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Is the US quantitative easing more effective than China's? A second thought☆

Kaihua DENG [a,*,1], Walker TODD [b]

[a] Hanqing Advanced Institute of Economics and Finance, Renmin University of China, Beijing 100872, China
[b] American Institute for Economic Research, Great Barrington, MA 01230-1119, USA

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ABSTRACT

We study the balance sheet of the People's Bank of China and the Federal Reserve Bank in a historical context and analyze whether the recent round of global expansionary monetary policy has been effective in achieving its desired economic effects. In particular, we focus on the roles played by excess reserves, monetary aggregates and financing to the real economy and highlight the tension between a liquid financial sector and an illiquid real sector. We show that, while both China and the US have followed reserve-driven growth strategies, the compositions and relative sizes of these quantities are quite different. In relative terms, excess reserves and lackluster corporate lending constitute a big problem for the US, whereas for China the pertinent question is how to further mobilize funds tied up in the real estate and stock market. We provide some thoughts on possible solutions to the current policy dilemma at the end.

1. Introduction

On 22 January 2015, the European Central Bank (ECB)—following the Bank of Japan, the Federal Reserve Bank (the Fed) and the Bank of England—announced an expanded bond buying program adding more momentum to Europe's so-called long-term refinancing operations. At a time when the Fed just called an end to the third round of Quantitative Easing (QE3) on 29 Oct. 2014 and when economists were already debating about the debilitating effects of "QE infinity" if the Fed didn't move fast enough to lift interest rate, the policy move by the ECB turned quite a few heads indeed. Despite these efforts, central banks in the West have found that even reductions of policy rates to close to zero have been insufficient to generate stable economic recoveries. Showing no signs of retreating, the heated policy debate has by now prompted many researchers to evaluate the effectiveness of various QE programs in terms of, say, bank loan initiation and financing to the real economy. Since each country has its own version of QE, any reasonable comparison must be based on clearly defined economic measures. See Aït-Sahalia, Andritzky, Jobst, Nowak, and Tamirisa (2009); Cúrdia and Woodford (2010); Eggertsson and Woodford (2003) and Lenza, Pill, Reichlin, and Ravn (2010) for some earliest reviews of unconventional policy tools used by major central banks in response to recessions.

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* Corresponding author.
E-mail address: dengk@ruc.edu.cn (K. Deng).
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In this paper we focus on the recent monetary policy experiences of China and the US and study how the two countries have differed in achieving their economic outcomes. It should be noted at the beginning that the scope of the US QE is not exactly the same as that of China's. In the US (also Japan during 2001–2006 and recently the Eurozone), QE is usually understood as a policy that expands the balance sheet of the central bank after policy interest rates have been driven to very low levels as a result of the monetary authority flooding the market with excess reserves; see Bernanke and Reinhart (2004) and Bernake et al. (2004). The explicit intention of such a policy therefore is to increase the supply of bank reserves beyond the level required to keep the policy rate near zero, hence the term "unconventional." According to this definition, it is clear that the Fed is now constrained by the zero lower bound (ZLB) and conducting monetary policy has become all the more challenging. The situation is different for China which has positive interest rates relative to the interest paid on reserves, so we take a broader view and define China's QE to be an expansion of the PBOC's balance sheet. Although both versions of QE consist of a vast expansion of the balance sheet, they differ in monetary policy effects. For China—which is not constrained by the ZLB—monetary policy has traditionally had large and persistent impact on output; see Dickinson and Liu (2007) and Sun (2013). For the US the story is less straightforward. Cúrdia and Woodford (2011) argue that QE is not likely to be effective at close-to-zero interest rates unless there is some particular financial friction that has unexpectedly become relevant following the financial crisis, in which case the supply and demand of credit will shift in a tractable manner. Their theory shows that absent such frictions the conditions needed to justify central bank lending relate more to the severity of the distortions in particular markets and to the costs of intervention in those markets, rather than to aggregate conditions such as the ZLB. Accordingly, the policy prescription is that when the financial market is sufficiently disrupted carefully tailored asset purchases in targeted markets might be more effective; see also Cúrdia and Woodford (2010). For a comprehensive review of unconventional monetary policies at the ZLB, see Woodford (2012). In Section 4.2, we will come back to this point and provide some thoughts on asset refinancing and purchases.

Currently in China, a sweeping sentiment is that the US QE is more effective than China's and probably anyone else's. The reasons are manifold, ranging from anecdotal evidence heard in the news to respectable company names such as Apple and to the fact that the big banks repaid their rescue funds pretty fast. One common strategy is to downplay China's recent efforts in interest rate liberalization, Renminbi globalization and reform of the state owned enterprises (including commercial banks). The logic then goes something like this: Because of the many imperfections in China's capital market, banks—the primary source of firm credit—are selective in issuing new loans to an average firm, thus the real economy can only benefit from QE to very limited extent. To make things worse, they argue, sooner or later most of the funds unleashed from the monetary stimulus will pour into real estate and "irrational exuberance," i.e., the stock market.

Turning next to the US, two frequently cited market barometers are its stock price and bond market activities, both of which appeared to be promising. Until recently the steady growth of the US broad-based market indices have made many believe that the US has been much more successful in conducting its QE than the others—despite that economists in the US have warned about another ongoing domestic bubble since early 2015. Speaking of the bond market, the US Treasury term structure has been flattened out by a great deal. Hamilton and Wu (2012) predict that, at the zero lower bound, buying USD400 billion in long-term maturities with newly created reserves could reduce the 10-year rate by 13 basis points without raising short-term yields; see also Doh (2010) and Gagnon, Raskin, Remache, and Sack (2011). It is often argued that one of the most fruitful achievements of the US QE is that it has lowered the medium to long run interest rate by a wide margin. Yet such potential benefits do not automatically translate into lower *borrowing* cost if firms do not borrow in the first place. In passing, we note that based on the S&P US Issued High Yield Corporate Bond Index, the US high yield bond market was heading toward a precariously high level over the past five years.

Granted, China's bond and equity markets still have a long way to go to become more efficient in allocating funds to their most productive uses, yet the above simplistic view quickly becomes confusing upon rigorous examination. First, when we are talking about real economic activities, it is critical to know what exactly we have in mind. Without properly defining the notion of real economy and collecting the relevant data, any conclusion is just guesswork. Second, we also need to specify the opportunity cost (loss function, loosely speaking) of conducting these expansionary monetary policies. A researcher should endeavor to know not only the upside but also the potential downside of these policies. Third, the logic of the above seemingly eloquent reasoning, i.e., putting all the blames on institutions, is also problematic. In economics we take the institutional imperfections as constraints and then ask how much policy room we are left with and what initiatives policy makers can take to circumvent the institutional constraints. Except for the long run, certainly longer than any round of monetary policy can take, these constraints should be treated as relatively given for comparisons of QE programs. Fixing the capital market imperfections is another question and is a hard one in the long run—it should not be used as a preponderant factor to compare the effectiveness of QE.

Against this background, our goal in this paper is to reevaluate the effects of QE by looking at the flow of funds to the real economy while keeping in mind its potential risks given the institutional and economic constraints of each country. Rather than simply citing eye-catching numbers of economic growth, we focus on loans to the real economy (China) and the corporate bond market (US) and study how excess reserves and monetary aggregates among other factors change over time. We find that the current trajectory of reserve growth is pursued by both countries but the compositions of reserves are quite different. For the US, interest rate policies at the ZLB have done little to extend credit to the private sector which is reflected by that excess reserves have increased at a much faster pace than total reserves; by contrast, for China bank credit and excess reserves have kept their steady proportions of the growing pool of total reserves. The monetary base, M1 and M2 have also grown substantially for both countries. In relative terms, however, the PBOC's balance sheet has seen a less staggering increase and at the same time the economy has registered a much higher investment growth rate in the real sector as measured by new issues of fixed investment loans *excluding* real estate and outstanding loans to non-financial corporations. This is in contrast to the US QE which some