, and the appetite for riskier assets fell, world equity markets collapsed\textsuperscript{21}. From September until the end of 2008, the equity markets in the world (advanced and developing countries alike) suffered significant losses. The US stock market dropped 25 percent during that period\textsuperscript{22}. With the burst of the bubble and the continuous decline in the housing market, many people all of a sudden saw their wealth vanish (Figure 9).

The main role of financial institutions in any country is to channel funds saved by households and businesses to its most productive uses. When these institutions are struggling, this role cannot be fulfilled, with adverse consequences for the real sector. In the midst of the financial crisis, losses related to the subprime mortgage market and other risky investments led to a credit crunch. Financial intermediaries, worried about their capital base or due to difficulties raising fresh funds, cut back in commercial and consumption lending, and tightened their lending standards, which drastically reduced the credit available for consumption and investment in the

\textsuperscript{21} The World Bank (2010).

\textsuperscript{22} World Bank staff estimates (2010).
real sector, in some cases affecting working capital of firms. Both businesses and consumers had to cut back on spending, leading to a further fall in aggregate demand, mounting non-performing loans, further credit tightening, and further reductions in aggregate demand. The credit channel was one of several mechanisms through which the financial crisis affects the real sector. Overall uncertainty about the magnitude and the duration of the crisis undermined consumer confidence and businesses investment decisions on the one hand, and led to banks hoarding liquidity and reducing lending on the other.

Aggregate demand fell as a result of the credit crunch. High borrowing costs lowered investment demand. Households were forced to adjust their consumption levels as their net worth declined. All the investment that was carried out before the crisis turned into excess capacity by the end of 2008. Industrial production peaked in January of 2008 in developed and developing countries to later fall sharply between the fourth quarter of 2008 and the first quarter of 2009 (Figure 12). With excess capacity, the economy was trapped in a downward spiral. Non-performing loans became widespread because firms’ performance was affected by excess capacity. Figure 13 show the evolution of delinquency rates on different types of loans for all commercial banks between 1991 and 2009. Delinquency loans began to rise in 2007, when financial institutions’ balance sheets deteriorated and government assistance was needed for them to survive.

![Figure 12: Index of industrial production, seasonally adjusted, 1990-2009 (January 2008 = 100)](chart.png)

Source: DEC Prospects Group (2010), The World Bank
The adverse effects of the crisis were not only limited to the financial institutions, but they also spread to the real economy. With excess capacity, investment demand dropped sharply. Also with excess capacity, some firms went bankrupt, and workers were laid off. Even firms that did not go bankrupt were forced to reduce their workforce in order to cut down their costs. Overall, unemployment increased, reaching 10 percent in the United States by the end of 2009. And with the hike in unemployment, people's confidence about their future was hurt, reducing their consumption. Thus, excess capacity reduced investment and consumption demand, which made the excess capacity even bigger.

The collapse of the equity markets affected not only the United States or other high income countries. It also occurred in the rest of the world. Even Hong Kong, China, India, and Brazil, all suffered the loss of wealth due to the equity market bubble burst. The financial crisis in the United States spilled over very quickly across borders initially through the increasingly integrated financial system. The banking crisis that started with the fall of several non-banking financial institutions (Bear Sterns, Lehman Brothers, AIG) spread globally with lasting consequences due to the difficulty in pricing the complex financial instruments involved.
only the crisis had an impact on the financial sector and the inter-linkages across banks, but it also triggered a severe global recession.

But how did the financial crisis in the United States spread over to other advanced countries? In order to understand this, first we need to note that the credit boom in the years preceding the crisis was not only limited to the United States but also to other advanced countries as well. Many of these conditions, e.g., low credit risk and spreads, very high asset and housing prices preexisted worldwide. On the other hand, many non-US financial institutions invested heavily in subprime backed securities and other complex derivatives. When the housing bubble in the United States burst, other advanced countries were not able to escape the financial turmoil due to the linkages in the financial sectors. Moreover, uncertainty over the exposure of other financial intermediaries further exacerbated the credit crunch in other advanced countries.

Just as the boom was built up rapidly, the burst also spread out quickly via the same channels. What contributed to the dynamic growth in the developing world before the crisis also became the mechanism for the spread of the crisis to developing countries. By the end of 2008, as the credit crunch intensified, developing countries suffered a reversal of capital inflows or “sudden stop”. Funds for investment and consumption dried out. Increased risk aversion and mounting uncertainty around the crisis led financial institutions to pull out from risky assets in emerging economies, even though macroeconomic conditions in many of these economies did not show any signs of instability and their financial systems were relatively healthy (flight to safety). Moreover, the liquidity needs of many financial institutions due to the credit crunch in advanced economies also contributed to reducing capital flows (and hence the availability of private financial flows), thus raising the cost of capital.

Trade volumes also fell significantly due to drops in consumption and investment demand. Exports from high income countries – mainly investment goods – also contracted. The international trade channel was another critical transmission mechanism for the spread of crisis. According to recent estimates by the World Bank, global trade volumes declined by 14.4 percent in 2009. First, the drop in household wealth, combined with increasing uncertainty about the future (job security), led to the postponing of purchase decisions on consumer durables. Second,

23 The World Bank (2010).
there was a rundown of inventory in anticipation of a drop in consumption as a result of wealth effects due to the bubble burst in the United States and other advanced economies. Third, the decline in investment as a result of excess capacity, due to the investment boom that preceded the crisis, and the overall fall in aggregate demand after the crisis also contributed to the drop in trade flows.

Finally, high commodity prices, that were prevalent during the boom, all of a sudden crashed (Figure 11) and tourism revenues declined. The drop in consumption and investment globally was accompanied by a fall in commodity prices, hurting the resource-exporting countries’ revenues. While workers’ remittances, another importance source of income for the developing world, were more resilient than commodity prices, their growth rate fell in the wake of the financial crisis. Remittances to developing countries grew on average 20 percent per year during 2003-2007, reaching US$ 285 billion in 2007. They still grew at 16.7% per annum in 2008, but recent estimates by the World Bank indicate that remittances to developing countries have declined in 2009 by 6.1%. Europe and Central Asia and Latin America and the Caribbean are the regions that have experienced the largest declines (14.7 and 9.6 percent respectively). Countries in Sub-Saharan Africa have been hit by a 2.9 percent drop in remittances. To sum up, all these factors lowered the demand for consumption and investment, and hence, global economic growth declined significantly, leading to the most serious crisis since the Great Depression.

In contrast to the Great Depression, rapid and comprehensive monetary authority interventions helped to avert a global financial collapse at the end of 2008. The broad nature and size of interventions -in most cases expanding the public sector balance sheet-, have been unprecedented in modern times. Yet despite capital injections, special liquidity facilities, monetary easing, provision of guarantees, stress-testing and the announcement of financial restructuring plans, the status of financial sector balance sheet repair is still uncertain.

24 The World Bank (2009a). Remittances are defined as workers' remittances and compensation of employees received by developing countries (in current US$).

In addition, the global economy is facing an unprecedented problem of coordination that requires a large, decisive, globally coordinated policy action, in the form of a fiscal stimulus that goes beyond national boundaries. In most cases, G20 countries have adopted—in addition to support of their financial sectors—fiscal stimulus measures that reached about 1.4% of their GDP in 2009. A particular emphasis was given to discretionary spending on infrastructure, given their higher multiplier effects.

Latest data from developed countries and emerging markets are signaling an expansion in economic activity, fueled by the large financial and fiscal stimuli packages adopted by governments and by the restocking of inventory. However, with significant excess capacity in both developed and developing countries, recovery is expected to remain weak and unemployment is still expected to increase.

4. What’s the Way out?

4.1. Is a Revaluation of the RMB Part of the Solution?

Some economists and policy makers have called for a revaluation of the RMB as a way to readdress the global imbalance. In Section 2, we have shown that the RMB was not the main factor explaining the bilateral United States-China imbalance. In this section, we will present several arguments that indicate that a currency revaluation in China will not solve the problem and may, in fact, make the situation even worse in the short run.

Chinese exports are mainly consumer products that are very labor intensive and that the United States no longer produces. Since both price and income elasticities on consumer products are very low in general, a strengthening of the Chinese currency will produce little or no effect on the US current account deficit as American households will continue to consume those products in similar amounts. The realignment of the exchange rate may lead to the same imports of those products from other countries at higher prices, or continue to import them from China, also at higher prices. This will result in a worsening, rather than an improvement, of the US trade deficit since imports of consumer goods will now become more expensive.

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26 Prasad and Sorkin (2009).
In effect, the evidence before 2008 supports this conjecture. The RMB appreciated vis-à-vis the US dollar during 2005-2008 by more than 20 percent. This trend is also true in the case of the real effective exchange rate of the RMB, showing that the Chinese currency experienced a real appreciation relative to its trading partners (Figure 3). The US dollar also started to depreciate relative to other currencies since 2006. However, a comparison of the trade deficit over this period shows that the US trade deficit has increased rather than decreased. The fact that the Chinese currency appreciated more than 20 percent against the US dollar while the US deficit towards China continued to rise suggests that a revaluation of the Chinese currency is likely to have little effect on the US current account deficit. At the same time, it might lead to a decline of US households’ purchasing power, with negative consequences on domestic demand. In fact, with excess capacity and the need to promote domestic demand, a Chinese currency appreciation could reduce US domestic demand and postpone the US recovery.

4.2. **Excess Capacity and its Implications for a Sustainable Global Recovery**

If a revaluation of the RMB is not the solution for the global imbalance and may even deter the global economic recovery, what are the measures that should be adopted to address both these issues? In this discussion, it is useful to separate short run measures from medium to long run issues. One important thing to understand is that the current pressures in the world are excess capacity and deflationary pressures. With excess capacity, the private sector demand, be it consumption or investment demand, would be very low. Under these circumstances, government fiscal stimulus represents one useful tool to support domestic absorption (investment and consumption). However, many academics and policy makers have raised concerns of the implications this poses on government debt and future inflationary pressures. Although increases in government spending may indeed increase inflation expectations, it is not always true.

Whether government debt burden from current fiscal stimuli will result in inflation or not very much depends on how the government uses the money. If the government uses the stimulus money to make investments, especially investments that can release bottlenecks for growth, then the productivity of the economy will increase, and after the recovery, the growth rate will be enhanced. Government revenues will increase, and the increase in revenue will help repay back current government deficits. If the government uses money to boost aggregate demand without fundamentally affecting the long-run growth potential of the economy, private agents will see
through this and will behave under the “Ricardian Equivalence”, according to which they will save more in order to be ready to pay for either tax or inflation hikes in the future, when current period spending will have to be repaid. The “Ricardian Equivalence”, however, could be broken, since the “Ricardian Equivalence” only holds when investment does not increase productivity in the future. Hence, while a “Keynesian stimulus” is needed to deal with the current crisis, we need to go beyond Keynesianism, with investments that not only help support current demand, but also improve future productivity27.

Many opportunities exist for government stimulus money to turn into productivity-enhancing investments. In high income countries, these investments could focus on climate change and global warming, finding and implementing new alternative and renewable sources of energy and improving energy efficiency. Investments in new technologies with low carbon growth paths are needed, especially now that global investment demand is low.

Developing countries in general have more bottlenecks in infrastructure and can readily improve their environment compared to high income countries. If governments make investments in those areas now, they will boost demand in the short run, and it will pave the foundation for sustained dynamic economic growth in the long run. The largest scope for productivity enhancing investments exists in developing countries. And if we can channel funds at this time to make investments in developing countries, the global economy will receive a great impulse to recover from the current crisis and enter into a sustainable growth path. And it will also contribute to the reduction in the disparity between high income and low income countries, because it will allow low income countries to have strong and dynamic growth in the future.

5. Global Imbalances and Long Run Sustainability

In the long run, if the United States continues to have large trade deficits, and China continues to have large trade surpluses, global imbalances may still be an issue. The natural question is how to address the US trade deficit and China’s trade surplus? Since the US trade deficit was the result of the wealth effect financed by inadequate financial instruments as well as the bubble in the housing and equity markets, it is very important to improve the financial

27 Lin (2009a)
regulation in the United States and reduce the leverage of both households and financial institutions. This will help prevent idiosyncratic risk from turning into systemic risk. US households certainly need to increase their savings. However, this increase certainly cannot be carried out overnight. Household debt in 2007 was 132 percent of household disposable income (Figure 8). This needs to be reduced gradually. As long as households cannot capitalize their wealth (equity and real estate), then they will have to increase their saving. This represents the structural change in the United States.

In the case of China, saving and investment have been extremely high in recent years. Since China cannot consume all its production generated by the recent investments, production surplus turned into export surplus. In order to address the Chinese trade surplus, the fundamental question is to understand why China’s savings rate is so high.

The Chinese gradual approach to reforms provided many advantages, especially maintaining stability, and at the same time, promoting dynamic growth. China’s economic progress has been undeniable. The Chinese economy has experienced very dynamic economic growth since the reforms began in 1978, with an average annual GDP growth rate of almost 10% during the last three decades. Growth was particularly high during 2002-2007, well above this 10% per year trend. As a result, China’s income per capita increased from US$ 165 in 1978 to US$ 1963 in 2008\(^{28}\), almost a twelve-fold increase in three decades, and the Chinese economy now represents 7.14% of World GDP, relative to 1.73% in 1980\(^{29,30}\). This impressive growth has been led by an even greater expansion in trade, especially of exports. International trade has been growing at an impressive annual average 27 percent since 2003\(^{31}\).

However, China did not carry out all the necessary reforms at the same time. And those sectors that have not been reformed yet still have distortions; and those distortions turned into


\(^{29}\) The World Bank (2009a).

\(^{30}\) The World Bank (2009a). In constant 2000 US dollars, the China’s share of World GDP was 1.03% in 1980 and 6.46% in 2008.

\(^{31}\) World Development Indicators (2009), The World Bank.
unfavorable income distribution. It is this income distribution that causes the high savings rate in China.

Since the 1990s, income disparity in China has become larger and larger. Table 1 shows the evolution of income inequality in rural and urban areas and nationally for China during 1980-2001\textsuperscript{32}. While China has attained significant progress against poverty (the proportion of the population living in poverty fell from 53\% to 8\% during 1981-2001\textsuperscript{33}), income inequality has increased over the years –although not continuously- in rural and urban areas as well as in China as a whole (Figure 14). In general the marginal propensity to consume of low income people is higher; whereas the marginal propensity to consume of high income people is lower. Therefore, if wealth is concentrated on high-income people, they will not consume as much, saving more and turning savings into investment. On the other hand, low income people have a high marginal propensity to consume, but they do not have enough funds. This represents the main reason for the excess of savings over investment that turned into trade surpluses.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{Figure14.png}
\caption{Income inequality in China}
\end{figure}

\textit{Source: Ravallion and Chen (2007)}

\textsuperscript{32} Ravallion and Chen (2007).

\textsuperscript{33} Ravallion and Chen (2007).
What is the origin of the increase in income disparity in China? Income disparity in China can be explained by three components of its current economic structure: the financial sector, the resource sector, and monopolies in the telecommunications and financial sectors. This, in turn, directly affects the corporate savings rate. Figure 15 shows the evolution of saving in China from 1995-2006. Total savings as a share of GDP were below 40 percent until 2003. Household savings were high, but still they were not very different from other countries such as India. But since 2004, savings increased significantly. This discrete jump was mainly driven by the hike in corporate savings.\(^{34}\)

![Figure 15: Corporate, government, and household savings to GDP China: 1995-2006](source)

There are several factors behind this trend. First, China’s financial structure is dominated by four big state-owned banks. Those big banks and China’s equity market only provide access to financial services to large enterprises, either owned by the state or by rich people. Small and medium enterprises, which are very labor intensive, do not have access to any financial services. This situation generates two implications for income distribution. On the one hand, China has abundant labor force, but the development of labor-intensive small and medium sized enterprises is repressed because they do not have access to financial services. If their growth is repressed, fewer job opportunities will be available, generating a dampening effect on the wage rate in

\(^{34}\) See also Prasad (2009).
China. For poor people, the only source of income is their own labor force. The financial structure artificially dumps these job opportunities and reduces wages, lowering the income of low income people.

At the same time, the financial structure artificially lowers the cost of credit and capital, acting as a subsidy to those enterprises with access to financial services. The subsidy is mainly financed by those people who put money into financial institutions but cannot borrow from them, the relatively poor. Therefore, the financial structure is asking the poor people to subsidize the investment of rich people or large corporations. This exacerbates the income disparity in China.

Second, the low royalty levy of natural resources leads to income disparity. This is also related to the lack of reforms in China. Due to the scarcity of natural resources in China, their prices are relatively high. However, the Chinese government imposes little loyalty levy on these resources. State-owned and private mining companies benefit greatly from the low royalty payments. Thus, this also leads to a transfer of wealth to a small group of people.

Third, monopoly power in financial institutions and in the telecommunications industry make these industries extremely profitable, with only limited people having access to these monopoly rents. These are the three most important sources of income disparity in China.

The previous analysis suggests that without addressing the root causes of income disparity in China, consumption will be hard to increase. Hence, savings and investment will be also hard to reduce, and trade surpluses will be hard to eliminate. In order to tackle these issues, China needs to reform its financial structure, allowing more small and medium sized local financial institutions to enter so they can provide financial services to the more labor intensive small and medium enterprises as well as rural firms and households. The demand for financial services is very likely to differ at different stages of development, since the endowment structure is also likely to differ. According to Lin et al. (2009), firms in different industries differ in size, risk, technology, and financing needs. The structure of the financial sector might hinder the efficient allocation of resources and slow down the development process. China also needs to introduce reasonable loyalty and taxation systems to the natural resources exploitation corporations so that the government can use the tax revenue to make investments in social protection, social system or infrastructure. And finally, competition in monopoly sectors are
needed to reduce monopoly rents and also to improve the efficiency in the provision of those services.

6. Concluding Remarks

This paper advances an alternative explanation of the large external imbalance between the United States and China, and its linkages to the current global financial crisis. We show that US current account deficits dated back long before the emergence of China’s recent large trade surpluses, with China accounting at its peak for at most one-third of this deficit. The relative rise in China’s savings in recent years can be attributed to an increase in its corporate savings, a trend which reflects distortions arising from the transition process from a planned to a market economy. These distortions exacerbate China’s income inequality, causing domestic consumption to remain a small share of GDP. Large recent current account deficits in the United States, on the other hand, can be attributed to public sector dissavings and perverse incentives generated by housing and equity bubbles, made possible by loose monetary policy and by “innovative” financial derivatives arising from the financial deregulation in the early 1980s. The paper shows that short run measures are unlikely to fully address these external imbalances. Both countries require long run, structural measures to resolve the underlying problems and to restore a sustainable foundation for growth.

If China and the United States can continue the fiscal stimulus in the short run to weather through the current excess capacity situation, as well as introduce the necessary reforms to address their long term structural problems, then the global economy will have the opportunity to benefit from a sustainable recovery, while a foundation for dynamic growth will be laid.

One caveat is important. Global imbalances, and in particular the external imbalance between the United States and China, remain a complex and controversial issue. Although there have been attempts to assess the validity of competing theories, no final agreement has been reached. Further research in this area is needed to gain a better understanding of the underlying factors and the macroeconomic implications of external imbalances in the global economy.
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## Appendix

### Table 1: China - Gini Indices of Income Inequality

<table>
<thead>
<tr>
<th>Year</th>
<th>Rural</th>
<th>Urban</th>
<th>National Without adjustment for cost of living difference</th>
<th>National With adjustment for cost of living difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980</td>
<td>24.99</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
<tr>
<td>1981</td>
<td>24.73</td>
<td>18.46</td>
<td>30.95</td>
<td>27.98</td>
</tr>
<tr>
<td>1982</td>
<td>24.4</td>
<td>16.27</td>
<td>28.53</td>
<td>25.91</td>
</tr>
<tr>
<td>1983</td>
<td>25.73</td>
<td>16.59</td>
<td>28.28</td>
<td>26.02</td>
</tr>
<tr>
<td>1984</td>
<td>26.69</td>
<td>17.79</td>
<td>29.11</td>
<td>26.89</td>
</tr>
<tr>
<td>1985</td>
<td>26.8</td>
<td>17.06</td>
<td>28.95</td>
<td>26.45</td>
</tr>
<tr>
<td>1986</td>
<td>28.48</td>
<td>20.66</td>
<td>32.41</td>
<td>29.2</td>
</tr>
<tr>
<td>1987</td>
<td>28.53</td>
<td>20.2</td>
<td>32.38</td>
<td>28.9</td>
</tr>
<tr>
<td>1988</td>
<td>29.71</td>
<td>21.08</td>
<td>33.01</td>
<td>29.5</td>
</tr>
<tr>
<td>1989</td>
<td>30.96</td>
<td>24.21</td>
<td>35.15</td>
<td>31.78</td>
</tr>
<tr>
<td>1990</td>
<td>29.87</td>
<td>23.42</td>
<td>34.85</td>
<td>31.55</td>
</tr>
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<td>1991</td>
<td>31.32</td>
<td>23.21</td>
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<td>33.1</td>
</tr>
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<td>1992</td>
<td>32.03</td>
<td>24.18</td>
<td>39.01</td>
<td>34.24</td>
</tr>
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<td>33.7</td>
<td>27.18</td>
<td>41.95</td>
<td>36.74</td>
</tr>
<tr>
<td>1994</td>
<td>34</td>
<td>29.22</td>
<td>43.31</td>
<td>37.6</td>
</tr>
<tr>
<td>1995</td>
<td>33.98</td>
<td>28.27</td>
<td>41.5</td>
<td>36.53</td>
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<td>1996</td>
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<td>39.75</td>
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<td>1997</td>
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<td>1998</td>
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<td>29.94</td>
<td>40.33</td>
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<td>41.61</td>
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<td>2000</td>
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<td>43.82</td>
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<td>2001</td>
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<td>44.73</td>
<td>39.45</td>
</tr>
<tr>
<td>2002</td>
<td>n.a.</td>
<td>32.65</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
</tbody>
</table>

Source: Ravallion and Chen (2007)