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Permanent versus temporary monetary base Injections: Implications for past and future Fed Policy

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ABSTRACT

Despite the Federal Reserve's use of quantitative easing (QE) programs, the U.S. economy experienced one of the weakest recoveries on record following the Great Recession. Not only was real growth disappointingly low, but even nominal growth over which monetary policy has more control was feeble. Why did QE fail to stimulate robust aggregate demand growth? This paper argues the answer is that the Federal Reserve could not credibly commit to a permanent expansion of the monetary base under QE. Both quantity theoretic and New Keynesian models show, however, that a permanent expansion of the monetary base is needed to spur aggregate demand growth at the zero lower bound (ZLB). The Federal Reserve's inability to do so meant its QE programs got consigned to 'irrelevance results' of Krugman (1998) and Eggertson and Woodford (2003) and were never going to spark a strong a recovery. Going forward, this inability to commit to a permanent expansion of the monetary base at the ZLB will continue to weigh down on the effectiveness of Fed policy. As a result, this paper calls for a new monetary policy regime of a NGDP level target that is backstopped by the consolidated balance sheet of the government.

1. Introduction

On October 29, 2014 the Federal Reserve (Fed) officially ended its five-year run of large scale asset purchases (LSAPs). These purchases, where the Fed bought up longer-term treasury and agency securities, expanded the size of the Fed's asset holdings from about $900 billion in November 2008 to almost $4.5 trillion by the end of the program. This five-fold increase in the size of the Fed's asset holdings also meant an unparalleled increase in the monetary base.[1]

The Fed's motivation for doing LSAPs, more commonly known as quantitative easing (QE), was to support the recovery from the Great Recession. Normally, the Fed would fight economic weakness by lowering its short-term interest rate target, but it had hit the zero lower bound (ZLB) on interest rates in late 2008. The Fed turned to QE as a work-around solution to provide more stimulus to the economy.[2] QE was supposed to work through a portfolio balance channel where the Fed's purchase of long-term assets would force investors to rebalance their portfolios towards other long-term assets and, in the

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[1] This monetary experiment is technically still unfolding since the Fed's balance sheet has yet to shrink. The Fed, for now, is simply reinvesting its principal payments. The FOMC has indicated it plans to eventually reduce the size of its balance sheet back to more normal levels, a point discussed in section three. See Williamson (2015) for a discussion of how the Fed plans to normalize its balance sheet.

[2] The Fed also turned to forward guidance on interest rates in order to guide expectations of the future path of monetary policy. See Bernanke (2013) for more on how this tool was supposed to work.

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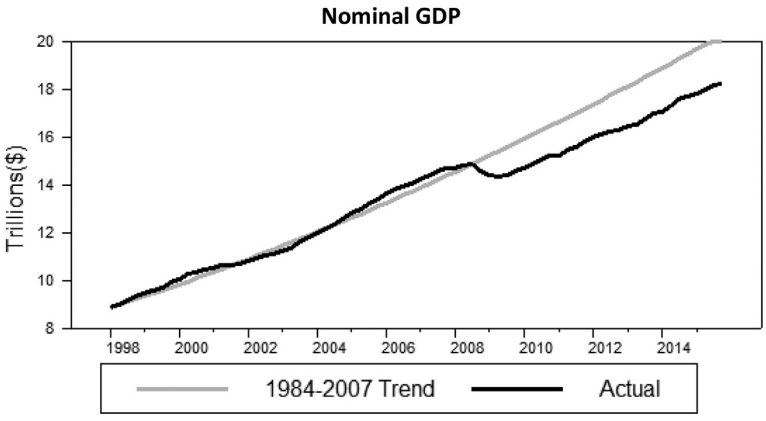

Fig. 1. Nominal spending (Nominal GDP).
Source: FRED database and author's calculations.

process, drive down the risk premium on long-term interest rates. The resulting decline in long-term interest rates would, in turn, stimulate interest sensitive spending and thereby support robust growth in aggregate demand.

Despite the Fed's hope that QE would "promote a stronger pace of recovery" (FOMC, 2010), the actual recovery from the Great Recession turned out to be one of the weakest on record. Annual real GDP and employment growth through averaged 2.1 and 1.3%, respectively, during the recovery compared to 4.6 and 2.8% average for previous post-war recoveries.[3] This anemic growth meant the return to full employment after the Great Recession was far slower than many expected (Fernald et al., 2017).[4]

Nominal economic measures, over which the Fed has more control, also experienced unusually weak growth. Annual nominal GDP growth averaged 3.7% during the recovery compared to 6.2% average for recoveries during the 'Great Moderation' period, a time of relative nominal stability.[5] The PCE deflator, the Fed's preferred measure of the price level, averaged only 1.4% growth during this time, well below the Fed's 2% inflation target.

QE was supposed to "stimulate aggregate demand" (Bernanke, 2009a) but the weak nominal GDP growth meant that for the first time since the Great Depression aggregate nominal spending would not return to its trend path during the recovery. This surprised some observers who believed there was a consensus that macroeconomic policy would maintain a relatively stable growth path of nominal demand (DeLong, 2011). Instead, it was about 10% below its trend by the end of QE, as seen in Fig. 1.

So why did QE fail to generate a strong recovery? This paper argues the failure occurred because the Fed could not credibly commit to a permanent expansion of the monetary base beyond that required for money demand growth.[6] Such a commitment, however, was necessary at the ZLB for QE to restore nominal demand to its pre-crisis growth path. A number of studies suggest that had this restoration happened there would have been a stronger recovery.[7]

The credible commitment to a permanent monetary base injection could have generated this better outcome through two channels. First, via the quantity theory of money, a permanent expansion of the monetary base creates the expectation of a permanent rise in the future price level. That, in turn, reduces money demand and raises current nominal spending. Second, from a New Keynesian perspective, a rise in the price level from a permanent monetary injection temporarily raises expected inflation and thereby lowers real interest rates given the ZLB. This would move real interest rates closer to their

[3] The averages are taken for quarter over quarter (GDP) and month over month (non-farm payroll employment) annualized growth rates. The average is for the post-Great Recession recovery period starts of 2009Q2 through 2016Q2. This is the date that Fernald et al. (2017) show to be when the U.S. economy reached full employment.

[4] This is not to say the QE programs had no effect. Only that their effect was at best modest and incapable of supporting a strong recovery. The modest effect of LSAPs can be seen in Borio and Zabai's (2016) extensive survey of the LSAP empirical studies.

[5] If you include all post-war recoveries the average nominal GDP growth rate jumps to 8.0%. These, however, include the recoveries during the 'Great Inflation' period of the mid-1960s-early 1980s when there was not nominal stability.

[6] As noted in the next section, a permanent injection does not mean the monetary base will never change. Rather, it is permanent holding the future paths of all other relevant variables constant.

[7] For example, Lopez-Salido and Nelson (2010), Dwyer and Lothian (2011), Howard et al. (2011), and Bordo and Haubcrich (2012) provide empirical evidence that indicates that after a severe financial crisis a robust recovery is possible if government can create adequate aggregated demand growth. This understanding finds support in Koenig (2013) and Sheedy (2014) who show that in a world with fixed-value nominal debts a macroeconomic policy that maintains nominal income on a stable growth path will better distribute risk and shore up financial stability. Their work implies that even if a country experiences a financial crisis it can still have a strong recovery if macroeconomic policy can create robust nominal income growth. Accordingly, the slow recovery after 2009 could have been avoided. Some observers go further and claim the apparent decline in potential real GDP was an endogenous response to persistent aggregate demand shortfall seen in Fig. 1 (Ball, 2014; Reifsneider et al., 2015, Fatas and Summers, 2016). Fernald et al. (2017) see the decline in potential real GDP as exogenous, but acknowledge that the recovery was weaker because of aggregate demand shortfalls. Collectively, these studies all point to the anemic nominal demand growth as a key reason for the slow return to full employment.

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