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Why CFS Divisia Money Matters, Now!

Lawrence Goodman

July 8, 2016

Remarks at The Society for Economic Measurement Conference

Thessaloniki, Greece

It is a pleasure to speak at the Society for Economic Measurement (SEM) conference on “Why CFS Divisia Money Matters, Now.” My comments would not be possible without the innovations, brilliance, and years of dedicated work by the President of the SEM and my Center for Financial Stability (CFS) colleague Professor William A. Barnett.¹ I am also grateful to Jeff van den Noort, Ryan Mattson, Liting Su, and Biyan Tang for their work in making CFS Divisia a reality.²

CFS Divisia data are available free of charge and without regard to interpretation. In fact, our goal is to encourage others to use the data and debate interpretation and analysis.

What follows is my perspective and not that of CFS, its members, or its Board. I alone am fully responsible for the practical and applied views espoused as well as any errors. My comments:

- **Illustrate how the world may have been different had CFS Divisia money been on the Fed’s dashboard.**
- **Challenge academics to use CFS Divisia to build better economic models integrating financial services.**

CFS Divisia money matters, now, for policymakers, investors, and the public.

Financial Risks

Today, I am sympathetic with legendary investor Stan Druckenmiller.³ In a recent provocative presentation titled “The End Game,” Mr. Druckenmiller outlined varying constraints to policy and future challenges for markets. In a similar fashion, I have elaborated how a series of three “never before” has constrained policy and shaped economic and market performance in

With thanks to William A. Barnett, John Feldmann, Robin Lumsdaine, and Randal Quarles for comments.

¹ William A. Barnett, “Getting It Wrong: How Faulty Monetary Statistics Undermine the Fed, the Financial System, and the Economy, MIT Press, 2012.

² CFS Divisia data is freely available as part of the Advances in Monetary and Financial Measurement (AMFM) program – directed by William A. Barnett. State of the art advances in monetary and financial measurement account for differences in the degree with which various assets serve as money (see <http://www.centerforfinancialstability.org/amfm.php>).

³ Stan Druckenmiller, “The Endgame,” 21st Annual Sohn Investment Conference, May 4, 2016.

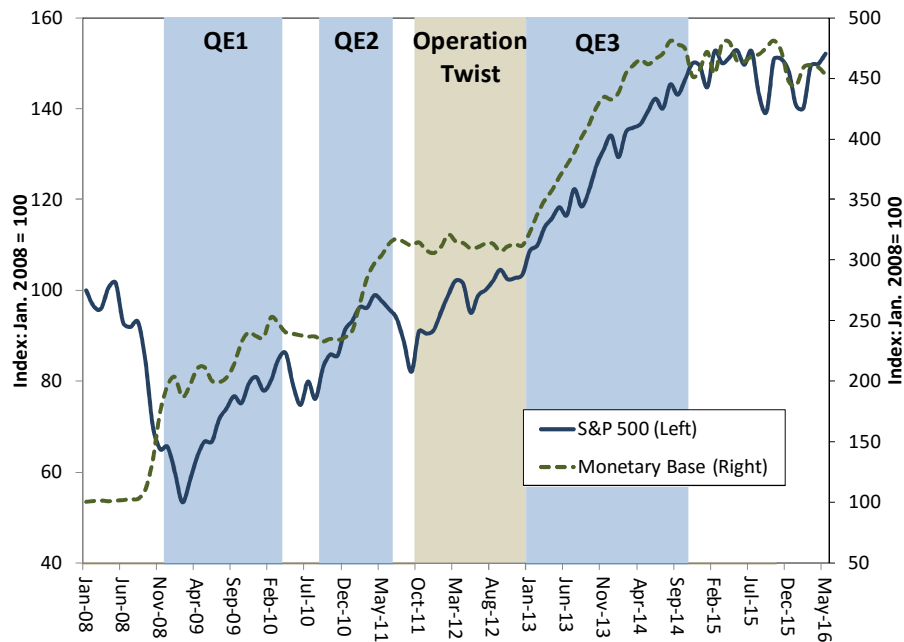


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recent years.⁴ Quite simply, **monetary policy has driven markets to recent heights and disturbed relative value among disparate – yet interconnected – financial markets** (see Figure 1).

Figure 1. Fed Policy Drives Equity Prices Higher



Source: Federal Reserve Bank of St. Louis, Bloomberg LP, and Center for Financial Stability.

Now, the major advanced economy central banks have exhausted effective policy measures, further challenging markets and reducing their own policy degrees of freedom.

Druckenmiller states that “policymakers have no endgame, markets do.” If the Druckenmiller group is right and the world lunges into another crisis, central banks will be woefully unprepared. Such an event would raise serious questions for academic economists, public officials, and investors alike.

To me, it is time to stop the charade of thinking that a doubling down on previously untested and failing strategies will somehow now produce more favorable results. Here members of the SEM can show leadership by working with monetary measures to better inform policy.

But, in order to navigate through present challenges and advise on future policies, **we must first dispassionately answer three questions:**

- **How could we have been so wrong?**
- **How did we get into such a mess?**
- **What are the costs and benefits from recent monetary moves?**

⁴ Lawrence Goodman, “The Unwind: What’s Next for Global Markets,” May 27, 2015.



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To answer these questions, money matters. Here, Barnett and CFS Divisia matter.

Money and Central Banking: Yesterday and Today

In 2001, then Fed Governor Laurence Meyer asked the question “does money matter?”⁵ He noted that money or quantities played no role in the conduct of monetary management or in consensus macro models. However, he also opined that often the “pendulum swings too far” and that “monitoring money growth has value.” Sadly, the pendulum swung in the wrong direction for another decade after Meyer’s remarks. Central banks still have done little to add quantities to their policy calculus.

Yet, just last month, Fed Vice Chairman Stanley Fischer noted that popular macro models used in central banks provide “justification for the behavior of ... central banks that think and talk of monetary policy purely in terms of the policy interest rate and other financial return variables, but not of the money stock.” “However, we need to remind ourselves that it is built on an *assumption* ... not a *theorem*.”⁶

Fortunately, signs are emerging that some economists are beginning to integrate money and finance into macro models.⁷

Today, I will offer essential takeaways from CFS’s experience producing monetary aggregates and measuring money in the U.S. since 2012. Major themes will include: 1) private sector versus state money, 2) deflation and inflation scares, 3) a damaged monetary transmission mechanism, 4) collapse in shadow banking, 5) shortage of financial market liquidity, and 6) ideas for the future.

Private Sector (Bank) versus State Money

One of the most fundamental observations from our data is that the Fed alone cannot grow the economy.⁸ Although this seems obvious, incentives must exist for the private sector to invest and help drive the creation of monetary liabilities forward. Our data drive this point home (see Figure 2).⁹ Hence, policy options must rely on other strategies, rather than simply reducing interest rates or adding fiscal stimulus.

⁵ Laurence Meyer, “Does Money Matter?” The 2001 Homer Jones Memorial Lecture, St. Louis, Missouri, March 28, 2001.

⁶ Stanley Fischer, “(Money), Interest and Prices,” A Conference in Honor of Michael Woodford’s Contributions to Economics, May 19, 2016.

⁷ “New model army: Efforts are under way to improve macroeconomic models,” The Economist, January 19, 2013.

⁸ John M. Keynes, “A Treatise on Money,” Macmillan & Company Ltd, 1930.

⁹ Steve H. Hanke, “Monetary Policies Misunderstood,” GlobeAsia, May 2016.

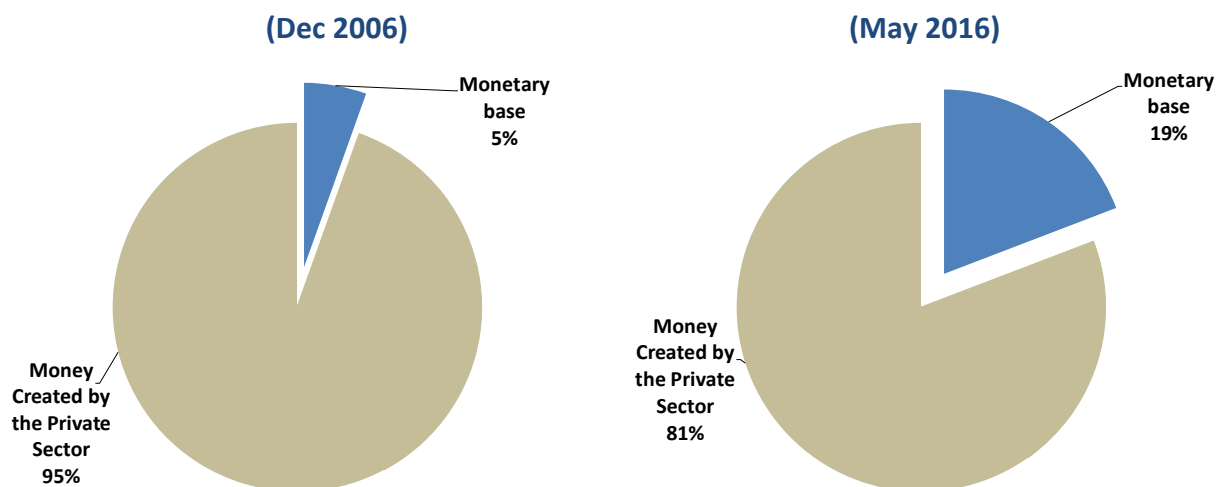


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For instance, the ratio of state money, or the Federal Reserve's monetary base, relative to total monetary expenditures highlights unprecedented growth from 5% in December 2006 to 19% in May 2016. In other words, the Fed's balance sheet expanded meaningfully at a time when economic growth remained stalled. Perhaps of greater importance is the notion that growth in the remaining 81% of bank or private sector money in the economy has remained stalled. The private contribution to total monetary expenditure continues to account for the overwhelming majority of money in the economy. **So, the data suggest that the secret to unleashing growth in the economy rests on identifying paths for the private sector to expand investment.**

Figure 2. Total Money Supply in the US



Source: Federal Reserve and Center for Financial Stability.

Deflation and Inflation Scores

In the last several years, erroneous deflation and inflation scares have adversely influenced policy decisions. In some cases, misperceptions can be traced to faulty data. **In many instances, monetary analysis would have resulted in different conclusions about the economy and policy** (see Figure 3).

The first example is in September 1983 – when Milton Friedman wrote a *Newsweek* article warning of an explosion of M2 money. He suggested that an aggressive Fed tightening and recession would follow. Ironically, on the same day, Bill (Barnett) was featured in *Forbes* explaining why no recession was in sight. **Financial innovation rendered simple sum M2 faulty.** The difference in views was purely due to measurement or the divergence in the broad Divisia versus narrow simple sum aggregates.¹⁰

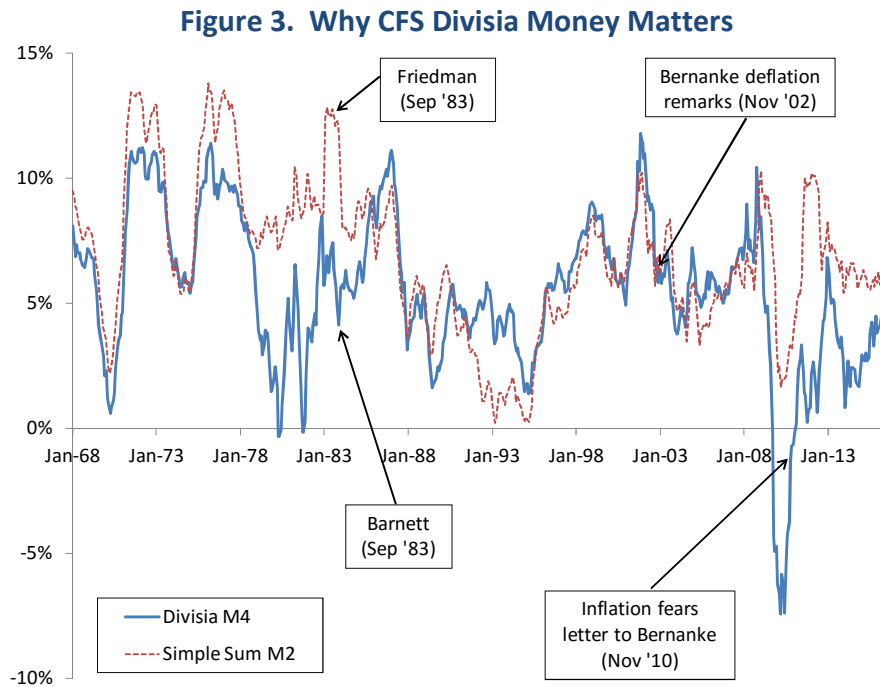
¹⁰ William A. Barnett, "Which Road Leads to Stable Money Demand?" *The Economic Journal*, July 1997.



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Second, in late 2002, then Governor Ben Bernanke offered remarks on “Deflation: Making Sure ‘It’ Doesn’t Happen Here.”¹¹ Today, the speech is often lauded today for contemplating extraordinary monetary measures years in advance. Yet, **more critically, the ideas espoused helped put the Fed and financial markets on the wrong track.** The remarks justified sharp cuts in the Federal Funds rate and the retention of rates at levels now often viewed as “too low for too long.”¹²



Source: Federal Reserve and Center for Financial Stability.

Had CFS Divisia money been part of Governor Bernanke’s dashboard – perhaps the Fed may have avoided the extraordinarily easy monetary policy enabling financial institutions and individuals from taking excessive risks between 2002 and 2006. Our broadest monetary aggregate (CFS Divisia M4) was growing at an annual rate of 6.6% in 2002, when Governor Bernanke spoke at the National Economists Club in Washington, D.C.¹³ Similarly, a glimpse back in time at the growth in monetary services would have also revealed a less threatening picture. For instance, the year-to-year percentage change in CFS Divisia M4 registered prior lows of 1.2% in 1995, 1.6% in 1989, -0.2% in 1981, -0.3% in 1980 and 0.6% in 1970. In other words, CFS Divisia M4 growth needed to be much lower before sounding deflation warning bells.

Had CFS money been on the Fed’s dashboard perhaps we may have avoided the global financial crisis or perhaps at a minimum bypassed the severity of the crisis.

¹¹ Ben S. Bernanke, “Deflation: Making Sure ‘It’ Doesn’t Happen Here,” National Economists Club, Washington, D.C., November 21, 2002.

¹² John B. Taylor, “Getting Off Track,” Hoover Institution Press, Stanford, CA, 2009.

¹³ Simple sum M2 growth of 6.8% also failed to corroborate deflation signals.



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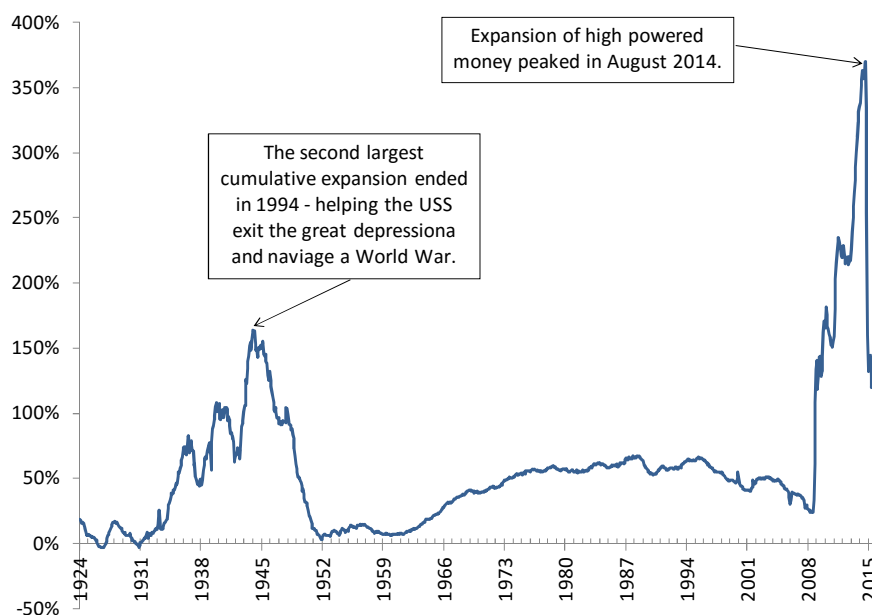
Similarly, in 2010, a group of prominent economists wrote an open letter to then Chairman Bernanke urging reconsideration of quantitative easing and other experimental monetary policies.¹⁴ **The letter made many important arguments regarding the dangers of quantitative easing. However, an unfulfilled claim that “planned asset purchases risk currency debasement and inflation” ultimately met with sharp criticism and unfortunately diminished the impact of the economists’ message.**¹⁵

Quite simply, had CFS Divisia been part of the dashboard of these economists, emphasis on inflation and currency debasement might have been muted or at a minimum the threat would have been pushed into the future. At the time, CFS Divisia M4 had collapsed demonstrating a drop of 1.3% when the letter was released.

A Damaged Monetary Transmission Mechanism

In response to the financial crisis, the Federal Reserve engineered the largest surge of its balance sheet since the founding of the Fed in 1913. For instance, the Fed’s high powered money or monetary base expanded by nearly 400% from the peak-to-trough over a period of six years (see Figure 4).

Figure 4. Largest Surge of Monetary Base in Fed History



Source: Federal Reserve and Center for Financial Stability.

¹⁴ “An Open Letter to Ben Bernanke,” Economics 21 (e21), November 15, 2010.

¹⁵ Floyd Norris, “Predictions on Fed Strategy That Did Not Come to Pass,” The New York Times, June 28, 2013.



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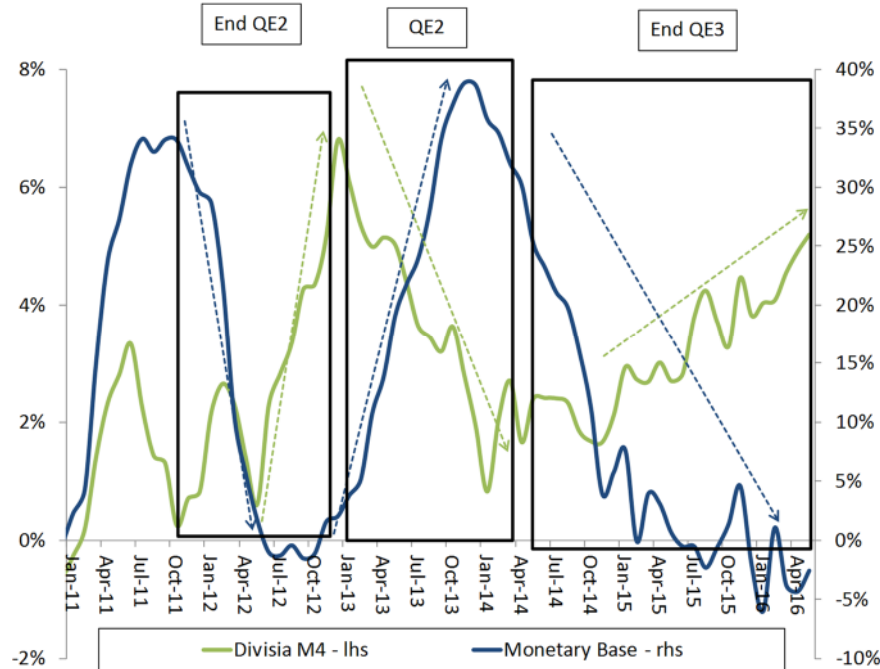
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In fact, the second largest six-year cumulative expansion was less than half of the recent swell in the size of the Fed's balance sheet. This expansion – ending in 1944 – was arguably much more beneficial. It helped the U.S. exit from the Great Depression and a World War.

With economic growth stuck at subpar rates in recent years, there are legitimate questions regarding the cost / benefit calculus today from such recently deployed extraordinary policy measures.

CFS monetary and financial data vividly illustrate that the monetary transmission mechanism has been damaged.¹⁶ Our monetary data reveal counter-intuitive and surprising trends since 2012.

Figure 5. Limited QE Benefit – CFS Divisia M4 and Monetary Base Move Oppositely



Source: Federal Reserve and Center for Financial Stability.

- First, when QE2 ended, money and liquidity created by the private sector improved. This is measured by CFS Divisia M4 (the green line in Figure 5).¹⁷ For investors, this signaled the “perfect macro cocktail” in the U.S.¹⁸
- Second, when extraordinary monetary policy resumed with QE2 (the blue line), private sector liquidity plunged.

¹⁶ Charles Goodhart, Elga Bartsch and Jonathan Ashworth, “Transmission Matters – Musings on Money Multipliers and Credit Creation,” Morgan Stanley, March 8, 2016.

¹⁷ “Goodbye Liquidity Trap: CFS Money Supply Statistics,” Center for Financial Stability, February 20, 2013.

¹⁸ Lawrence Goodman, “Today Money Matters for Keynesians, Monetarists and Economists of all Stripes,” Center for Financial Stability, February 15, 2013.



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- Third, with the cessation of QE3, liquidity created by the private sector began to improve again (the green line).

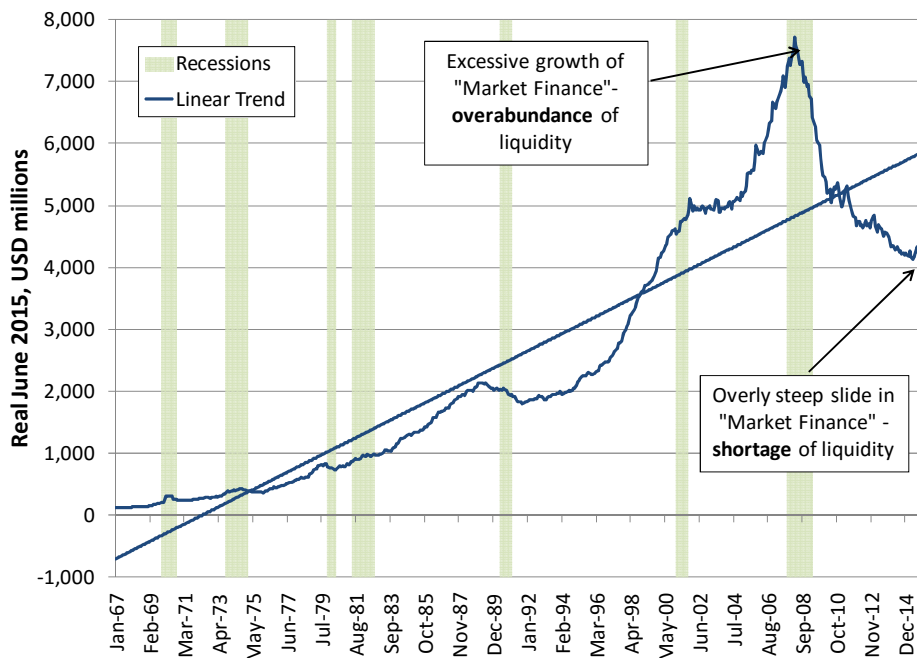
Specifically, CFS Divisia better maps and explains the financial sector. Here, economists can now employ quantity measures rather than solely relying on interest rates to model finance in macro models.¹⁹

But, I need to be stronger. Our data also reveal in technicolor fashion, the counterproductive effect of the current monetary and regulatory policy²⁰ on the financial sector transmission mechanism.

Collapse in Shadow Banking

CFS Divisia data also help measure and monitor market finance (or what some dub Shadow Banking). Market finance provides the fuel for corporations in the form of commercial paper and liquidity for financial markets via money market funds and repurchase agreements.

Figure 6. Plunge in Market Finance (Shadow Banking) Overshoots



Note: CFS definition of market finance includes: money market funds, repurchase agreements, and commercial paper. Source: Federal Reserve Board, Bankrate, and Center for Financial Stability.

¹⁹ John B. Taylor, "The Monetary Transmission Mechanism: An Empirical Framework," *Journal of Economic Perspectives*, Fall 1995.

²⁰ Michael D. Bordo, John V. Duca, and Christoffer Koch, "Economic Policy Uncertainty and the Credit Channel," NBER Working Paper No. 22021, February 2016.



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Of course, market finance grew too large in advance of the recent financial crisis (see Figure 6). It reached historic highs prior to the crisis and facilitated many well documented excesses. Yet, since 2011, the needed correction in reducing the role of market finance in the economy has fallen too far. For example, our measure of market finance typically contracts coincident with recessions, but by an average of only 10%. Similarly, the average peak-to-trough associated with recessions is usually a scant 13 months (see Figure 7).

Now, the reduction in of market finance is excessively steep (see Figure 6). The CFS measure of market finance was down a stunning 47% in real terms since its peak in March 2008! Similarly, the contraction occurred over a period of 86 months. This phenomenon starves financial markets from needed liquidity and is detrimental to future growth.²¹

Figure 7. CFS Measure of Market Finance (Shadow Banking), Real May 2016, USD millions

<u>Peak</u>	<u>Fall</u>	<u>Decline /1</u>
1970	-24%	16
1974	-17%	16
1979	-13%	7
1982	-5%	3
1989	-16%	29
2001	-5%	11
2008	-47%	86
Avg ex '08	-10%	13

1/ Cyclical peak-to-trough in months.

Source: Center for Financial Stability.

Shortage of Financial Market Liquidity; Despite Plentiful Monetary Liquidity

Our work measuring monetary liabilities was helpful in illustrating a trend challenging many market participants, namely less liquid financial markets.²²

A shriveling of liquidity (or an inability to move assets without unusual jumps or drops) puts markets and economies at risk for excessive amplification of minor shocks and a resultant major loss of confidence. Although seemingly arcane, market liquidity is of vital importance to foster financial stability.

Threats from illiquid markets are often especially acute toward the end of momentum trades or herding investment behavior patterns. The trigger to reverse unidirectional investment trends

²¹ Lawrence Goodman, "Shriveling Shadow Banking Limits Liquidity and Damages the Economy," Center for Financial Stability, November 19, 2014.

²² Lawrence Goodman and Stephen Dizard, "Fixing the Fed's Liquidity Mess," The Wall Street Journal, July 21, 2015.



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often arises during a period of overstretched valuations (2000) and / or the reversal of an easy monetary stance (2007).

What takes years to develop can reverse quickly with violent price swings – putting markets and the economy at risk.

It is no wonder that in this environment that we have already experienced:

- A Treasury flash crash,
- Complaints of vanishing prices in G-10 FX,
- A plunge in EUR/CHF, and
- Ongoing fears in corporate bond markets.

Concluding Thoughts

In conclusion, I will answer the three questions posed and offer a way forward.

How could we have been so wrong? Quite simply, financial markets changed. Innovation over the years rendered outmoded monetary measurement techniques and definitions spurious. Abandonment of quantities in favor of more compact interest rates was easy – albeit at the loss of informational content. Today's modern financial system or Keynes' bank money was ignored.

How did this become such a mess? Clear signals from monetary aggregates were ignored prompting the Fed to fear deflation in 2002 and ease monetary policy by too much for too long.

In later years, damage to the monetary transmission mechanism was ignored. The policy response was simply to double down on base money expansion. The collapse in shadow banking was viewed as healthy. Officials were backward looking believing that market finance was the root of the crisis and, therefore, its demise would be a favorable development. Sadly, monetary measures were not used to make this assessment. Had actual measures of market finance been employed officials would have witnessed a sizable overshoot on the downside for the sector and economic growth – more broadly.

Even advocates of a more prudent monetary stance during the crisis lost credibility due to less reliance on monetary measures.

What are the costs and benefits from recent monetary moves? The response to the crisis may have been different, had officials evaluated monetary data in real time as the crisis unfolded.



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Perhaps, reciprocal swap lines would have been implemented sooner, possibly avoiding QE1.²³ Certainly, QE2 and QE3 may have been avoided. Rates may already have been normalized, during times when the unemployment rate had fallen to the Fed's initial target of 6.5%, the liquidity trap showed signs of subsiding, and growth began to emerge.

I do believe that it is fair to say that the world would have been a better place had CFS Divisia money been on the Fed's dashboard. Perhaps, we would have bypassed the crises by avoiding the excessively easy monetary conditions between 2002 and 2006 that ultimately enabled the expansion and absorption of credit by institutions and individuals. Certainly, the severity would not have been as deep and long-lasting.

Going forward, the present represents an exciting period for scholars.²⁴ Whether you are a Keynesian, Monetarist or simply agnostic, monetary and financial measurement and its integration into policy, and models is essential for the future.

Here, we are all grateful to Bill for his work and innovations over the years.

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²³ Lawrence Goodman, "Whipping the Moral Hazard Trade...Sort of," Bank of America, Forex Focus: Key Issues and Strategies in Global FX Markets, August 21, 2007.

²⁴ The theme at the 2016 Jackson Hole conference is "Designing Resilient Monetary Policy Frameworks for the Future."