



CHINA'S MACROECONOMIC POLICY OPTIONS: A SECTORAL FINANCIAL BALANCES PERSPECTIVE

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Abstract:

This paper attempts to discern the macroeconomic policy options open to China after its stock market crash in August 2015. While several facts and figures on different facets of the Chinese economy keep pouring in – high levels household savings, rising indebtedness of private sector, slowing GDP growth rates, contracting current account surplus, and many more – it is difficult to get a holistic picture of the Chinese macroeconomy and the policy options that it has in wake of the significant changes taking place. The Sectoral Financial Balances (SFB) model, which has its basis in a simple accounting identity, provides a simple, consistent and logical framework that can help us work through the fog and put these facts and figures in perspective. At the same it allows us to trace the movement of the economy through time and draw insights into the possible trajectory of the economy given trends in various macroeconomic parameters. From our analysis, can we say that China is heading towards a major crisis? And what could be the possible policy response of the Chinese government in averting such a crisis? These are important questions that need urgent answers.

Key words: China, macroeconomic policy, Sectoral financial balances, fiscal deficit, stock market crash

1. Introduction

August 24, 2015; a Black Monday for stock markets across the world. The collapse began in China but the effects reverberated through the day and throughout the world, wiping out hundreds of billions if not trillions of dollars of wealth. The crisis was supposedly triggered off by the devaluation of the Chinese yuan (CNY) on August 11 by some 2%, raising serious concerns about the state of the Chinese economy. This view was, however, questioned by Chinese authorities; the adjustment in the yuan was more in the nature of a realignment of the currency to the market rate. A more likely reason, according to them was the looming possibility at that time of an interest

rate hike by the US Federal Reserve.^{ix} Whatever may have been the cause of the crash there is no doubt that it has initiated a larger debate on an imminent slowdown in global economic growth. On the eve of 2016, Christine Lagarde, Managing Director of the International Monetary Fund (IMF) warned that “the prospect of rising interest rates in the US and China’s slowdown are contributing to uncertainty and higher economic volatility worldwide. Indeed, there has been a sharp deceleration in the growth of global trade, with the drop in commodity prices posing problems for resource-based economies.”^x A global crisis then, if it does indeed turn out to be so, is forcing us to recognize the prominence of China and the possible repercussions that an economic perturbation there could have on the world. It is therefore not surprising that news and analysis started pouring in on the Chinese economy soon after the August meltdown; however, given the multitude of interrelated variables – exchange rates, current account balances on China’s balance of payments, slowdown in GDP growth, low levels of household consumption, high debt of private corporate sector, and so on – it is difficult to get an aggregate picture of the state of the Chinese economy. This paper is an attempt to put together several stylized facts and figures into a theoretical framework that not only presents us with a macroeconomic view of the Chinese economy but also sheds light on the possible direction its policy response. Before proceeding with our objective, we introduce the simple but much neglected and possibly unknown (especially to mainstream economists) macroeconomic model – the Sectoral Financial Balances (SFB) model developed by the Post-Keynesian economist, Wynne Godley. We will then return to our analysis of the Chinese macroeconomy using the SFB framework.

2. The Sectoral Financial Balances Model

The SFB model builds on the double entry accounting axiom that every debit has a corresponding credit or for every asset there must be a corresponding liability. Unlike complicated and sometimes rather obscure dynamic stochastic general equilibrium (DSGE) models, the SFB model is built on fundamental accounting axioms that must hold true. If we divide an economy into three sectors namely the private domestic sector, the government sector and external sector then net financial asset accumulation across these sectors must sum to zero. In other words, for financial asset accumulation in one or at most two sectors there must be a corresponding accumulation of liabilities in at least one of the other sectors. Therefore,

$$(T - G) + (S - I) + (M - X) = 0 \quad \dots \quad (1)$$

where G = government expenditure, T = tax revenues, S = private sector savings, I = private sector investment, M = imports and X = exports^{xi}. Note that a current account surplus (deficit) where $X - M > 0$ ($X - M < 0$) implies outflow (inflow) of capital from (into) the domestic economy and accumulation of liabilities (assets) by foreigners. Rewriting equation (1) we get:

$$(S - I) = (G - T) + (X - M) \quad \dots \quad (2)$$

Equation (2) establishes that net asset accumulation of the private sector must entail a corresponding accumulation of liabilities by at least one of the two sectors; the government and/or the foreign sector/s.

The SFB model can be mapped on to a 4-quadrant (Q-1 to Q-4) graph as in Figure 1. The SI line drawn at an angle of 45° through the origin is a set of points where $(S - I) = 0$. Consider point A on the SI line where given $(S - I) = 0$ we have from equation 2, $(X - M) = -(G - T)$ where the latter can be written as $(T - G)$ or a fiscal surplus. If $(S - I) = 0$, a positive current account balance must then be equal to a fiscal surplus.

Now consider a point such as B where in absolute terms $(X - M) > -(G - T)$. Therefore,

$$(X - M) - [-(G - T)] > 0 \text{ or}$$

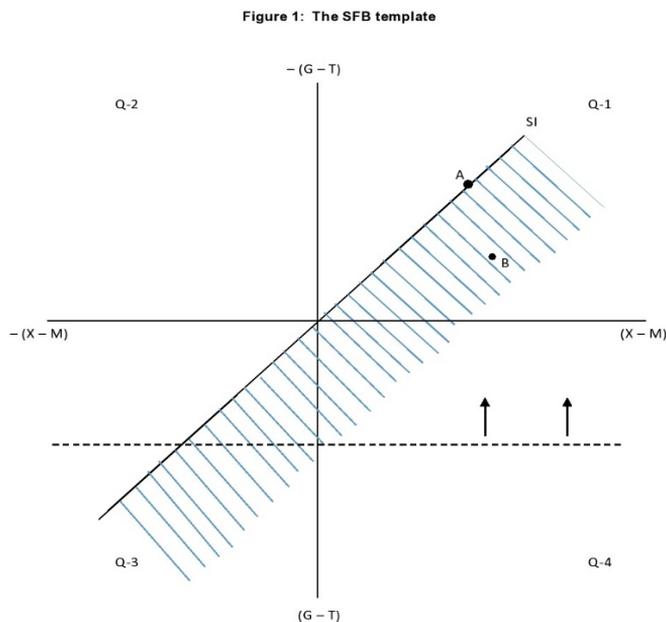
$$(X - M) + (G - T) > 0$$

From equation (2) we therefore have $(S - I) > 0$ at point B. In general all points to the right (left) of the SI line are points where $S - I > 0$ ($S - I < 0$) or the domestic private sector is accumulating a positive quantity of net financial assets (liabilities).

The shaded area in the template where $S - I > 0$, i.e. where the domestic private sector is accumulating net financial assets is considered to be viable space for any economy to be in the longer-term. Post-Keynesian economics, in particular Modern Money Theory (MMT), has elaborately discussed the importance of this simple but essential fact. Drawing from Wray (2011) I briefly explain its logic. Let's begin with a one-sector economy with only a domestic private sector. In such a case, financial assets by one person must be offset by financial liabilities of another; your account in a bank (asset) is offset by the bank's liability to you (deposit). When you take a housing loan, the asset of the finance company (loan to you) to matched by your liability to the company (loan taken by you). While financial assets are always equal to financial liabilities, real assets can still be accumulated. Such real assets are not the liability of another agent in the economy. Consider buying a car; when you buy a car from a company on loan your IOU is the company's asset while it is your financial liability. But the car is now an asset in your books of accounts that it not the liability of the company. While financial assets and liabilities cancel out each other, the car remains the real asset on your books; this is also called net worth or the total assets (financial assets + real assets) minus financial liabilities. To accumulate net financial assets it is necessary for the private sector as a whole to earn more than it spends (keeping aside real assets). This is, however possible if and only if there is a sector "outside" the

private sector which accumulates financial liabilities. In an open economy with three sectors (private domestic, government and foreign sectors) this could be either the government sector (which runs fiscal deficits) and/or the foreigners (who allow the domestic economy to run a current account surplus) and thereby accumulate liabilities in the domestic economy.

What happens if the private sector continually accumulates net financial liabilities? Although this may be possible for a limited period of time, a linear build-up is unsustainable as it would have to settle claims of a sector external to itself within a finite time horizon. In other words, it is spending more than its income; a proposition which cannot continue without end. In fact, if we look at data across most countries, both household and corporate sector savings are usually positive. For China, household savings stood at about 22% and corporate savings at about 20% in 2010 (Ma & Yi 2010). Usually the private sector strives to accumulate financial assets over and above real assets. If targets are not met, it is possible that the private sector revises its propensity to save. Based on these insights, we consider the shaded area in Figure 1 as financially viable and sustainable for an economy.

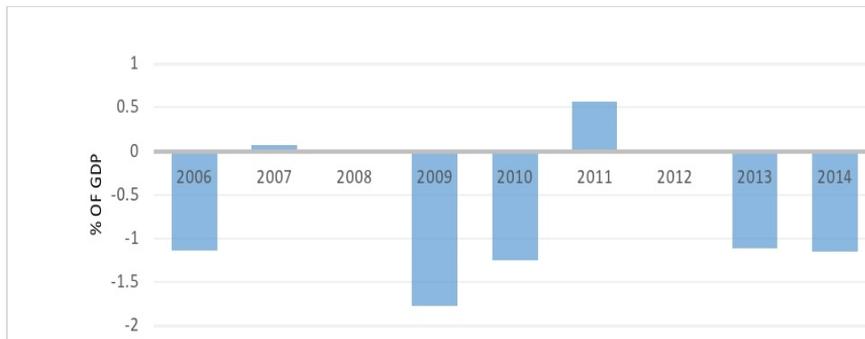


3. Changes in China's Sectoral Financial Balances

Let me begin with $(G - T)$ or the government fiscal deficit. The case of China is little different from the rest of the world. While local governments run a deficit, the Chinese central government usually runs a budget surplus, providing resources to the former. Schramm (2015, p. 247) provides a breakup of governmental finances for the

year 2011; the overall budget deficit was 1% with a central government surplus of 7% of GDP and local government deficits of 8%. Typically China's deficits have remained between 1-2% of GDP. Even the need for stimulus spending in response to the global crisis of 2008 raised the Chinese deficit to just 2.8% in 2010. Figure 2 shows overall Chinese budget surplus/deficit between the years 2006 and 2014.

Figure 2: China's Fiscal Balance



Source: <http://www.tradingeconomics.com/china/government-budget>

A specific fiscal deficit cap^{xii} would constrain the achievable space available to the domestic economy. In Figure 1, only the shaded area above the dotted horizontal line should be considered relevant. The question is whether China has such a self-imposed constraint. An interesting report in the Nikkei Asian Review mentions that:

Few are aware that China has set a target of holding its ratio of fiscal deficit to gross domestic product to within 3%. Beijing had essentially kept that target under wraps before it embarked on a 4 trillion yuan (\$645 billion at the current exchange rate) economic stimulus program in response to the crisis triggered by the Lehman Brothers collapse in 2008.

... Under President Xi Jinping, who took office in autumn 2012, the government has maintained the target by avoiding massive outlays in the face of a slowing economy (Takahashi 2015).

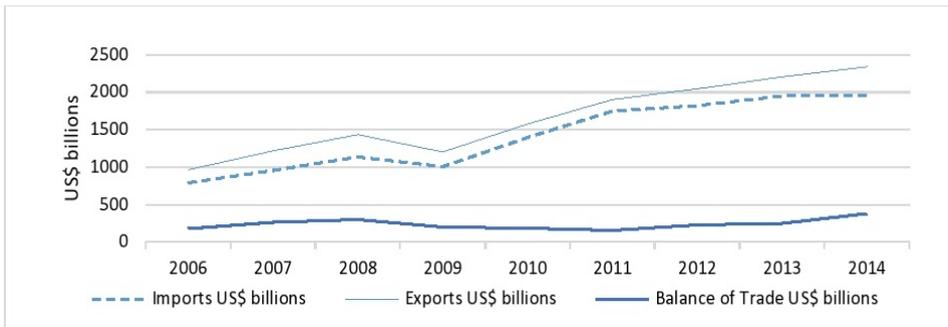
The cap on fiscal deficits has been set on account of the fear of inflation; one of the triggers for the Tiananmen Square pro-democracy protests of 1989 was high inflation rates of nearly 20%.

If irresponsible spending were to trigger a price surge that fuelled social instability, it would shake the foundations of the Xi administration. Officials in the Chinese Communist Party have insisted that even the tiniest signs of inflation must be removed (ibid).

The final element in the SFB equation is the external sector or current account balance, which can be either negative (a deficit) or positive (surplus). The current account on the balance of payments is a key driver of the Chinese economy. While

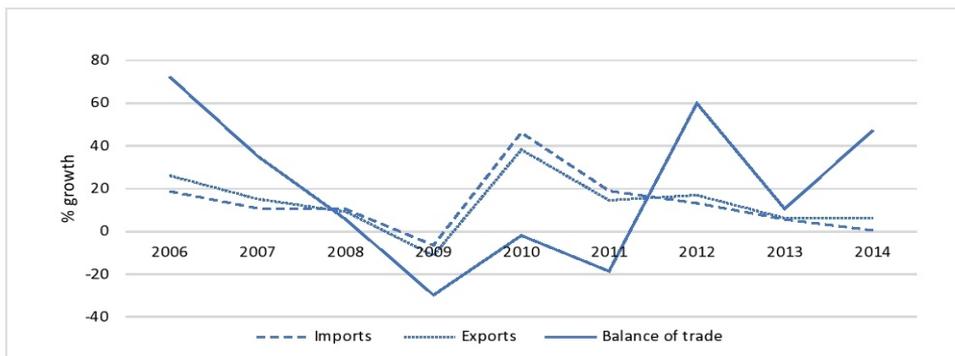
China has consistently realized a surplus on its current account ever since the mid-1990s, steep growth in current account surpluses began from the early 2000s, peaking in 2008 at 10% of GDP. However, since then the surplus has shown a marked downward trend and now stands at a mere 2% of GDP. The general feeling is that the recent devaluation in the yuan was a last bid effort to boost its dwindling exports, which at best only partially true. Figure 3 indicates China's robust balance of trade surplus although Figure 4 cautions that it is a sharper decline in growth of imports which have contributed to a growing positive balance of trade rather than a growth of exports.

Figure 3: Chinese Imports, Exports & Balance of Trade



Sources:
<http://news.yahoo.com/china-2014-trade-surplus-45-9-2-35-023745822.html>
http://trade.ec.europa.eu/doclib/docs/2006/september/tradoc_113366.pdf
<http://wits.worldbank.org/CountryProfile/Country/CHN/Year/2006/Summary>

Figure 4: % Growth in Chinese Imports, Exports & Balance of Trade

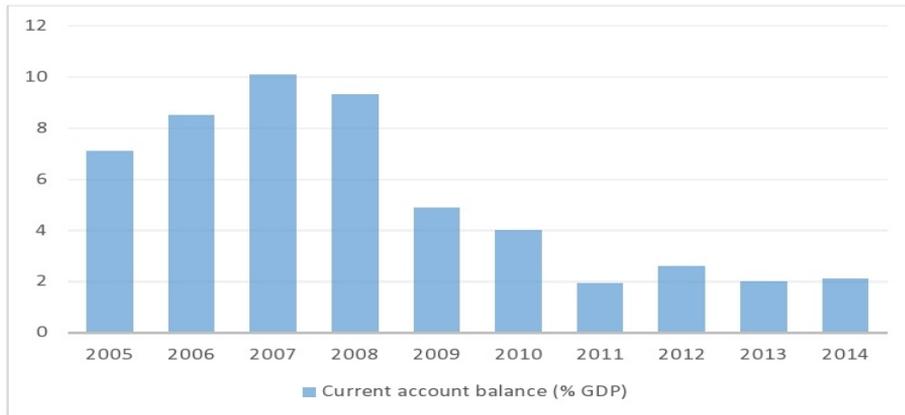


Sources:
<http://news.yahoo.com/china-2014-trade-surplus-45-9-2-35-023745822.html>
http://trade.ec.europa.eu/doclib/docs/2006/september/tradoc_113366.pdf
<http://wits.worldbank.org/CountryProfile/Country/CHN/Year/2006/Summary>

The current account balance trend for China is, however, quite different from its balance of trade; the former showing a secular decline since the 2008 global recession (Figure 5). The declining current account surplus despite a growing trade surplus is because of the growing deficit in the non-tradable component of China's current account (Figure 6). A negative investment income arising due to yields on

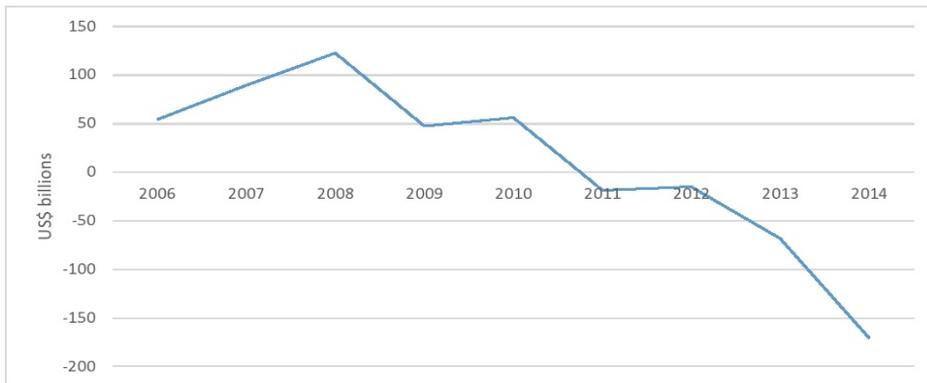
China's overseas assets (2.9%) being half that of its overseas liabilities between 2004 and 2013 (Zhang & Tan 2014, p. 8) has eaten away a significant portion of its positive trade balance, leaving it with a shrinking current account surplus.

Figure 5: Current account balance (% of GDP)



Source: <http://www.tradingeconomics.com/china/current-account-to-gdp>

Figure 6: Non-tradables in China's current account

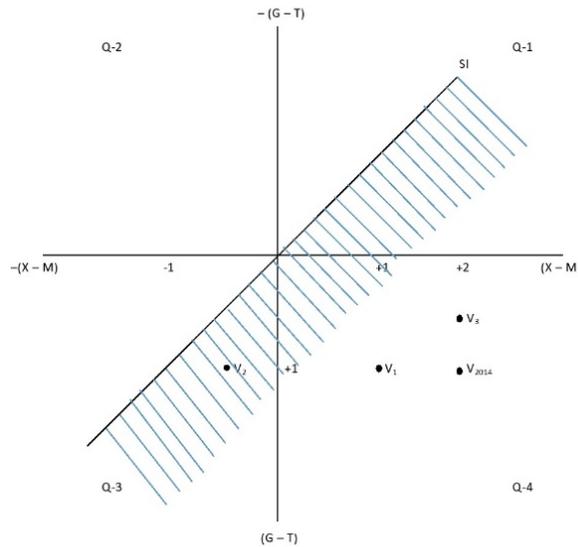


Sources:
<http://wits.worldbank.org/CountryProfile/Country/CHN/Year/2006/Summary>
http://www.google.com/publicdata/explore?ds=k3s92bru78li6_#ictype=1&strail=false&bcs=d&nselm=h&met_v=bca&scale_v=lin&ind_v=false&rdim=world&idim=world.Earth&idim=country.CN&ifdim=world&hl=en_US&dl=en_US&ind=false

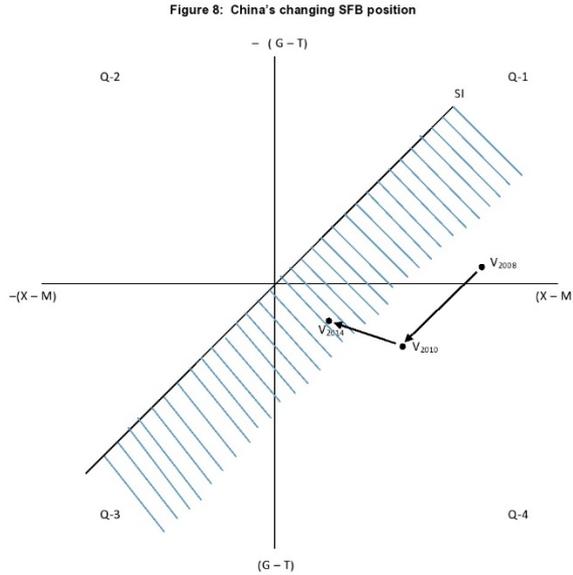
We can now map government and current account balances on the SFB template for the year 2014 (Figure 7). At point V_{2014} with a fiscal deficit of close to 1% and a current account surplus of just 2%, net private financial asset accumulation was restricted to just 3% of GDP. Keeping $(G - T)$ constant, a decline in current account surplus to 1% would mean to a movement to (say) point V_1 where private sector net savings would be just 2%. If China's current account surpluses turn to deficits, it moves to point V_2 where private sector net savings would be less than 2%. Keeping current account surplus at 2%, any cut in the fiscal deficits (like point V_3) would mean

the accommodation of a smaller level of net financial private sector savings. In a nutshell then 3% (V_{2014}) is the maximum level of domestic private sector asset accumulation that can take place in China presently given the levels of fiscal deficits (1%) and current account surpluses (2%).

Figure 7: Changing elements in China's SFB equation

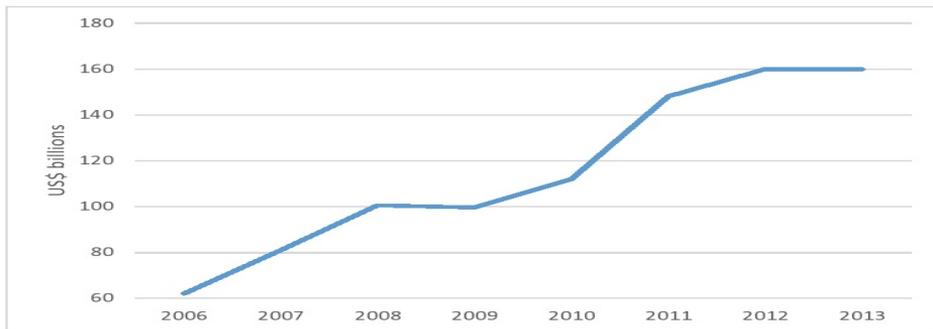


The critical question is whether the private sector is satisfied with its level of net financial asset accumulation? As shown in Figure 8, consider year 2008 or point V_{2008} when the fiscal surplus or $-(G - T)$ was 0.58% while current account surplus or $(X - M)$ was 9.5% of GDP. Net financial accumulation by the private sector^{xiii} ($S - I$) would have then been at point about 10% of GDP. In 2010 China moved to point V_{2010} with a fiscal deficit of $(G - T)$ at 2.8% while $(X - M)$ fell to 4.8% of GDP. Private sector net financial accumulation would then have been 8% of GDP.^{xiv} However, as seen is the paragraph above V_{2014} stands at just 3%. The negative trend in the level of net private savings is, I contend, a significant cause of worry for China. Is there likely to be a revision in levels of private sector savings and investment given that it now stands at just 60% of 2010 and 50% of 2008 levels? To answer this question, we must briefly delve into each element of private sector savings; S and I.



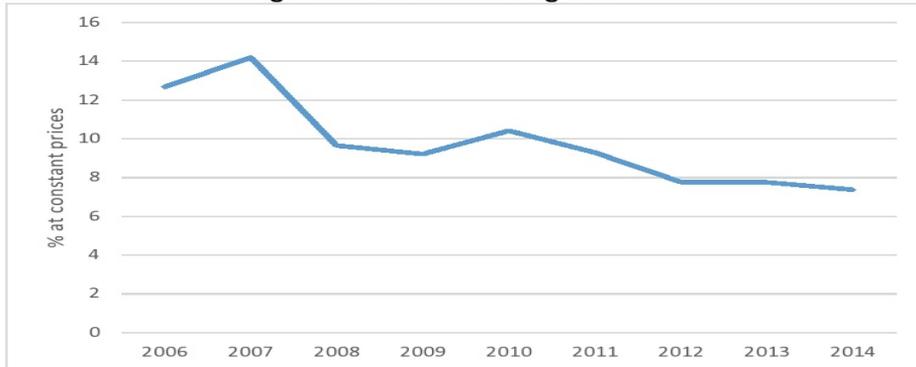
On the private sector investment (I) front, there is imminent possibility of it declining on account of several reasons; large amounts of accumulated debt (Figure 9), low capacity utilization and accumulating non-performing liabilities in certain sectors. In addition to these reasons, it is the downward trend in China's GDP growth rate (Figure 10) that could induce severe stress on the corporate sector as it struggles to service debt in the face of a slowdown in growth of revenues and profits. The fear of "deleveraging" then by the corporate sector – selling off assets to repay debt – is a possibility although its magnitude remains uncertain. At the same time, falling investment would also induce reduction in GDP growth, triggering off a vicious cycle of contraction in investment and output growth. It is this volatility in investment which, as Keynes feared, makes capitalism inherently unstable and vulnerable to business cycles.

Figure 9: China's private sector external debt stocks



Source: <http://www.tradingeconomics.com/china/external-debt-stocks-long-term-private-sector-dod-us-dollar-wb-data.html>

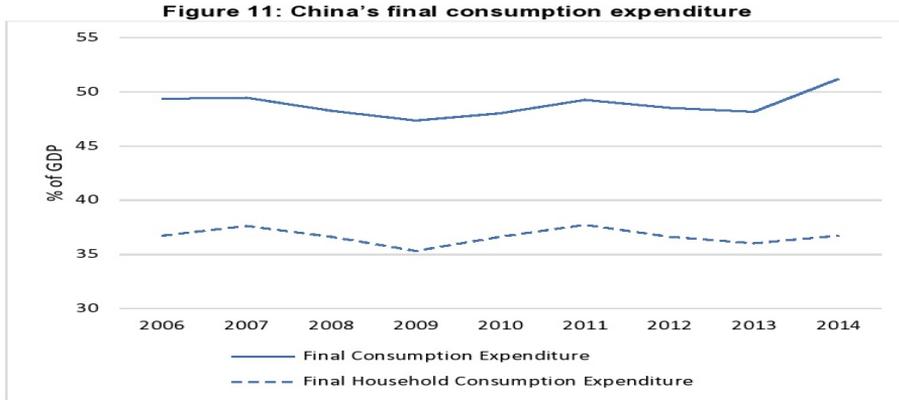
Figure 10: Chinese GDP growth rate



Source: http://www.google.com/publicdata/explore?ds=k3s92bru78li6#!ctype=l&strail=false&bcs=d&nselm=h&met=y=ngdp_rpch&scale_y=lin&ind_y=false&rdim=world&idim=world:Earth&idim=country:CN&ifdim=world&hl=en_US&dl=en_US&ind=false

What could be the impact of falling investment on net private sector asset accumulation and adjustments likely to follow? All else constant, a decline in investment will mean an increase in $(S - I)$ and a consequent disequilibrium in SFB. Something will then have to give way; slowing investment and a slowdown in GDP growth (which is already a concern for China) would prompt a fall in the quantum of savings, tax collections and imports *assuming a fixed marginal propensity to save, tax and import respectively*. The economy would settle at some lower level of Y where equation (2) would hold. But is this assumption on marginal propensities remaining fixed realistic in the context of China? It is likely that the marginal propensity to save in particular may witness an upward revision on account of the general sentiment and flagging confidence in China's growth story as well as the huge losses suffered by the public in the stock market collapse.

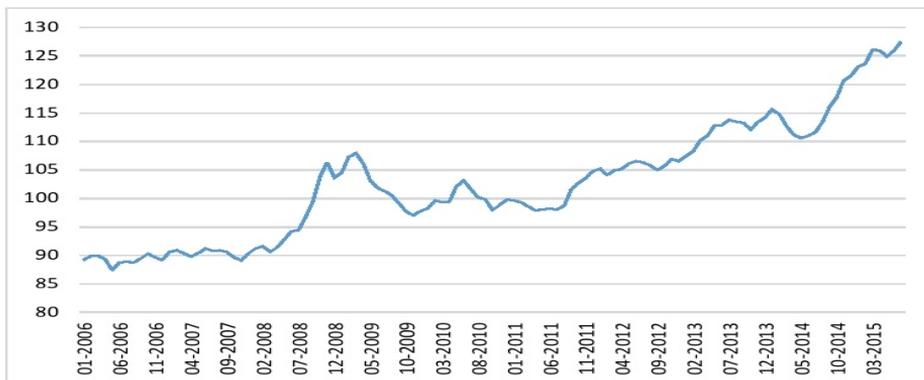
While there has been much discussion on the need for China to raise its level of domestic consumption expenditure, it remains doubtful whether this can actually happen to the extent required. Figure 11 shows trends in Chinese consumption data – it is evident that there has been only a marginal increase in its growth since 2013. Several studies find that the precautionary motive seems to have a major bearing on Chinese household savings propensity (Liu 2014). If the desired level of net asset accumulation by the private sector cannot be met at its present 3% level, the need for adjustment in the other components of SFB is inevitable. These adjustments must, however, not emanate from declining GDP. How is this possible?



Sources:
<http://knoema.com/OECDNA2014/oecd-national-accounts-at-a-glance-2014?tsid=1053240>
http://www.stats.gov.cn/english/PressRelease/201501/t20150120_671038.html
<http://www.indexmundi.com/facts/china/final-consumption-expenditure>
<http://data.worldbank.org/indicator/NE.CON.PETC.ZS>

First, the Chinese government will have to make attempts to increase exports. Devaluation of its currency is not only necessary but also considered legitimate given the trend in the real effective exchange rate (Figure 12). Second, the current account could slide into negative territory – this could happen due to fall in exports and/or an increase in imports. The former would, however, have a severe impact on China's GDP growth while the latter would run contradictory to depreciation of the yuan. Third, the government could increase its fiscal deficits. Increased accumulation of governmental liabilities could not only raise GDP growth but also allow the private sector to reach their desired net financial asset accumulation targets. Moreover, with Chinese public debt at less than 60% of GDP, the government has sufficient space to increase the fiscal deficit. There are already reports that 2015 deficits would be in higher at 2.7% of GDP. But the big question remains; will the Chinese government renege on its self-imposed constraint of ensuring that the fiscal deficit does not exceed 3% of GDP?

Figure 12: Effective exchange rate



Source: <http://www.bis.org/statistics/eer/>

Soon after the stock market crisis in August 2015, there were indications that this process was already underway;

Finance Minister Lou Jiwei said that central government spending will rise 10 percent this year, more than the 7 percent growth budgeted at the start of the year, according to a statement late Saturday on the People's Bank of China website.^{xv}

4. Conclusion

It is unlikely that, given the declining GDP growth trajectory of the Chinese economy along with the recent stock market crashes that the desired level of private sector net financial accumulation in China will be revised downwards. In such a situation, China will make a concerted effort to raise its current account surpluses through currency devaluation/depreciation. If success is limited by currency wars between emerging market economies, we must inevitably see a rise in government fiscal deficits to accommodate the desired level of private sector net savings. If this does not happen it is likely that there will be an upward revision in Chinese household marginal propensity to save and sluggish consumption expenditure induced recession.

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Notes:

¹ Reuters, China defends devaluation, sees "limited" impact, 29 Aug 2015, available at: <http://www.cnbc.com/2015/08/29/china-defends-devaluation-sees-limited-impact.html>

² Christine Lagarde, The transitions of 2016, 31 Dec 2015, available at: <http://www.livemint.com/Opinion/h994MmblOmhwG8i56hJDXP/Christine-Lagarde--The-transitions-of-2016.html>

³ Though we usually speak of imports and exports, these include goods, services as well as non-tradable items on the current account.

⁴ This is a self-imposed constrained by governments.

⁵ Data for private sector only is not easily available; figures on gross savings and investment for combined household, corporate and government sectors are more commonly available.

⁶ Many advanced countries of the world maintain specific accounts pertaining to sectoral financial balances. In such cases equation (2) is met when we consider each financial balances of each sector independently. In the case of China, like many other less developed countries, we cannot find specific accounts of these three sectors, especially net financial asset accumulation of the private sector. We have, therefore, taken (S – I) based on government and current account balances.

⁷ Reuters, *China emphasizes stability at G20, fiscal spending quickens*, 6 Sept 2015, available at: <http://www.reuters.com/article/2015/09/06/us-g20-china-economy-idUSKCN0R604T20150906>