A Forward-looking Liquidity Stability Paradigm in China

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From earlier financial crises to crisis occurred recently, there are signs from real estate market that the housing prices usually increased dramatically before the crisis, even when the CPI inflation was not significant. Whether the housing price should be under surveillance? Can we construct a forward-looking policy framework to prevent financial instability? In this paper, I reviewed research results on this issue, by introducing housing price as a pre-alarming indicator we could subtle adjusts the conventional policy framework. Through working on the transmission mechanism of liquidity and how it causes the housing price inflation, I construct a forward-looking liquidity stability paradigm in China. By surveillance housing price, we could build a forward-looking policy framework to absorb shock from possible future bust for maintaining the financial stability.

I. Literature review

Recent researches have found that price stability alone as a goal of central banks might not enough. The pursuit of price stability may not enough for central bank to maintain financial stability as changes in indicators they look at when setting monetary goal matters. (William R White, 2006) In some situation, assets and credit expansion indicates the excessive demand pressure, rather than in goods and service prices. (Claudio Borio and Philip Lowe, 2002) On the prudential side, thinking further to address the potential excessive risk accumulation; while on monetary side, stay alert at the anchor that could detect the financial instability even if the inflation pressures are not apparent. Hence, the subtle modification of current policy framework in both the financial and monetary spheres is needed. (Claudio Borio and William White, 2004) Meanwhile scholars have different opinion on using housing price as surveillance indicator. The housing price is mainly relevant to countries dominated by a single cosmopolitan area. According to Stock and Watson's paper, housing price per se has no stable power to forecast the economic activity. (Mark Gertler, 2004)

For curbing the boom and burst into a mild range, the previous researches have already reached some outcomes. The basic principle we learn from the financial cycle is to build reserve cushion in doom time and delusion it in bust period. If policy failed to constrain the boom period sufficiently, they had to address the coming balance-sheet imbalance in consequence. (Claudio Borio, 2012) The Federal Reserve Bank of Kansas city annual conference held in Jackson Hole, Wyoming had reached Jackson Hole consensus on the mandate of monetary policy.[1] Unconventional instrument like asset purchasing maybe conducted like a conventional toolkit in normal times. The pursuit of price stability alone is not sufficient although it worked well in Great Moderation period. The macro-prudential policies focusing on the source of *irrational exuberance* seems more appropriate. (Charles Bean, Matthias Paustian, Adrian and Tim Taylor, 2010) On the progress report to G20 regarding the macro-prudential tools and frameworks, three consensuses has been build in framing the whole picture of maintaining financial stability. Tools and macro-prudential principle should be promoted in a common understanding. While each nation has to cooperate with their own authorities in implementing these toolkits with their local historical experiences. (FSB, IMF, BIS, 2011) Above all, the forward-looking financial stability paradigm is not a generally common but have own freedom to tailor it into each nation's own circumstance.

II. The necessity of housing price surveillance in China

Facts in past financial crisis also evidenced the importance of real estate market surveillance. The Great Depression in US in 1930s, while inflation is not so significant, there is rapid rise in equity and real estate prices. In Japan's lost decade, the sharp increase in credit and asset price also explicated the pressure of financial instability. Asian Financial Crisis in 1990s, the real estate price increase accompanied with large amount of capital inflow. In recent Europe crisis, a significant asset price hike is one of the main features.

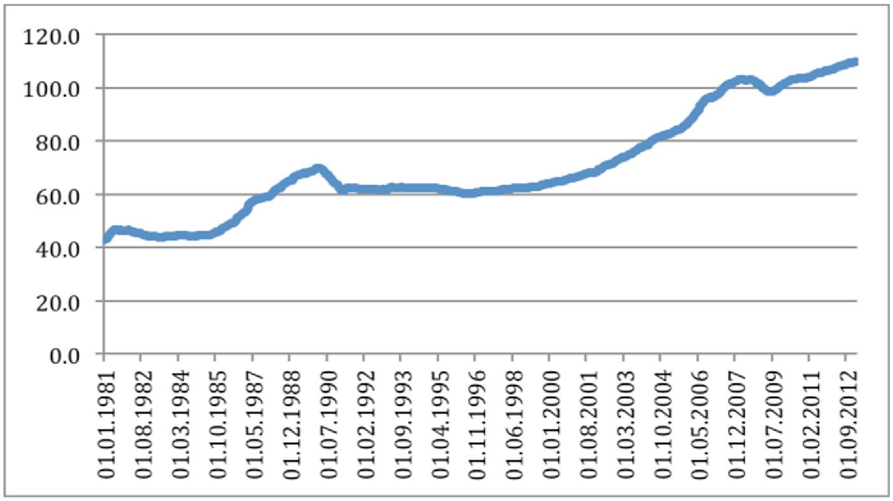
Previous researchers have already worked on the relationship between housing price, credit easing and capital investment. The preliminary statistical analysis of credit, asset price and investment indicates that a credit gap and an asset price gap provide the optimum forward-looking indicators for implementing forward-looking policy instruments. While investment gap has no significant improvement in predicting the future instability. (Claudio Borio and Philip Lowe, 2002) They look at three particular combinations among credit, asset prices and investment and figure out the optimum threshold and combination. The result found that a credit gap of 4 percentage points and an asset price gap of 40 percent could be the combined threshold values. (Claudio Borio and Philip Lowe, 2002) Hence, the above results could be used as a reference of calibration to judge when a forward-looking policy should be conduct. The value needs to be tailored according to each economy's own practical experience.

In China, take Beijing's new property price index as an observe indicator, we found similar trend among real estate price, the credit to private sector increase

[1] Charles Bean, Matthias Paustian, Adrian Penalver, Tim Taylor. (2010). *Monetary Policy after the Fall*. Federal Reserve Bank of Kansas City Annual Conference. Jackson Hole, Wyoming.

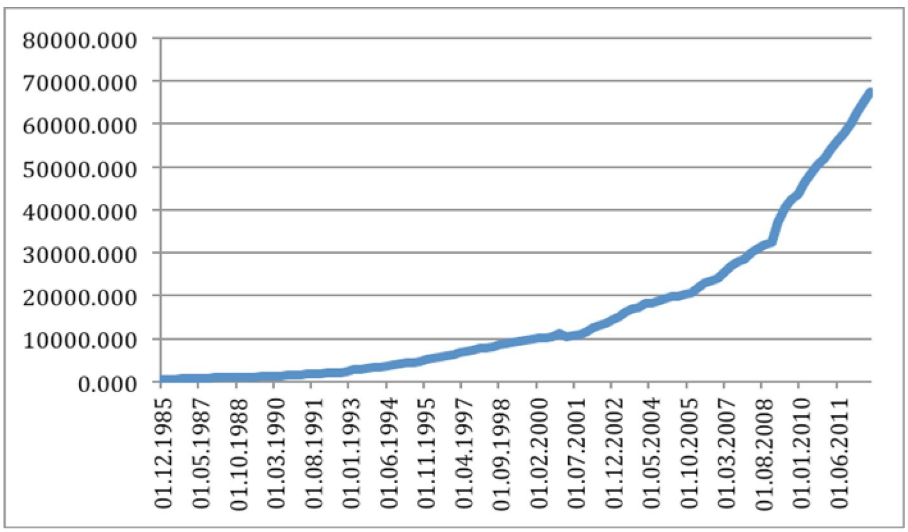
and FDI net capital inflow. In Beijing, the housing price was booming from 1981 until now, as we could see, there is sharp increase since 2001. (See Figure 1) Although housing reform began from 2005 may speed up the price hike, we could still see the credit booming and foreign direct investment net inflow raise their heads as early as 1990s. (See Figure 2) Though in FDI capital inflow chart there was a trough around year 2008 indicating the global financial crisis, it still maintains the upward trend after the crisis. (See Figure 3)

Figure 1: Beijing New Resident Property Price Index monthly data
(2007=100, Structures & Land/ m^2, non-seasonal adjusted)



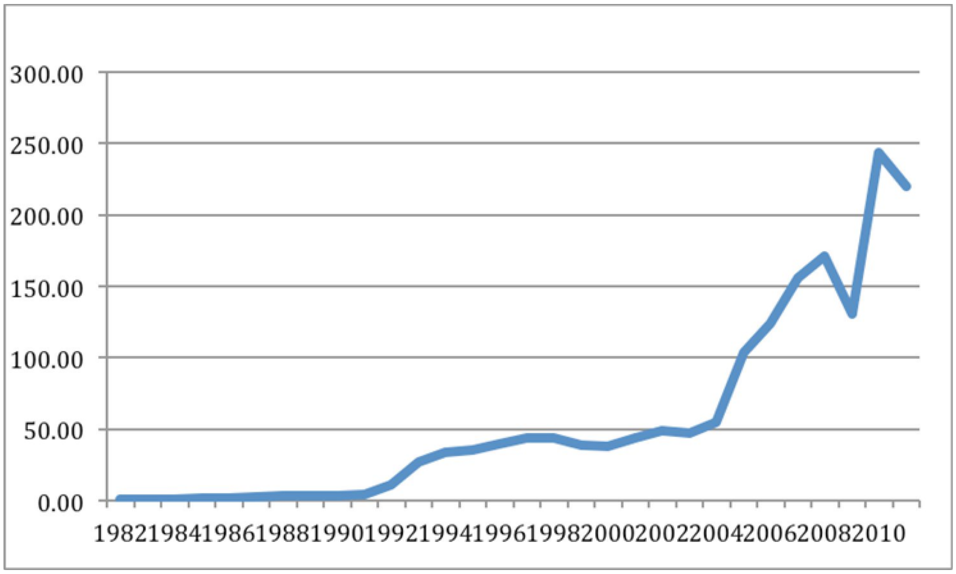
Sources: BIS database

Figure 2: Credit to Private Sector in China quarterly data
(1985-2012, billion Yuan, Seasonal Adjusted)



Sources: BIS database

Figure 3:Foreign Direct Investment Net Inflow in China yearly data (1982-2011, billion US$, non-seasonal adjusted)



Sources: World Bank database

The data problem could be the major problem for me to verify that connection between housing price and its effectiveness as forward-looking indicators. Due to lack of data and different calibration, we could hardly use empirical analysis model to testify the contribution of each factor that influenced the housing price in Beijing. However, by comparing the fluctuation of each chart, we could tell that the dependent variable----housing price has log-level connection with independent variables----bank credit to private sector and FDI net capital inflow. If we need to put the paradigm into practice, more empirical analysis is needed. The housing price data needs to be well organized and transparent for further research.

III. The dilemma of conventional policy framework

The weakness of conventional policy framework represents in three aspects: *First*, the conventional policy has less toolkits in curbing the upcoming bust. It only contains monetary policies as well as fiscal policies. Despise the evolving of monetary policies has reached far way since the formation of Great Moderation, the limited instruments and regulation tools have constrained the effectiveness of these policies and its scope in preventing significant bust from happening.

Second, the goal of price stability for monetary authority is not enough to maintain the financial stability. From previous research, except the price stability we still need more supplementary. Inflation in goods and service sector which used to be the key anchor for maintaining price stability has disadvantage, since the assets price has been regarded to be more sensitive in forecasting the upcoming instability. Housing price, which is the main constitutional part of assets price, is the most superficial and easy to observe indicator for alarming the early over-heated economy.

Third, the instruments for conducting the monetary and fiscal policies are mainly not so effective in controlling the excessive liquidity. Conventional policy instruments like interest rate, reserve rate requirement of commercial banks and discounting rate of loans from central bank largely influenced by the public's expectation of the future. Which means that they are not so effective in tightening the market when optimistic future assures more risk-taking behavior by the public. Same mechanism for the fiscal policy instruments, as they are much more effective for stimulating the market rather than regulating. (Claudio Borio, 2012) Therefore, the conventional policy instruments need more evolvement or supplementary to put on regulation perspective.

The dilemma of conventional policy framework is that the policies for stabilizing the liquidity always have lagging effects on the currently hot economy. *First*, it takes time for housing price inflation transmits to CPI inflation. The overheated economy has syndromes like assets bubble, stock hike price etc. While these excessive liquidity pressure might not transmit immediately to the goods and service sector, which is CPI inflation. The burning housing price stimulates the profit-seeking (risk-taking) behavior of credit intermediaries, hence induces more credit liquidity. Also, inflationary expectation will drives FDI and other sorts of capital inflow more aggressively. Both of the liquidity flooding circles may result in an *irrational exuberance* with housing price fever but moderate CPI inflation. As liquidity continues booming with inflationary expectation cooling down becomes the worry of over-heated economy, the capital flight and financial instability may occur.

Second, conventional policy framework anchors on CPI inflation only, hence, not until there is significant CPI inflation will policy authorities response. This could be lagging behind the *de facto* housing price inflation. Boom period coexists with the assets price inflation; the lagging response of central bank may conduct the tightening policy to economy when actually a bust has already on the way. This policy may actually deteriorate the situation of economy and speed it heading to trough. It has a high probability of being wrongly used or has contrary effectiveness because of the misjudgments. In order to avoid such misjudgments, a forward-looking liquidity stability paradigm should be build to prevent sudden bust of economy.

IV. A forward-looking liquidity stability paradigm in China

The transmission of financial liquidity generally floats from monetary base to housing market. (See Figure 4) There are internal sources and external sources that aggregate liquidity. The internal sources mainly from domestic credit booming by credit intermediaries such as commercial banks; while the external sources mainly from international capital inflow such as FDI, portfolio investment etc. These two sources contribute to over liquidity in domestic market, and increase the monetary base if the currency exchange rate is not resilient in addressing the appreciation pressure. Without the sterilization from central bank or other authorities, the increase of monetary base could reflect on stock market and assets price, causing the increase of fixed assets price such as housing price. (Hiroyuki Taguchi, 2011) This could be more serious if the domestic government policies mainly targeting on curbing the housing price inflation, as the over-liquidity may find other channels like goods or service sectors to release its pressure, hence the increase of CPI. (Claudio Borio and Philip Lowe, 2002)

The policy responses to calm down the excessive liquidity and control the financial stability could be different according to the reaction of market. *First*, for the liquidity sources, there are two corresponding ways for addressing the problems. For internal sources----the excessive credit booming, macro-prudential instruments are the optimal choice. The requirement of capital credit ratio could directly regulate the behavior of commercial banks; meanwhile build the capital cushion in the boom period. For external sources----the excessive capital inflow, it is almost impossible to predict the capital flow direction since they are controlled in the hands of international investors. The uncertainty of capital flight could create huge damage to the economy, for it had been proved in 1970s Asian Financial Crisis. Hence, the newly issued instrument----Capital Flow Management (CFM) could be one of the unconventional tools for maintaining financial stability in special period. CFM is one measurement that recently proposed by IMF in order to formulating a framework for the further and maintaining risk-less liberalization of one economy. It is part of the financial stability framework rather than merely macroeconomic policies. The aim of CFM is to help recipient countries better stabilizing its market and liquidity, by coordinating, adjusting and sequencing structure reform in its own pace. Following this step, the liberalization process would be harmless for the economy, and maximize policy effectiveness in a risk-less gradual procedure. (See Figure 4)

Second, polices compounds should be coordinated to absorb the excessive liquidity in the market. Especially the macro-prudential monetary instruments should be considered once the monetary base is detected increased significantly over certain thresholds. The conventional policy tools could still be effective in addressing the over liquidity problem in the market. We base on these policies as pillars of forward-looking liquidity stability paradigm with consideration of the policy time.

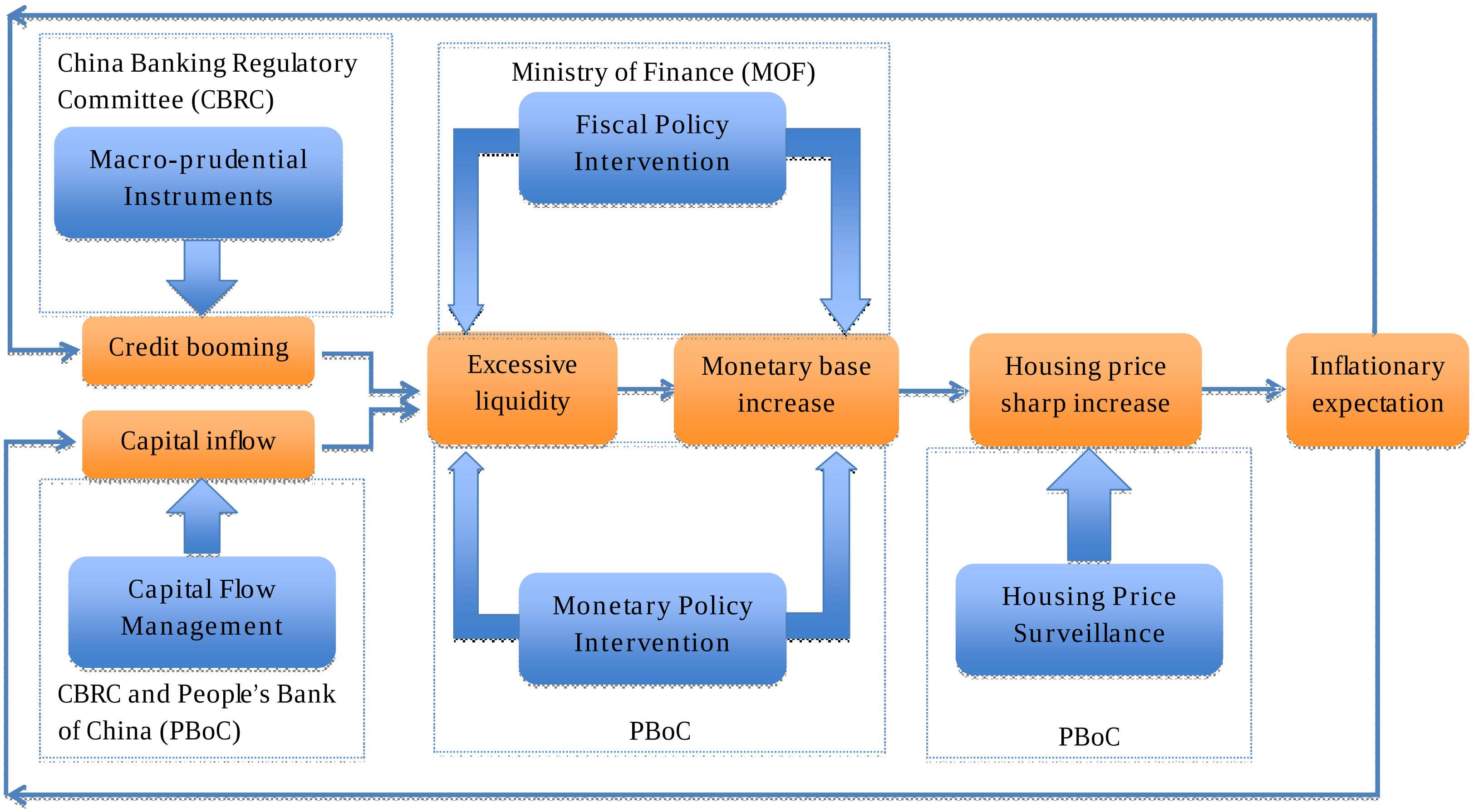
Third, in the real economy sector, a matured surveillance and pre-alarming framework is always beneficial for transmitting the signal of deteriorate risks in real economy sector to policy makers. Since the domestic policy might be useful for calming down the market fanaticism, but it may also hurt the confidence of investors and cause the unwanted inflationary expectation. The possible capital flight by pessimistic inflationary expectation brings more risk to financial stability and economic development as a whole. Hence, the assets price that has been regarded as to be more sensitive to stock price, is necessary to be a supplementary to consumer price for central bank. (Claudio Borio, 2004) The housing price that occupies the large proportion of assets price is relatively easy to detect, could be used in build this pre-alarming framework. As it is volatilely by region, its surveillance should be based on regional aggregation. Central bank in China, the PBoC, which has branches homogenously in geography, could be the leading authority in building the housing price surveillance and pre-alarming framework.

One of the critical anchors of central bank that needs to put an eye on is the inflationary expectation. As we looking back at the sources of excessive liquidity, one comes from internal sources----the excessive credit booming; the other comes from external sources----the huge amount of capital inflow, both are originated from the aggregate demand in the domestic market. The aggregate demand based from the optimistic view on the economic outlook, which is the positive inflationary expectation. The positive expectation encouraged risk-taking from both private sectors and credit intermediaries; hence the behaviors from two sources are strengthened and encouraged. Two liquidity injection circles are formulated. (See Figure 4)

The over-liquidity boom may hardly be detected in its boom period with positive expectation of future outlook. This could be evidenced from the phenomenon in China that people would rush to buy houses before the domestic tightening policy issues. The phenomenon could hardly fulfill the assumption of "rational individual" in economic theory. (Shujie Yao, Dan Luo and Lixia Loh ,2011) The positive expectation will cause *irrational exuberance* even if the tightening policy may come out soon. If the positive expectation spoiled the investors' confidence, that is too say, the market becomes over-heated or show some signs of slow down, then the capital flight may occur, reversing the continuity of liquidity injection to the market. What policy authority can do when liquidity supply chain broken is releasing the liquidity in the market, meanwhile implement CFM instrument to delay or reverse the situation.

The reasons that why aggregate demand shows significantly in housing price rather than other channels like stock price in China depends on various reasons. This field calls for further research.

Figure 4: A forward-looking liquidity stability paradigm in China



V. The forward-looking liquidity stability policy framework

The forward-looking liquidity stability policy framework has differences with conventional policy framework in general. (See Figure 5) It has three advantages than conventional policy framework.

First, it combines the macro-prudential policy and CFM instrument into the policy compound. Macro-prudential policy aims at regulating the credit intermediaries; the Basel III mainly constrains the capital capacity of credit easing institutions. By counter-cyclical leverage tool, they could efficiently build the capital reserve during the boom period for cushioning further shock to financial system. To achieve both capital reserve and not impeding the normal operation of financial institution, these instruments needs thresholds to exert optimum effects. CFM instrument assists object economy in managing capital inflow and stabilizing its liquidity flow in a sequential way.

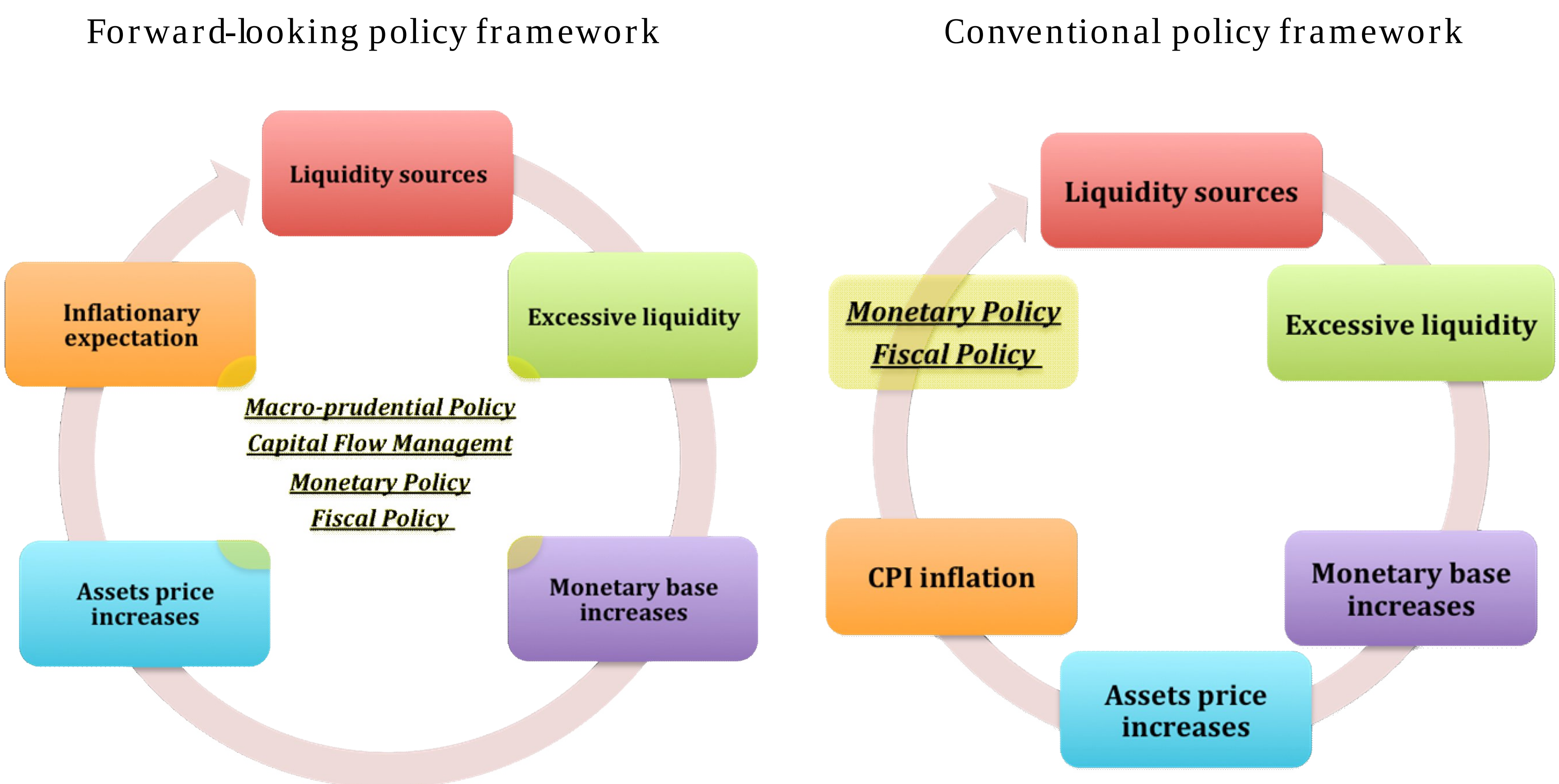
Second, the anchor of policy authority should be changed from mere inflation to inflationary expectation for forward-looking purpose. The expectation of the public and investors arrives more prevail than actual inflation become significant in consumer price level. By assessing the expectation of economy market, the forward-looking policy paradigm could save time for the policy authority instead of tracking the turning point and responding in the misjudged time, and effectively curb the peak and trough extension into a mild range.

Third, the asset gap and credit gap have been considered to be complementary indicators of CPI price, to assess whether forward-looking policies needed to be implemented or not. The build up of housing price surveillance and pre-alarming framework could be an efficient transit media between the policy authority and implicit risk in real economy sector.

Table 1: General comparison between conventional policy framework and forward-looking policy framework

	Conventional framework	Forward-looking framework
Constitution	Monetary Policy Fiscal Policy	Macro-prudential Policy Capital Flow Management Monetary Policy Fiscal Policy
Objective	Price Stability	Price Stability Financial Stability
Indicators	CPI	Asset Gap Credit Gap
Context	Free floating foreign exchange market	Surveillance on housing price

Figure 5: General comparison between conventional policy framework and forward-looking policy framework



VI. Conclusion and aspects that needs attention

The main function of forward-looking liquidity stability paradigm is putting safety net of financial regulation instruments at their places before the significant indicator show the sign of over-heating, taking actions based on the performance of leading indicators to curb the excessive liquidity and risk-taking behavior in financial system as a whole. By adopting this paradigm, we do not need to wait for the turning point or significant change in CPI indicator, but surveillance on the housing price together with other leading indicators and conduct forward-looking policy instruments with proper jurisdiction, so as to absorb the shock of possible future bust in economy.

There are several aspects that need attention before we put this forward-looking liquidity paradigm in China into practice.

First, ensure the coordination between the policy authorities. The liquidity stability paradigm needs coordination between policy authorities to make sure the policy directions are consistent, so that the policies effects will not be counteract. In forward-looking paradigm in China, CBRC and PBoC, as well as MOF need to coordinate under one regulation goal to maintain liquidity stability.

Second, set up intermediary financial stability authority that responsible for communication between international organization, such as IMF and BIS, WB etc, and China's domestic authority. The guideline for maintaining financial stability from international organizations are general, China has its own unique economic development situation and regional geography differences, hence the intermediary authority has its function to tailor the international principles into its own size. Meanwhile, international organizations can also get immediate feedback directly from this authority. This authority could be one of the main functions within PBoC, for both convenient for accessing the resources in PBoC and maintain good coordination channel.

Third, more empirical analysis with clean data series is needed. Besides refining the continuity of data collection from housing market and setting up the housing price surveillance and pre-alarming framework, more experiences from learning, researching and practicing in maintaining liquidity stability are needed. For example, to conduct a forward-looking policy, PBoC and CBRC needs more experience in exploring the thresholds of policy calibration, the extent of jurisdiction etc. The housing price surveillance can be coordinated within the regional branches of PBoC in China. Thus, it is surveillance on a regional level. The practical experience for implementing forward-looking policy instruments in specific city needs long time practice. Hence, both horizontal and vertical communications among policy implementers are needed.

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