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Normalizing the Fed Funds Rate: The Fed's Unjustified Rationale

by

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ABSTRACT

In December 2015, the Federal Reserve Board (FRB) initiated the process of "normalization," with the objective of gradually raising the federal funds rate back to "normal"—i.e., levels that are "neither expansionary nor contrary" and are consistent with the established 2 percent longer-run goal for the annual Personal Consumption Expenditures index and the estimated natural rate of unemployment. This paper argues that the urgency and rationale behind the rate hikes are not theoretically sound or empirically justified. Despite policymakers' celebration of "substantial" labor market progress, we are still short some 20 million jobs. Further, there is no reason to believe that the current exceptionally low inflation rates are transitory. Quite the contrary: without significant fiscal efforts to restore the bargaining power of labor, inflation rates are expected to remain below the Federal Open Market Committee's long-term goal for years to come. Also, there is little empirical evidence or theoretical support for the FRB's suggestion that higher interest rates are necessary to counter "excessive" risk-taking or provide a more stable financial environment.

Keywords: Monetary Policy; ZIRP; Normalization; Inflation; Interest Rates; Employment

JEL Classifications: E31, E52, E58, J01, J08

INTRODUCTION: "NORMALIZATION" HAS BEGUN. REST IN PEACE, ZIRP

On December 16, 2015, the Federal Open Market Committee (FOMC)—the Federal Reserve Bank's (FRB) policymaking body—voted unanimously to raise the federal funds rate by a quarter of a percentage point from its zero lower bound interval, marking the official end of the zero interest rate policy (ZIRP) that had prevailed for the past eight years. The corridor (the target range for the fed fund rate) is (as of July 2016) set by the one-quarter percent rate paid on reverse repo transactions (RRPO) and the one-half percent rate paid on required and excess reserves. The FRB is now going to embark on a series of rate hikes in a process known as "normalization," with the objective of gradually raising "the federal funds rate and other short-term interest rates to more normal levels" (FOMC 2014). By normal, the committee means levels that are consistent with the natural (or neutral) rate of interest, which is defined as "the value of the federal funds rate that would be neither expansionary nor contractionary if the economy were operating near its potential" (Yellen 2015b: 11). In other words, interest rate levels consistent with the established 2 percent longer-run goal for the annual Personal Consumption Expenditures (PCE) index and the estimated natural rate of unemployment.

Early in 2015, the FRB started to fuel the expectation that a rate hike was around the corner. In February 2015, the FRB's Vice Chairman, Stanley Fischer, declared the conventional and unconventional monetary policy actions of the previous eight years a success. According to him, asset purchases, ZIRP, and the FOMC's enhanced forward guidance produced stimulus to employment and economic activity that lasted for several years.[1] Furthermore, the series of large-scale asset purchase programs had produced significant declines—as high as 100 basis points—on the 10-year Treasury yield. This defense of monetary policy actions was a prelude to the March 2015 meeting.

[1] He refers to the work of Engen, Laubach, and Reifschneider (2015) who estimated that quantitative easing (QE) produced annual declines in the unemployment rate of as much as 1.2 percent, and boosted inflation on average by as much as 0.8 percent. For additional studies that find similar results, see Weale and Wieladek (2014); Gertler and Karadi (2013); and Baumeister and Benati (2013).

In the statement released after that meeting, the FOMC removed the word "patient" from its "enhanced" forward guidance language. Subsequent speeches and testimonies explicitly set the timeline—the first fed funds rate hike was likely before the end of the year. The bets were high in September 2015. So much anxiety was created around the "will-they-won't-they" that during the Group of the Thirty meeting in Peru in October 2015, emerging market authorities urged the Fed to just do it already. In a speech given at the same meeting, Fischer (2015b) asked for patience and reiterated that the rate hike was just around the corner. By the end of October, economic conditions looked grim. Payroll employment creation had decelerated, inflation rates were still disappointing, the US dollar had appreciated further, and financial market turmoil abroad had escalated.

The urgency of the adjustment was still justified theoretically over the need for monetary policy to be preemptive and gradual. The consensus in the literature was that there are *significant* lags to the monetary policy transmission mechanism (Friedman 1961; Bernanke 2004). Further, inflationary pressures tend to develop before the naked eye can see or official measures can capture them (Williams 2016). The risk is especially high when monetary policy has kept interest rates at the effective lower bound for "too long," and unconventional monetary policy (through sequences of QE) had expanded the Fed's balance sheet to unprecedented levels. In such a scenario, rapid policy rate movements could be destabilizing. As Federal Reserve Chairwoman, Janet Yellen, put it in her *ex ante* justification for the end of ZIRP, "were the FOMC to delay the start of policy normalization for too long, we would likely end up having to tighten policy relatively abruptly to keep the economy from significantly overshooting both of our goals" (Yellen 2015b: 10).

Policymakers gave other "official" reasons for their eagerness to hike rates. One of them was predicated on the idea that the end of ZIRP need not change the stance of monetary policy significantly.[2] The FOMC can still "keep the stance on monetary policy sufficiently accommodative to support further improvement in labor market conditions

[2] See, for example, the FOMC's projections for interest rates in the "Summary of Economic Projections" (FOMC 2016b, 2016e).

and to exert upward pressure on inflation" (FOMC 2015: 8), so long as the policy-driven increments to the benchmark rate keep short-term rates lower than the economy's neutral (or natural) short-term interest rates,[3] and the FRB maintains its sizable holdings of long-term securities. Furthermore, too-low interest rate environments "encourage excessive risk-taking and thus undermine financial stability" (Yellen 2015b: 10), and reduce the ability of monetary policy to respond to adverse shocks "without recourse to unconventional tools" (Fischer 2015a: 1).

In the spirit of "better late than never," the FOMC followed through with its enhanced forward guidance. FOMC participants unanimously agreed to increase rates in their last meeting of 2015: "A number of members commented that it was appropriate to begin policy normalization in response to the substantial progress in the labor market toward achieving the Committee's objective of maximum employment and their reasonable confidence that inflation would move to 2 percent over the medium term" (FOMC 2015: 9).

Despite the decision being unanimous, some participants referred to the rate hike as "a close call" (FOMC 2015) given the still alarmingly and stubbornly low inflation rates. Nonetheless, the rest-in-peace-ZIRP sermon alluded to the ephemeral nature of economic shocks and commodity price movements—as the negative pressure exerted by low oil prices and the extraordinary appreciation of the dollar faded away, inflation rates were to move back in line with the FOMC's goal, pushed by a strengthening labor market and bounded by well-anchored inflation expectations and renewed confidence that the FRB does follow through (Yellen 2015a; Fischer 2016).

[3] The concept of natural rates goes back to Wicksell's formulations of the natural real interest rate that prevails when supply is equal to the demand for commodities so that there is no tendency for price movements. The neutral nominal rate can be achieved by adding inflation expectations to the natural real rate, which is estimated through atheoretical statistical models that make use of past values of the time series to separate trend from cyclical components, and more recently through dynamic, stochastic general equilibrium models. Once the natural rate is estimated, monetary policymakers can use it as a benchmark to determine the accommodative stance of monetary policy.

As of July 2016, the FOMC had postponed rate hikes five times, contradicting policymakers' own expectations.[4] Nonetheless, participants continue to remind us that another hike is around the corner. Yellen has recently reiterated her belief that "the case for an increase in the federal funds rate has strengthened in recent months" (Yellen 2016b). According to the June 2016 "Summary of Economic Projections" (FOMC 2016d), policymakers expect the fed funds rate to be in the 0.625–0.875 range by the end of 2016. Normalization is expected to leave the legacy of the policy rate as high as 3.35 by 2018 (FOMC 2016d).

This paper questions the FRB's rationale for the "normalization" of the fed funds rate. It also dismisses the argument made by some that "normalization" is especially necessary to counteract the potential "overshooting" of the FRB's dual mandate, especially with respect to inflation, after years of unconventional monetary policy. In what concerns the dual mandate, economic data suggests that there is significant slack in the labor market—we are still short some 20 million jobs. Furthermore, there is no evidence to warrant the Fed's proposition that today's dangerously low inflation rates are transitory or that labor markets will strengthen as the moderate expansion continues. Quite the contrary, without significant fiscal efforts to bring labor markets to tight full employment (therefore reversing the declining labor share of income) or to increase the bargaining power of labor, inflation rates are to remain below the FOMC's long-term goal for years to come. Yet part of the FRB's urgency to normalize the fed funds rate seems to be based on a "third mandate"—financial stability. The fear is that keeping low interest rates low for "too long" undermines the stability of the financial system by encouraging "excessive" risk taking, leverage, and search for yields. In that sense, the FRB seems to be using rate hikes as a macroprudential policy tool. This practice, however, is likely to increase, rather than tame, financial instability.

[4] According to Loretta Master, president of the Cleveland FRB, the "bank's internal projections" suggested interest rates should continue to increase in the "months ahead" (Hilsenrath 2016). Stanley Fischer, the FRB's Vice-Chairman, foresees at least four hikes in 2016 (Hilsenrath 2015), while John Williams, president of the San Francisco FRB, initially projected at least five rate hikes over the course of 2016 (*Wall Street Journal*, September 7, 2015), and later revised his predictions down to two or three increases (Pramuk 2016).

[UN]CONVENTIONAL MONETARY POLICY AND INFLATION: IS THE FEAR OF "OVERSHOOTING" JUSTIFIED?

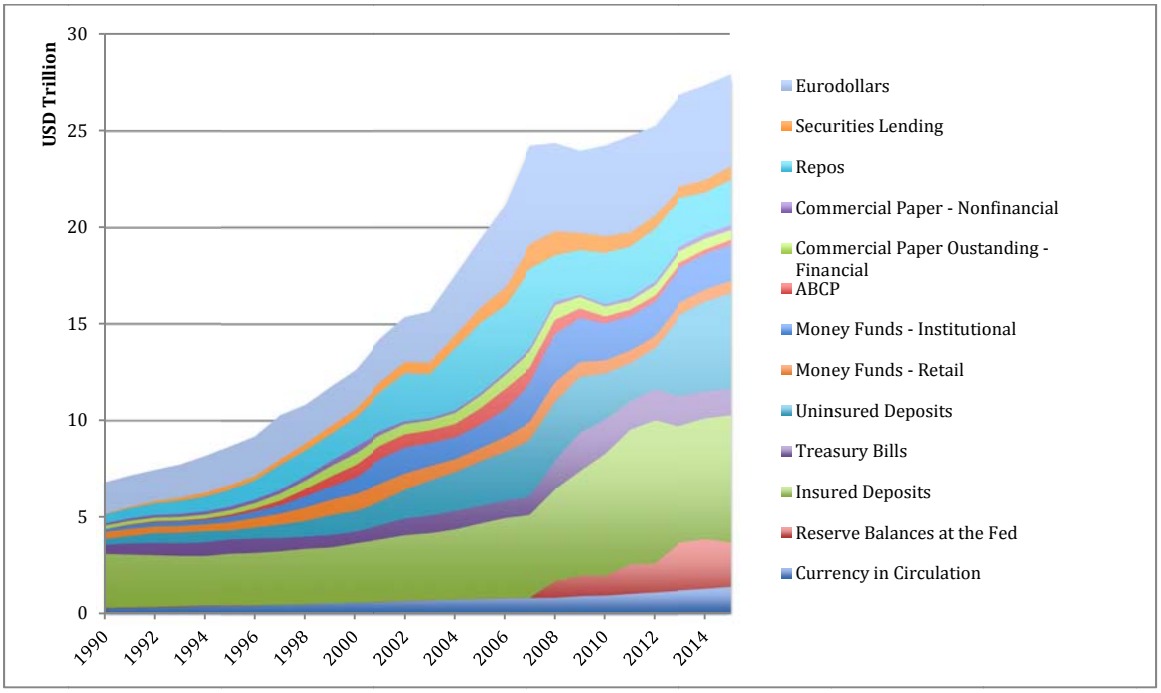
Policymakers' urgency to "normalize" the fed funds rate prematurely was partially justified by the existence of lags to monetary policy, and the fear that policy rates that were too low for too long in combination with QE could cause an "overshooting" of the FRB's policy goals. In fact, some critics of the FRB's policy response to the crisis have been vocal about the disastrous long-term consequences of keeping monetary policy too easy for too long. They fear that the sizeable expansion of the Fed's balance sheet (through QE), along with long-lasting ZIRP, will produce rampant inflation and economic catastrophe down the road (e.g., Phelan 2015; Basseto and Phelan 2015; Moosa 2014; Williams 2012). They warn that the combination of low interest rates and "excessive" reserves currently held by the banking system will eventually translate into "excessively" easy financial conditions as banks try to get rid of the reserves accumulated since 2008. Excessive credit and spending by the private sector is supposed to build up inflationary pressures as the unemployment rate falls below some threshold.

For instance, FRB economist Christopher Phelan warns that "while the correlation between changes in M2 and prices is not tight in the short run, comparisons across longer time periods and across countries are clearer and more convincing: Greater liquidity is associated with higher prices" (Phelan 2015: 2). Along similar lines, Bassetto and Phelan (2015) argue that the financial stability risks posed by excessive liquidity in the banking system may materialize in the form of a bank run on the FRB similar to speculative runs on interest rate pegs. The story goes like this: the public loses confidence in the FBR's ability to maintain price stability and demands more cash, and banks quickly withdraw their "excessive" funds deposited with the FBR. As reserves become currency, money is put back into circulation, prices rise, and the prophecy self-fulfills.

This fear stems from a basic misunderstanding about the way in which money is created in modern capitalist economies on one hand, and the functioning of monetary policy on the other. Banks do not need reserves before they can issue their own liabilities. This

point was settled in the 1980s by Post Keynesian economists (see Wray 1990; Moore 1988; Minsky 2008 [1986]), and is finally being recognized by the mainstream (see McLeay, Radia, and Thomas 2014; Sheard 2013; Borio and Disyatat 2011). In fact, private money creation (i.e., issuance of short-term liabilities) is not constrained by the amount of reserves (or prior savings) in the banking system, but by the willingness of firms and financial institutions to issue liabilities to take a position in assets.

Figure 1. Outstanding Short-term US–Dollar Denominated Liabilities

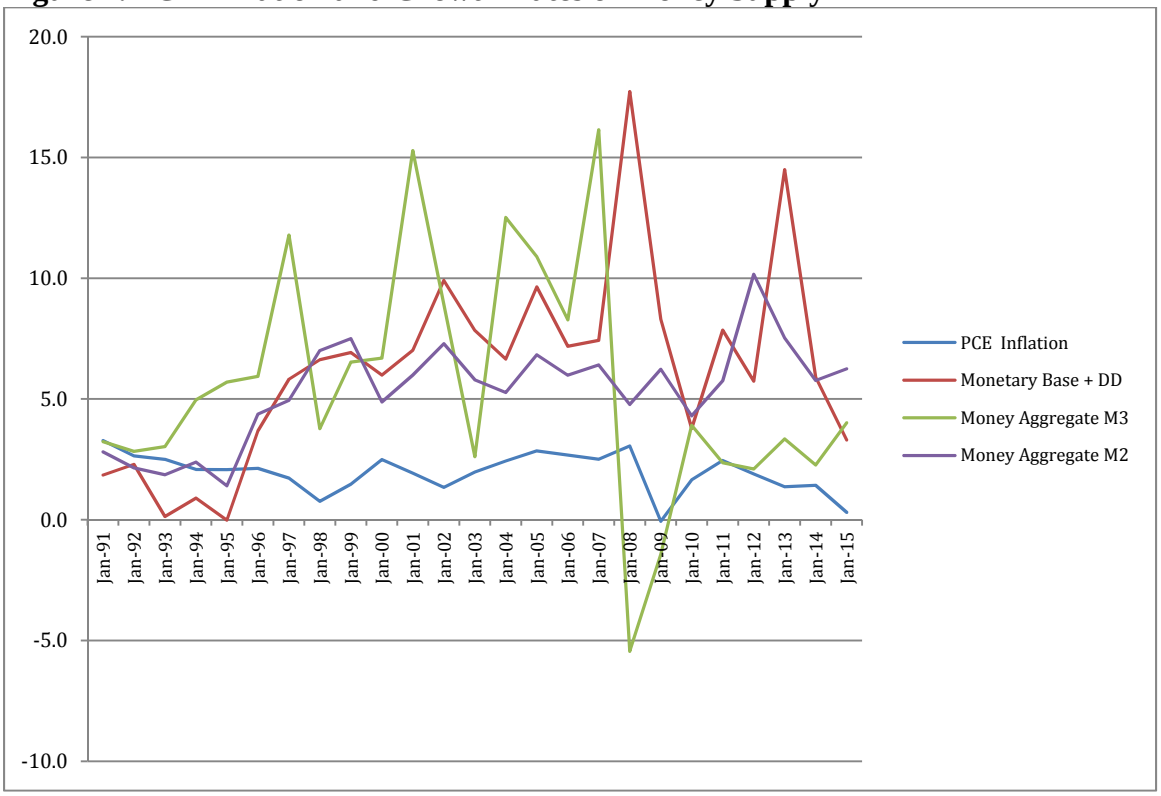


Source: Federal Reserve Economic Database (FRED); Federal Deposit Insurance Corporation (FDIC) Quarterly Bank Profile; Economic Report of the President (ERP); Financial Stability Oversight Council (FSOC); and Bank for International Settlements (BIS).
Note: Eurodollar series constructed by the author following Ricks (2016). Also, annual values for the following series in the indicated years were not available and were estimated by the author using the annual historical average rates of growth: ABCP (1990–1991), Commercial Paper—Financial (1990), Commercial Paper—Nonfinancial (1990), and Repos (1990–1994).

Take recent history for example. As figure 1 shows, private money creation—including FDIC–insured and non-insured bank deposits—is multiple times the monetary base (currency + bank deposits). Separating short-term liabilities (STL) into official (monetary base + FDIC–insured demand deposits + Treasury bills) and non-official (short-term liabilities whose par value is not guaranteed by the government) shows that commercial banks are not alone in their capacity to create money. From 1990 to 2007, non-official

STL increased by almost 470 percent, while official STL grew by only 70 percent. And non-official STL contracted by almost 20 percent during the worst years of the recession (2007–2012), while official STL expanded by 50 percent. Clearly, there is no causal relationship between the amount of reserves (or official liquidity) and private money creation. The figure shows that money, narrowly defined as official STL, is endogenous (Wray 1990, 2011). It also shows that the system becomes more or less elastic to accommodate position taking in financial and real assets.

Figure 2. PCE Inflation and Growth Rates of Money Supply



Source: FDIC Quarterly Banking Profile; Bank of International Settlements (BIS); and Federal Reserve Economic Dataset.
Note: M3 series constructed by the author. It includes the following short-term financial liabilities: currency in circulation, demand deposits (DD), savings deposits, small-time deposits, retail money funds, large-time deposits, institutional money funds, repos, and eurodollars.

Now let's tackle the proposition that greater liquidity creates higher prices. From a theoretical perspective (more below), the argument presupposes a transmission mechanism that runs from money to higher prices. However, money cannot be created unless the private sector is willing to issue IOUs to take a position in assets. Easy credit

conditions cannot stimulate the economy or cause a credit boom when the expected proceeds from position taking in real assets are low or the private sector wishes to deleverage their position by retiring their IOUs.

Figure 2 shows that the PCE price index bears no relationship to the yearly growth in the monetary base (plus FDIC–insured demand deposits) or monetary aggregates M2 and M3. While all three measures of the money supply increased almost every year throughout the 1990s and mid-2000s, annual PCE inflation averaged around 2 percent. Inflation rates actually declined in 2008—the year that marked the most dramatic increase in the monetary base (plus FDIC–insured demand deposits)—and continue to do so even after the extraordinary measures undertaken by the FRB. Unsurprisingly, QE carries a deflationary, not inflationary bias, as the literature points out (see Williamson 2015; Fullwiler and Wray 2010; Kregel 2014).

Monetary Policy and the "Too Much Money" View

The idea that "too much money" causes inflation became part of the social imagination after being popularized by pop-Chicago economist, Milton Friedman. Too much money is the result of a money supply that grows faster than real output. The theory dates back to the quantity theory of money and the equation of exchange developed by classical economists in the late 19th and early 20th centuries, but was reinvoked by Friedman in the 1950s (see Friedman 1956). In the 1960s, Friedman and Schwartz (1963) provided the empirical foundation to the causation in the equation of exchange—from money to prices (and national income). Friedman's ideas were so influential that in 1966 the FOMC added to its policy directives "that bank credit growth should not deviate significantly from projections" (Bernanke 2006). By 1976, Franco Modigliani (1977: 27)—then president of the American Economic Association—declared "we are all monetarists now," and in 1979, the Paul Volcker FRB adopted targets for monetary aggregates—a period known as the *monetarist experiment.*

Despite the catastrophic failure of the *experiment,* and the complete breakdown of the relationship between growth in monetary aggregates and inflation rates, mainstream

academic economists and policymakers continued to defend the theoretical apparatus behind the too-much-money-inflation causality (see Fazzari and Minsky 1984). To be fair, the FRB has not adopted explicit goals for monetary aggregates since 1982, but the New Monetary Consensus (NMC) is a timid departure from the monetarist position (Goodhart 1995; Tygmoine 2009). The core reliance on the long-run non-neutrality of money and the golden rule that monetary policy determines inflation remains. Former FRB Chairman Alan Greenspan (2004) is famous for his assertion that "inflation is always and everywhere a monetary phenomenon," even after admitting a decade earlier that the statistical relationship between money and inflation was "muted" (FOMC 1994). Following his predecessor, Ben Bernanke (2006) defended the monetarist "strong" theoretical premise, crediting the empirical breakdown or "muting" (and thus the lack of influence of monetary aggregates in US monetary policy) to financial innovation blurring the line between means of payments (and media of exchange) and short-term financial instruments.

Since the empirical breakdown of the 1980s, the policy debate has shifted from the direct relationship between money growth and inflation to the relationship between interest rates, financial easiness, and credit creation. The NMC is typically expressed in a three-equation dynamic model (Meyer 2001) that includes an aggregate demand equation, a Phillips curve, and a monetary policy reaction function. The FRB controls the benchmark rate relative to the unobserved natural rate hoping to influence the whole spectrum of short- and long-term private rates of interest in order to fine-tune the amount of credit creation in the system to the FRB's statutory mandates.[5]

The impressive resilience of monetarist ideas is perhaps most obvious in the FRB's unconventional policy response to the crisis. Specifically, the series of QEs and the large-scale asset purchases (LSAP). In 2002, for example, Bernanke declared that another depression wasn't possible, for the FRB had learned Friedman and Schwartz's 1963

[5] The FRB has two statutory mandates as spelled out in the 1913 Federal Reserve Act: promote maximum employment and stable prices. In 1977, Congress amended the Federal Reserve Act to include moderate long-term interest rates as one of its goals.

lesson—i.e., "the best thing that central bankers can do for the world is to avoid […] crises by providing the economy with, in Milton Friedman's words, a 'stable monetary background'" (Bernanke 2002). Modigliani's claim that we are all monetarists now certainly did go a long way.

FOMC ONCE AGAIN REINFORCES THE CONVENTIONAL VIEW

Despite the catastrophic failure of the unconventional response, the FRB recently reaffirmed the monetarist view that inflation is a monetary phenomenon when in 2012 it adopted an explicit longer-run goal for the annual PCE index of 2 percent (FOMC 2016a). The objective is to anchor longer-run inflation expectations, which are deemed to be an important component in the price-setting behavior of forward-looking economic agents. Implicitly, the Fed is still adopting an expectations-augmented Phillips curve (Yellen 2015a), according to which inflationary pressures arise when the actual unemployment rate deviates from the natural rate of unemployment. The Fed's ultimate goal is to provide an anchor to longer-run inflation expectations (and minimize deviations of the unemployment rate from its natural level) by bringing the federal funds rate back to "neutrality"—a level consistent with its longer-run inflation target. As argued above, policymakers were especially eager to hike interest rates after many years of unprecedented monetary policy accommodation.

In normal times, the link between inflation and unemployment is established through the concept of the non-accelerating inflation rate of unemployment (NAIRU), introduced by Tobin (1980) and related to Friedman's (1968) famous natural rate of unemployment—the rate that prevails when the labor market is in equilibrium and workers correctly forecast the future price level. At this point, there are no upward pressures in real wages (a proxy to inflation). The NAIRU or the natural rate of unemployment supposedly cannot be altered by demand-side policies; it is a supply-side concept and hence determined by the structural conditions prevailing in the economy at different points in time (pace of productivity growth, rate of technological innovations, normal rate of

capital utilization, marginal propensities, incentives, demographics, etc.). Money is non-neutral in the short run and active management of the economy's overnight rate affects aggregate demand by making financial conditions more or less accommodative.

While unemployment is primarily outside of the direct control of the FRB, the [New Monetary] consensus is that "the inflation rate over the longer run is primarily determined by monetary policy" (FOMC 2016a). Long-run monetary policy then consists of: a) determining what inflation rate represents price stability; and b) anchoring expectations accordingly.[6] How? Through independence, forward guidance, and transparency. Complications arise in the short run because price rigidities, market failures, and erratic stochastic shocks tend to temporally impair generalized market clearing, moving the economy above or below its growth trend.

Excessive demand relative to supply brings about inflationary pressures. Where inflation is the problem, a less accommodative financial environment (i.e., higher short-term interest rates) is the solution. Higher rates mean less spending, less employment, and less output. The "maximum employment" leg of the dual mandate becomes secondary through the magic of the NAIRU—maximum employment is whatever positive rate is consistent with price stability. Periods of economic contraction require the opposite recipe—lower interest rates, faster credit creation, and NAIRU!—in order to restore maximum employment and price stability. A good central banker is one that is vigilant and takes away the punchbowl more frequently than it offers it.

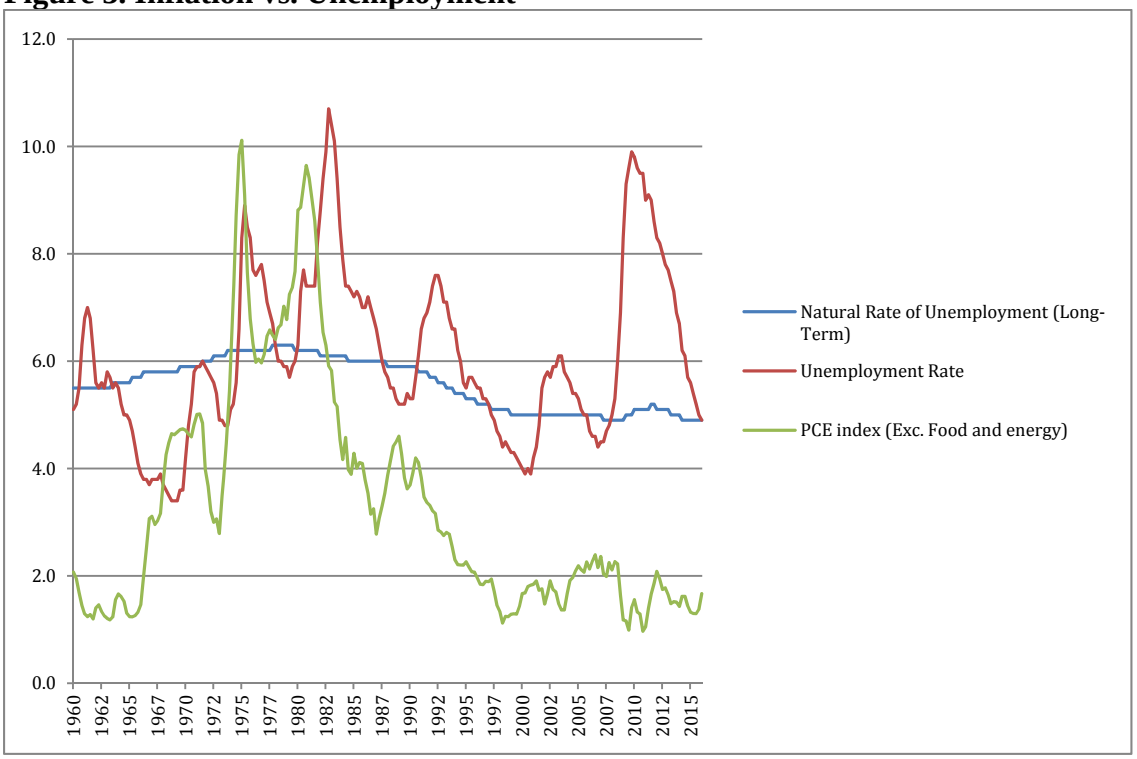
[6] Robert Lucas and Thomas Sargent first explored the link between inflation expectations and actual inflation in their formulation of the aggregate supply hypothesis, based on an extreme version of Muth and Friedman's rational expectation hypothesis. The idea was that economic agents are forward-looking when formulating expectations about the future—they make use of all relevant past and current information to forecast future economic data. The important point is that agents can never be systematically wrong—so, on average, their expectations are always correct. Price stability and monetary policy effectiveness require that the public "play along" and trust the Fed. Unannounced, unanticipated monetary shocks will cause the "sacrifice-ratio" to be high, and adjustments to be costly. They also cause the distrust of the private sector, which will then turn uncooperative in a game-theory framework (Kydland and Prescott 1977), causing economic instability and monetary policy ineffectiveness.

INFLATIONARY PRESSURES? WHERE?

As Yellen (2015a) explained, short-run fluctuations in the price level (i.e., away from the long-run trend set by monetary policy) are caused by fluctuations in the observed unemployment rate around its long-term natural rate (or similarly, of actual output around its long-run trend). A tight labor market is supposed to increase the bargaining power of workers, causing real wages to rise. In the short term, higher real wages affect prices in two ways: a) by increasing incomes, and hence private aggregate spending relative to aggregate supply; and b) by increasing input costs. These ideas are incorporated into the NCM equations discussed above.

As shown in figure 3, the inverse relationship between inflation and unemployment does not hold historically. While there were periods in which a higher rate of unemployment coincided with a declining PCE index, the norm seems to be that prices and unemployment move in the same direction. Further, periods in which the unemployment rate was below the long-term natural rate of unemployment have been associated with disinflation, not inflation.

Figure 3. Inflation vs. Unemployment

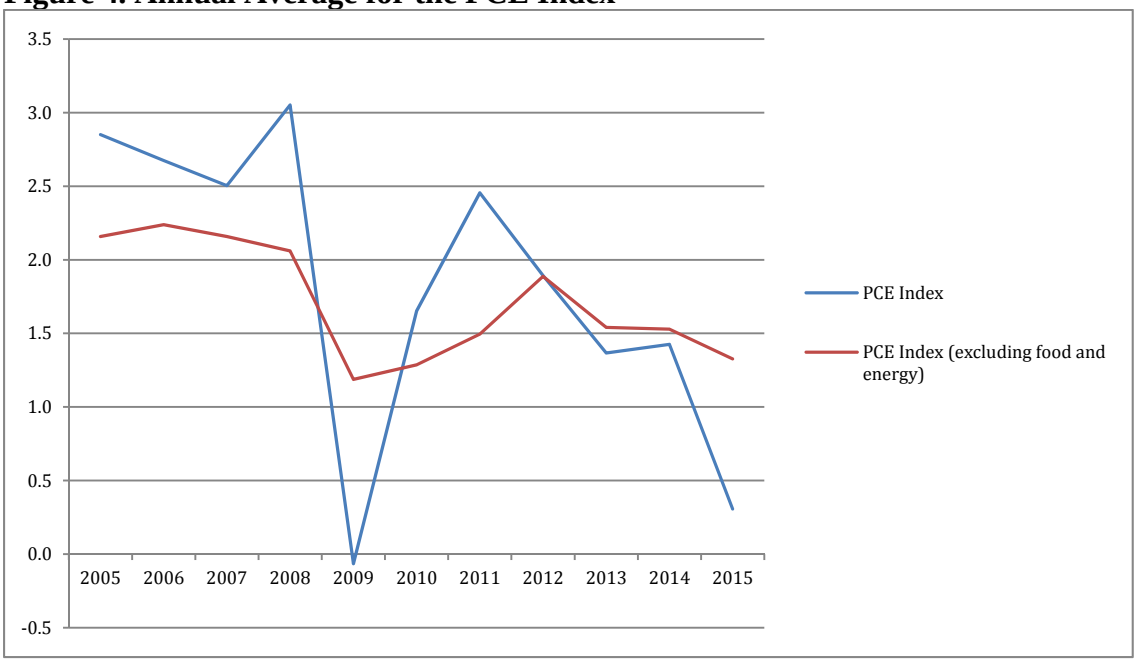


Source: Federal Reserve Bank of Cleveland (FRED)

Part of the urgency to hike rates is justified by the fact that we have officially reached maximum employment—the official unemployment rate as of May 2016 was 4.7 percent (below the CBO's estimation of the natural rate of unemployment)[7] and has remained at 4.9 percent (closer to the FOMC's median longer-run projection) since then (FOMC 2016e). However, as figure 4 shows, here again the relationship breaks down. Despite "official full-employment," headline inflation has remained stubbornly below the 2 percent target for over six years. In April 2016, the annualized PCE price index was at 1.01 percent[8]—its annual average has been on the decline since 2011, reaching a mere 0.30 average in 2015.

[7] Available at https://www.cbo.gov/publication/51129
[8] Latest data available at the time of writing.

Figure 4. Annual Average for the PCE Index



Source: Federal Reserve Bank of Cleveland (FRED)

Is Low Inflation Transitory?

The FRB has attributed the low inflation rates observed in 2015 to *transitory effects*, like the drop in oil prices and the appreciation of the dollar. In a recent testimony in front of the US Senate, Yellen (2016a: 3) declared that subdued inflation rates were cause by "earlier declines in energy prices and lower prices for imports"; however the core PCE price index (excluding energy and food prices) continued to decline—from the post-recession peak in 2012 of 1.88 to 1.32 in 2015. The average so far for 2016 is 1.65 percent. In an attempt to anchor market expectations, the FOMC has insisted that as transitory effects fade away, inflation rates will move back to their target in 2017 (FOMC 2016d, 2016e).

Anchoring is not happening, however. Survey- and market-based measures of longer-run inflation expectations continue to decline. For example, The Survey of Professional Forecasters revised downward its short-term (1-year) and longer-run (10-year) inflation expectations for PCE around 2.0 and 1.9, respectively. As shown in figure 5, the 5-year breakeven inflation rate (the spread between the yields of 5-year nominal Treasury

securities and 5-year Treasury inflation-protected securities [TIPS] bonds) and the longer-term equivalent series (10-year breakeven inflation rate) have been persistently below the FOMC's projections since 2014. The same is true for the 20-year and 30-year breakeven inflation rates not reported here. The market expects inflation rates in the future to be significantly below the summary of economics projections (SEP) or the FRB's inflation goal.

Figure 5. Breakeven Inflation Expectations and FOMC's Projected PCE Index

Source: Federal Reserve Bank of St. Louis

Further, the sharp appreciation of the dollar is unlikely to be reversed anytime soon, given the global recessionary environment—"normalization" would only make matters worse. There is also little reason to believe that the high oil prices observed during the period 2010–14 will resume since much of that increase is attributed to a speculative bubble in commodity markets. A simple trend line on the price of Brent Crude oil over the period 2000–15 shows that oil prices are back in line with their longer-run trend. Even if prices rise back to the 2010–14 levels, evidence suggests that inflation expectations are impacted by lower oil prices for up to ten years (Darvas and Huttl 2016; Elliot et al. 2015; Badel and McGillicuddy 2015), which, using the FRB's own reasoning,

should have a depressing effect in the price-setting behavior of economic agents for years to come.

A more fundamental problem, however, is that contrary to the transmission mechanisms implicit in the short-run Phillips curve, "tight labor markets" or the approximation to full employment have not resulted in increased bargaining power of workers or higher labor compensation. This is not a new phenomenon.[9] As discussed above, the two transmission mechanisms implicit in the short-run Phillips curve require that wages and labor incomes actually rise when unemployment falls close to the NAIRU, either to increase aggregate spending relative to aggregate supply, or generate a pass-through from higher input costs of production. Nominal average hourly earnings and the employment cost index have increased on an annual average over the post-crash period by 2.18 and 2.38 percent, respectively, which is still too low when taking into account productivity growth over the period (taking precrisis levels as a benchmark). As seen in figure 6, the rate of growth for both are far behind pre-recession levels, and currently (Q1 2016) showing signs of deceleration.

[9] Chairman Yellen is familiar with such a trend. During an FOMC meeting in 1996, she noted that despite the tight labor market of the time, "[r]eal wage aspirations appear modest, and the bargaining power of workers is surprisingly low" (FOMC 1996: 21–22). In fact, as can be seen in figure 3, unemployment rates continue to decline, and disinflation continued even after the unemployment rate fell below the natural rate of employment. Nonetheless, a strong commitment to the theoretical framework led her to "characterize the economy as operating in an inflationary danger zone" (FOMC 1996).

Figure 6. Employment Cost Index and Nominal Average Hourly Earnings

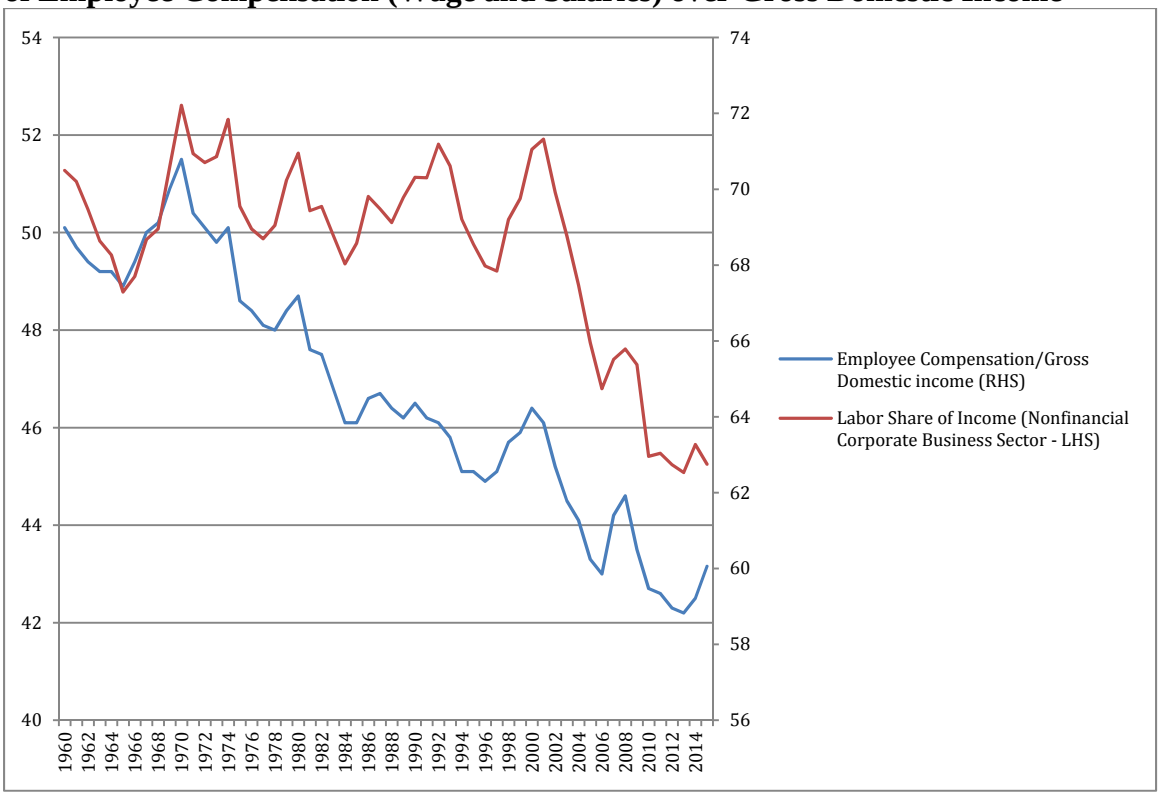
Source: Bureau of Labor Statistics

Figure 7 shows that wages and salaries have remained compressed relative to total income produced, and the labor share over gross value added and gross domestic income continues to decline, as well. It is worth noting that figure 7 challenges policymakers' claim that price stability in the 1990s and 2000s reflects monetary policy success (see Yellen 2015a; Bernanke 2006, 2013; Greenspan 2004). One can argue instead that price stability was achieved through a significant reduction in labor compensation and the bargaining power of workers, aided by monetary policymakers' "strong bias against labor and wage-led inflation" (Wray 2004: 9) and their prejudice against more direct policy measures to increase income (i.e., fiscal policy). A tight labor market, as measured by unemployment rates, is unlikely to conform to the money/demand-driven inflation implicit in the FRB's theoretical models, or the more convincing cost-push framework established by the Post Keynesian literature.

The reality is that without significant fiscal efforts to improve labor market conditions and accelerate labor compensation relative to total income, the labor share of income will

continue to decline, and inflation will remain below the FRB's long-term goal. According to a conservative back-of-the-envelope calculation, a yearly average growth of around 4 percent in hourly nominal wages over the period 2016–25 is necessary to contain the declining trend in the labor share of income, given the CBO's projected 1.8 percent yearly average growth in labor productivity for the period (CBO 2016), and the FOMC's 2 percent goal.[10] Consistent yearly growth in labor compensation above 4 percent has not been observed since 1980.

Figure 7. Labor Share of Added Value in Nonfinancial Corporate Sector and Share of Employee Compensation (Wage and Salaries) over Gross Domestic Income



Source: Authors' calculations; Bureau of Economic Analysis; Federal Reserve Bank of St Louis.
Note: Labor share was calculated as compensation of employees in the nonfinancial corporate sector divided by gross value added of nonfinancial corporate businesses minus taxes on production and imports.

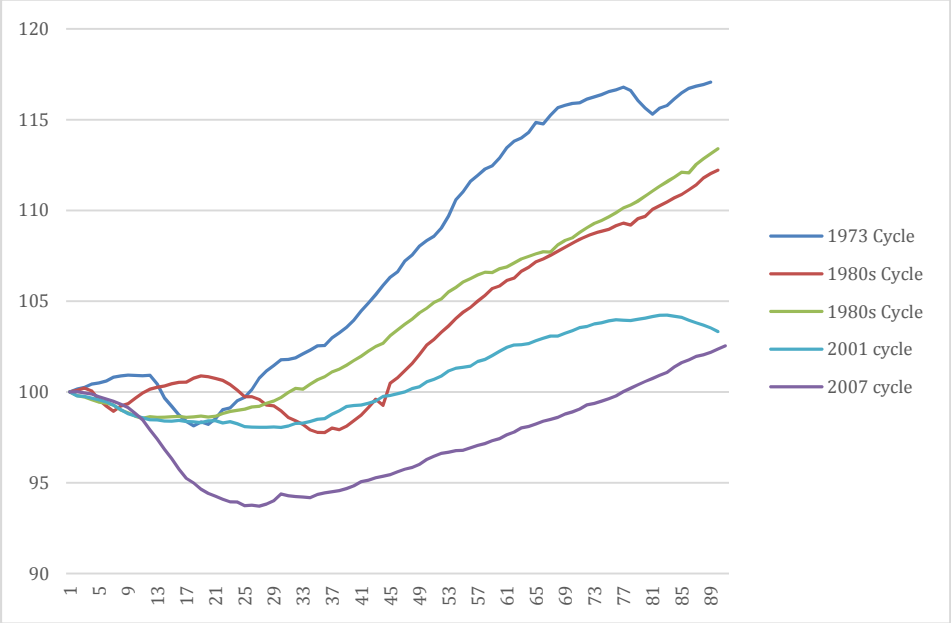
[10] Given that a 2 percent inflation target is very low (some call for an at least 4 percent target) and that the projections for labor productivity were revised down since 2007 due to cyclical reasons, we should expect much higher nominal wage growth to at least reverse the downward trend in the labor share of income.

FULL EMPLOYMENT: ARE WE THERE YET?

As of April 2016, the consensus among FOMC participants was that "labor market conditions had reached or were quite close to those consistent with their interpretation of the Committee's objective of maximum employment" (FOMC 2016c), and the remaining slack would be self-correcting as expansion continued. Positive remarks, like that of San Francisco FRB president John Williams (2016: 1), that "on the employment side, things are going very well" seem the order of the day among policymakers for some time now. For instance, according to Tracy et al. (2015),[11] at the New York FRB, 90 percent of the labor market gap opened during the Great Recession had closed by August 2015. The assessment was based on a constructed measure of the employment-to-population ratio gap (the difference between the demographically adjusted employment-population ratio, and the current employment-population ratio) and the inflation expectations–adjusted real wages growth[12] minus productivity growth.

[12] They use three measures for wage growth: compensation per hour, average hourly earnings, and the employment cost index.

Figure 8. Pace of Nonfarm Payroll Employment Recovery in Different Cycles (Number of Months)



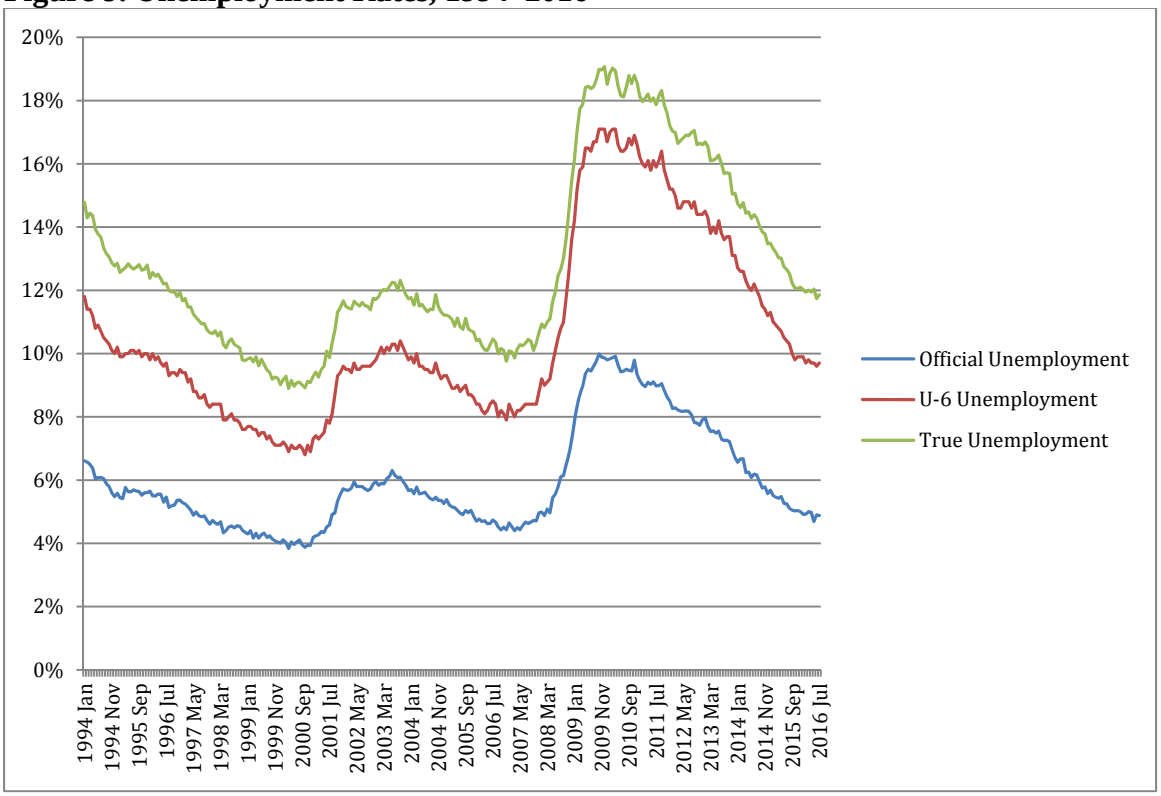
Source: Authors' own calculations, based on data from Bureau of Economic Analysis, NBER.
Note: The horizontal axis measures the number of months since the NBER peak for each cycle.

Even as the data shows otherwise, policymakers dismiss any slowdown in the pace of job creation as "transitory" (see Yellen 2016a). The reality is that payroll employment growth has been on a consistent decline for some time now. In the first six months of 2016, it averaged around 200,000 jobs added per month compared to a monthly average of 225,000 in 2015, and 260,000 in 2014. Further, as can be seen in figure 8, the pace of nonfarm payroll job creation has been much slower this time around if compared to previous business cycles—it took 78 months for the payroll employment index to return to the level prevailing at the peak of the previous cycle. Arguably, as the economy gets closer to maximum employment, the creation of payroll jobs declines. However, recent studies have estimated that the US economy is still short some 6.4 million jobs, and will require the creation of an average of 205,000 payroll employment positions per month for the next four years to achieve the same employment-population ratio that prevailed before the recession (Carnevale, Jayasundera, and Gulish 2015). Our own estimates show that the LFPR is still significantly depressed, primarily due to cyclical reasons—had the recession never happened, there would be 7.6 million more people in the labor force today (more on this below).

So What Does the Current Unemployment Rate Mean?

The answer is not much. As of July 2016, there were still 6.1 million people employed part time for economic reasons, and 2 million people marginally attached to the labor force,[13] which gives us a U-6 unemployment rate[14] of 10.1 percent. Further, of those unemployed in July 2016, 42 percent had been looking for jobs for over 15 weeks—the large majority of which reported being unemployed for over 27 weeks. These numbers are especially troubling since the long-term unemployed are more likely to leave the labor force (Krueger 2015), and those who stay face a much lower probability of finding full-time employment, regardless of labor market strength or the phase of the business cycle (Krueger et al. 2014).

Figure 9. Unemployment Rates, 1994–2016



Source: US BLS and author's calculation

[13] Those who want and are available to work and who looked for work in the past year, but did not actively search in the previous month.

[14] The U-6 unemployment rate is calculated as the ratio of unemployed workers plus those employed part time for economic reasons plus workers who are marginally attached to the labor force over the civilian labor force plus the number of marginally attached workers.

The Bureau of Labor Statistics (BLS) also publishes data on the number of people that are currently not in the labor force but want a job now.[15] That series is more comprehensive than the series "marginally attached to the labor force" that is used to construct the U-6 measure of unemployment because it also includes those who want a job but have not searched in the previous 12 months, or those who want a job but reported not being available for work in the reference week. In July 2016, this category comprised 6.2 million people, which reveals a true unemployment rate of 12 percent,[16] as seen in figure 9.

Taking labor force demographics into account hinders the prospects even more. The unemployment rate for racial minorities and less-skilled workers is comparatively higher at each stage of the business cycle, especially lagging behind official measures in the recovery phase—in plain English, these workers are the first to lose their jobs during an economic contraction and the last to find employment subsequently. For example, in 2015, the unemployment rate for white males averaged around 4.2 percent compared to 9.5 percent for African-American males. The unemployment rate for African-American teenagers (16–19 years) is currently at 27.1 percent. Less-skilled workers (those with a high school diploma or less) faced an average unemployment rate of 8 percent in 2015, which is four times the rate for skilled workers (those holding a BA or higher).

Unemployment Rates and Labor Force Participation

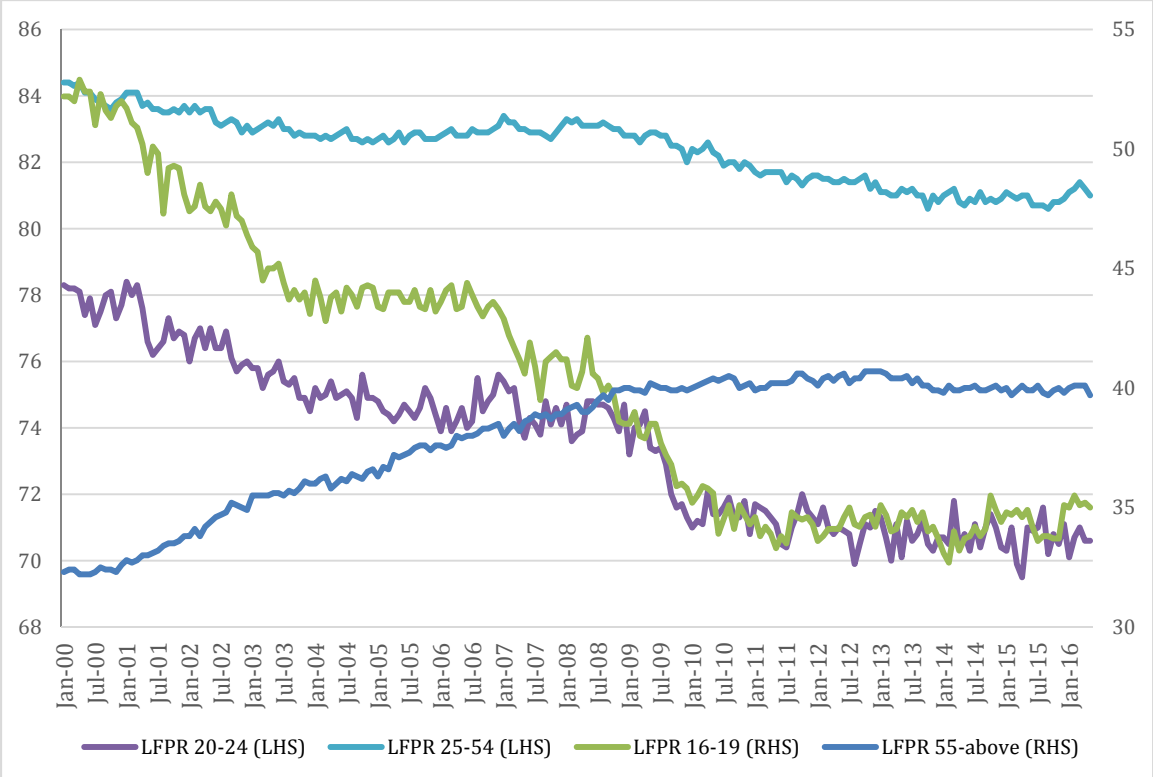
As hinted at, another important piece of evidence against the case for "normalization" is the continuously declining LFPR,[17] which makes the unemployment rate lower than it would be otherwise. The decline in the LFPR (and thus the employment-population ratio) is not a new phenomenon. The index achieved its historical peak in 2000, and its lowest level since 1977 in 2015—a mere 62.2 percent. Part of the decline is attributed to demographic trends (i.e., an aging population and the retirement of baby boomers).

[15] See series ID number LNS15026639 of the CPS, available at the BLS website.
[16] In other words, the ratio of the unemployed plus part-time employed for economic reasons plus those in the labor force who want a job now over the civilian labor force plus those not in the labor force who want a job now.
[17] The LFPR is the ratio of those who are employed or looking for jobs (i.e., those in the labor force) over the civilian non-institutional population (those 16 years of age or older who are not in the military).

Nonetheless, the downward trend accelerated with the recession as discouraged and underemployed workers dropped out of the labor force completely.

The FOMC seems to downplay such development. Some participants have even interpreted it as mostly benign. San Francisco FRB's President Williams (2016: 2), for instance, claimed that "much of the decline in the labor force participation rate can be explained not by disheartened workers, but by demographic and social shifts." The demographic is the aging labor force. The reason is that labor force participation for those 55 and over tends to be lower, so an aging population naturally brings down the overall labor force participation rate. However, a closer look at the data proves this hypothesis untrue.

Figure 10. Labor Force Participation Rates for Different Age Groups



Source: US BLS

While data computed by the BLS in their Current Population Survey (CPS) clearly shows an aging civilian non-institutional population (CNIP), labor force participation for those 55 and over has been increasing, as can be seen in figure 11. The decline is mostly for the prime working-age group, those between 25 and 54 years old.[18] If anything, since the recession hit, labor force participation for the former group is slowing down—not accelerating—the rate of overall decline in labor force participation.[19] This is not surprising given the impact of the recession on pension funds or retirement accounts managed by professionals. It is likely that a larger proportion of workers have chosen to postpone retirement due to losses in their pensions or retirement funds, in order to support immediate family members who cannot find jobs or have returned to school, or even to restore balance sheet positions resulting from excessive indebtedness and/or falling housing prices.

By "social shifts," Williams (2016) means voluntary changes in personal preferences. He gives two reasons for his hypothesis. First, younger people "aren't working as much as they used to"; they have instead decided to go back to school to improve their skills. Second, there has been "an increase in people [… that] traded a second paycheck for spending more time at home, whether it's for child care, leisure, or simply that it's a better lifestyle fit" (Williams 2016). Here he is invoking the famous *marginalist* labor-leisure trade-off.

It could be that part of the decline in the LFPR for workers ages 20–54 results from the voluntary withdrawals that Williams calls "social shifts"; however, there are a number of counterarguments to be considered before one can generalize this hypothesis. First, as can

[18] In the period 2006–15, labor force participation for those older than 55 increased at an average of 0.27 percent over the period, while labor force participation for the group 25–54 declined at an average of 0.11 percent.

[19] Historically, the LFPRs for the age groups 20–24 and 25–54 are higher than for other age groups. If the percentage of the population in prime working age (who have a significant higher LFPR) is declining relative to the percentage of the civilian population older than 55 (which is the case in the US), we would expect, all else equal, the shift in age demographics to exert downward pressure on the overall LFPR, as it has. However, the fact that the LFPR for age group 55 and above has increased by 24 percent since April 2000 means that it has slowed down the pace of fall in the overall LFPR that naturally results from an aging population. Add to that the fact that LFPR has fallen for all other age groups (33 percent for age group 16–19, 10 percent for age group 20–24, and 5 percent for age group 24–55) and we can conclude that aging is a less-important factor in the fall of the LFPR than it would otherwise be.

be seen in figure 10, LFPR for the age groups more likely to withdraw from the labor force for educational purposes (i.e., LFPR16–19 and LFPR 20–24) has been stagnant since 2010 after falling precipitously over the worst years of the recession. Second, the primary driver of the decline in the overall LFPR is in the prime working–age group (i.e., LFPR 25–54). Further, the historical trend for married couples with children under 18 shows a significant increase in the percentage of families where both parents are employed—from 25 percent in 1960s to almost 61 percent in May 2016—according to the BLS.

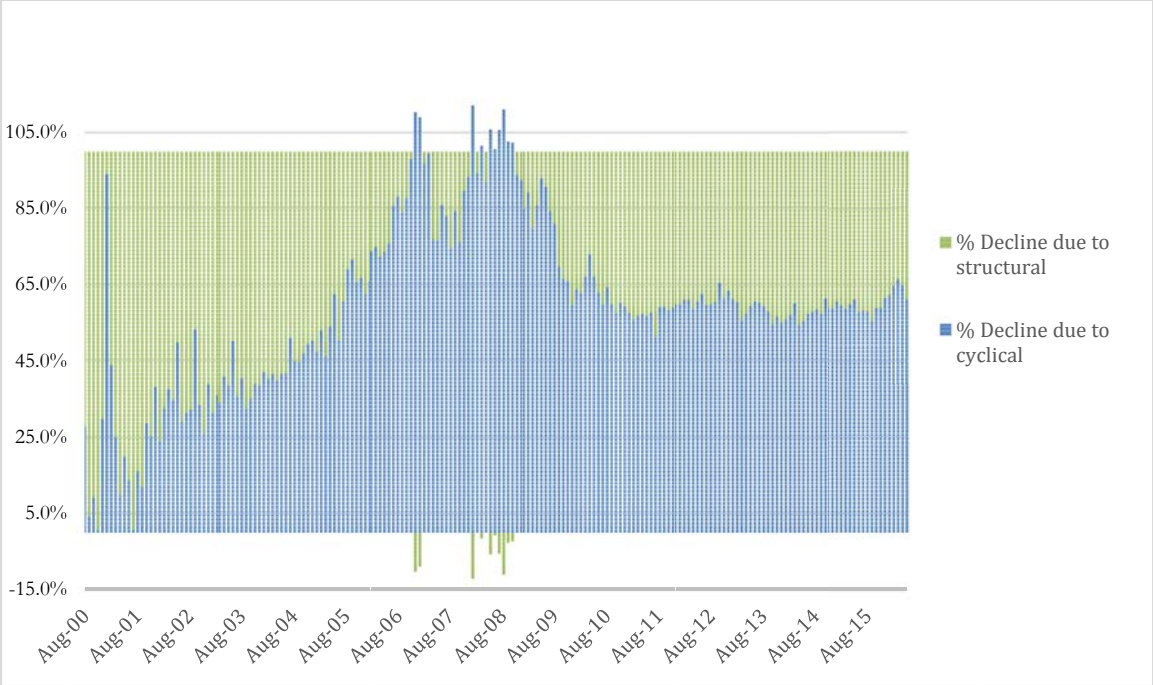
We Are Still Missing 7.6 Million People in the Labor Force

A simple exercise can be used to roughly estimate the percentage of the decline in the overall LFPR over the period 2000–16 attributed to nonstructural (cyclical and other) factors. The results are plotted in figures 10 and 11. The methodology used is explained in more detail in appendix 1. Briefly, following Mitchel (2014), the time series is constructed by holding constant the proportion of the different age groups in the CNIP as of April 2000 (when LFPR reached its historical peak of 67.3 percent), and allowing the LFPR for each age group to vary over time. As the population ages, the overall LFPR tends to slow down because of the increase in the relative weight of the CNIP above 55 (which has a lower LFPR). Keeping the CNIP constant allows one to estimate what the LFPR would have been had the age demographics not been a factor. The difference between the actual and the constructed LFPR gives an idea of the decline in LFPR due to the aging of the labor force. The remainder of the difference—what I call “cyclical” in figure 11—is attributed to economic factors, like discouragement from medium- and long-term unemployment, and other noneconomic factors (including “social shifts).

Using the constructed time series, figure 11 shows how much of the decline in the LFRP in a given time period—from its April 2000 peak—was due to structural shifts (green bars) and cyclical factors (blue line). For example, in July 2016 the actual LFPR was 62.8 percent, representing a total decline of 4.6 points from the April 2000 peak. Our constructed LFRP tell us that in the absence of changing age demographics, the LFPR would have been 65.7 percent, which represents a decline of only 1.6 points from the

peak. The other 3 percentage points can all be attributed to cyclical reasons. In other words, only 34 percent of the total decline in the labor force from the 2000 peak was due to aging; the other 66 percent was due to other reasons, mostly cyclical economic factors. In fact, the graph below shows that had the recession not happened, LFPR would have actually increased in 2008, even as the first generation of baby boomers became eligible for Social Security benefits.

Figure 11. Decomposing the Decline in the Labor Force Participation Rate (LFPR), April 2000–May 2016



Source: Authors' calculations based on US BLS data.

It is worth mentioning that our rough estimation is even a bit conservative when compared to other studies like Shierholz (2012), who finds that in the period 2007–11 more than two-thirds of the decline in the LFPR was cyclical. Our numbers point to an average of 52 percent over the same timeframe, which is in line with research done by the White House Council of Economic Advisers (2014).

Figure 12 plots the constructed time series against the actual LFPR. Clearly, the ratio would have been much higher today had the recession not happened. In July 2016, the LFPR would be 65.7, as opposed to the 62.8 percent prevailing today. The 2.9 point

difference may seem small, but it accounts for approximately 7.4 million people. From a full-employment policy perspective,[20] let's consider that all 7.4 million would come back to the labor market if adequate jobs were available. Adding to this number the 7.7 million people who are officially unemployed today (July 2016) and the 6.1 million people who are employed part time for economic reasons, and we can conclude that the US economy is still short some 20 million jobs. As argued above, this represents a *de facto* unemployment rate of 12 percent.

According to the BLS, out of the 6.25 million who want a job now, 5.7 million people are available now. Replacing our estimates with the BLS numbers means that we are still short some 19.5 million adequate jobs! On average, it would take an increase in payroll employment of 325,000 jobs per month over the course of the next five years before the economy is close to full employment. Until then, tightening monetary policy on the basis of the dual mandate is completely unjustified.

[20] According to the BLS, the number of people marginally attached to the labor force (i.e., not in the labor force, but willing and ready to work) in May 2016 was 1.7 million, which is significantly less than our estimates.

Figure 12. Actual vs. Estimated Labor Force Participation Rate, April 2000–May 2016

Source: Authors' calculations based on US BLS data

Further, these numbers bring into question the whole idea about secular stagnation—a hot topic among mainstream economists now, of which Lawrence Summers is perhaps the most famous. According to stagnationists, the economy is stuck in a lower growth trend because structural shifts (declining labor force, lower capital intensity, and lower technological innovation) in the last 15 to 20 years have reduced the equilibrium real rate of interest that results from the "natural balance between saving and investment" (Summers 2014: 69). The inducement to invest relative to saving is now permanently reduced due to lower expected proceeds, bringing the real interest rates associated with full employment into the negative zone. Since the zero lower bound is still positive in real terms, monetary policy and (more specifically) ZIRP have been unsuccessful. Part of the solution would then rest in setting policy rates at a level negative enough to be below the neutral rate. But take, for example, the significant downward revisions to potential GDP since 2007. Between 2007 and 2014, 38 percent of the CBO's downward revisions were

due to labor demographics,[21] (i.e., the belief that the decline in LFRP is mostly structural). The incorrect diagnosis may condemn us to a path of permanent labor underutilization.

IF NOT INFLATION AND EMPLOYMENT, THEN WHAT?

As argued above, there are little theoretical or empirical grounds on which to justify the FRB's urgency to rate hike. Even if we buy into the policymaker's own logic that monetary policy has a meaningful impact over prices and employment and it must be preemptive and gradual (especially after years of extreme accommodation), without a stronger fiscal spending response, the slack in the labor market is likely to remain, as are low levels of inflation. One can thus speculate on additional reasons behind the FRB's urgency. The exercise does not require much imagination. Policymakers have been pretty explicit about their concern over the stability of the financial system after years of unconventional policy encouraging risk taking, leverage, and search for yield.

Fed Funds and Financial Stability

Recall that in her farewell to ZIRP speech, Yellen declared that "holding the federal funds rate at its current level for too long could also encourage excessive risk-taking and thus undermine financial stability" (Yellen 2015b: 10). As CEO of the Philadelphia FBR, she had already declared that higher short-term rates and tighter monetary policy would have contained the boom in housing prices, as well as the excessive leverage in securitized market. Her conclusion was that "the answer as to whether monetary policy should play a role [in financial stability] may be a qualified yes. […] monetary policy that leans against a bubble expansion may enhance financial stability by slowing credit booms and lowering overall leverage" (Yellen 2009: 5).

[21] Between the 2007–14, the CBO revised downward the trend growth of potential GDP by 7.3 percent, 2.7 percent of which due to a downward revision in labor potential hours. The remainder includes a 2.4 percent reduction in capital services, a 1.4 percent potential total factor productivity, and 0.7 percent due to other reasons; see CBO (2014).

Other FOMC participants share the same view. Stanley Fischer declared that "when interest rates are extremely low, risks to financial stability might grow" (Fischer 2015a). And recently Williams argued in favor of the use of monetary policy against (credit) imbalances that lead to bubbles, like the 1990s dot-com rush and the 2000s housing bubble. According to him, "experience shows that an economy that runs too hot for too long can generate imbalances […]. Waiting too long to remove monetary accommodation hazards allowing these imbalances to grow, at great cost to our economy" (Williams 2016: 5–6).

Echoing these concerns, the April 2016 FOMC meeting started with a long theoretical and empirical discussion over the relationship between monetary policy and financial stability. The problem identified by the staff was that "relatively few macroprudential tools are available to financial regulators in the United States and that, for the most part, such tools are untested"(FOMC 2016c). Hence, despite some considerations over macroeconomic costs versus financial stability benefits, "participants generally agreed that the Committee should not completely rule out the possibility of using monetary policy to address financial stability risks" (FOMC 2016c). The NMC literature implied that the cautious use of monetary policy to promote financial stability was justified only as it threatened the dual mandate, particularly price stability (Bernanke 2013; Preat 2012; Yellen 2015a).

A detailed theoretical overview of the role of financial stability in monetary policy responses is beyond the scope of this paper.[22] There is little doubt, even among the mainstream now,[23] that the FRB has a significant preventive role to play in guaranteeing the stability and robustness of the financial system beyond the dual mandate through the close supervision, oversight, and regulation of financial institutions, and by acting as the lender of last resort during a liquidity crisis. It is unclear, however, that countercyclical/active fed funds rate manipulation could or should be used to contain leverage, excessive risk taking, or speculative bubbles. As explained above, financial

[22] See Tymoigne (2009) for an excellent summary of the literature.
[23] See Borio and Zhu (2012) and IMF (2015).

institutions extend credit endogenously if willing borrowers and profitable opportunities (or the perception thereof) exist. While the overnight rate sets the benchmark rate, it only indirectly influences the whole spectrum of short- and long-term rates. Other considerations, like liquidity preference, state of confidence, and expected path of future short-term rates go into affecting the term structure. So a zero fed funds rate does not preclude other short-term rates from being positive, and "a positively slopped yield curve does not lead to speculation by itself" (Tymoigne 2009: 15).

To be sure, the flattening of the yield curve can reduce banks' profitability by compressing net interest margins (currently at 3 percent) and net interest income. Since 2011, banks' return on equity (RoE) has averaged around 9 percent, compared to 15 percent in the period 1992–2006. As interest rates rise, net interest income and banks' RoE are supposed to increase. However, the impact of rising rates on banks profitability is uncertain. Rising rates, for example, may have an adverse impact on noninterest income, like trading activities and banks' securities portfolio (as higher rates are used to discount future cash flows), and through an increase in loss provision (as the possibility of defaults increase). It is unclear which one will prevail. Borio, Gambacorta, and Hoffman (2015) find evidence that small increases to interest rates have a statistically significant net positive impact on banks' profitability when interest rates are low, although Alessandri and Nelson (2015) find evidence that this impact is negative in the short run.

Even if we buy into the premise that low interest rates have been associated with lower bank profitability, search for yields, leverage, and risk-taking, there is little empirical evidence to "the simple statement that tight monetary policy conditions would prevent the rise of bubbles" (Posen 2006: 3), the discount of risk, or credit creation in times of euphoria when profit-seeking institutions leverage their balance sheet—and their creativity—to take positions in assets. Further, interest rate volatility has been associated with financial market disruption (Wray 2007) and financial innovations that increase fragility, like the "originate and distribute model," because of the disincentive to hold asset positions that are interest-sensitive (Tymoigne 2009), or the use of derivatives to

hedge risks or gamble on the future path of the fed funds rate. The question is why would the government want to incentivize such behavior?

Yet again, history reveals enough dramatic episodes of instability precipitated by interest rate movement large enough to disrupt balance sheet positions (*à la* the Volcker experiment as observed by Minsky [1992] and Wray [1994]), or small enough to disrupt nominal financial outflows relative to inflows of various economic agents (Minsky 2008 [1986]). In today's still highly leveraged economy, raising interest rates may increase financial fragility, as service payments rise relative to disposable income.

As Wray (1995: 209) observed, "above all, monetary policy should be directed toward maintaining stable interest rates," not in an attempt to fine-tune real and nominal variables (Wray 1995) or promote financial stability. If anything, a low, permanent fed funds target—perhaps at zero—can improve the stability of the financial system (Wray 2007; Tymoigne 2009) as it eliminates one element of uncertainty. Further, as Wray (2007) explains, a zero fed funds rate is consistent with Keynes's (1936) call for the "euthanasia of the rentier" because it reduces the incentive to engage in the antisocial behavior of being rewarded for risk-free, "functionless" investments. The reality is that in the absence of appropriate proactive regulation, supervision, and oversight by central banks and other government bodies, the plasticity of the financial system will recreate fragility, regardless of the level of overnight rates or the monetary policy stance.

CONCLUSION: ARE RATE HIKES JUSTIFIED?

This paper has argued against the FRB's rationale for the "normalization" of the fed funds rate by reviewing some of the underlying theoretical and policy rationales used by policymakers. It was argued that part of the urgency to start normalization was based on the fear that the extended period of monetary accommodation could lead to the "overshooting" of the goals of the dual mandate, particularly inflation, as the US economy approximates "official" full employment and continued in its slow recovery. In

that regard, the paper disputed the fear of overshooting on many fronts. First, it was argued that the monetarist transmission mechanism (the idea that inflation is caused by monetary factors) does not stand empirical scrutiny. The economy's money supply is determined endogenously, as profit-seeking financial institutions leverage their balance sheets to take positions in assets. This process happens regardless of the amount of reserves placed with the banking system or the level of interest rates, per se. In that regard, using interest rates in order to fine-tune the amount of credit creation in the financial system to the dual mandate is little but a departure from failed monetarist ideas. Further, the "overshooting" thesis finds little ground in the monetarist/textbook Keynesian short-run trade-off between inflation and employment. Again, history shows that the NAIRU is nothing more than a theoretical construction that bears little resemblance to the complex reality of our social system. Even if it did, there is little reason to believe that labor markets are approximating full employment. More importantly, full employment does not necessarily translate into inflationary pressures if the share of labor income remains compressed and workers have lost the bargaining power over their wages. Here, policymakers' beliefs that the dangerously low inflation levels we observe today are transitory is completely misplaced.

Finally, the paper dealt with policymakers' anxiety about tightening monetary policy for fear that accommodation leads to financial instability as it increases the incentives for banks and other financial institutions to engage in riskier practices as they search for yields to restore their profitability. History seems to point out that these practices happen at high or low levels of the fed funds rate. The fed funds interest rate channel works indirectly as it influences other short- and long-term rates prevailing at a point in time. However, a number of other things go into determining the term structure, including uncertainty over future economic prospects, and the policy rate itself. This is a perfect opportunity for the FRB to commit to a stable fed funds rate at a level that would euthanatize the rentier, as Keynes called for some 90 years ago. Unstable policy rates have been associated with episodes of instability and tend to encourage risky practices, such as the use of the derivatives. It is unclear if transparency and gradualism can prevent these perverse effects so long as the fed funds rate continues to be a policy instrument

that responds to fundamentally uncertain variables. We don't have to go too far to prove this point—the FOMC has already reversed its normalization course a number of times this year. Using the fed funds rate as a macroprudential tool is dangerous and gets in the way of the more fundamental and resource-consuming role that the FRB (along with other competent bodies) should be playing in the regulation, supervision, and oversight of our financial system to ensure that the financial industry goes back to servicing the pressing needs of society instead of serving itself.

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APPENDIX 1. DECOMPOSING LABOR FORCE PARTICIPATION RATES

The methodology used here is similar to the one used in Mitchel (2014). The labor force participation rate (LFPR) is calculated by dividing the total labor force in a given time period, t, by the civilian non-institutional population (CNIP) ages 16 or older in the same period. The Bureau of Labor Statistics (BLS) provides monthly information about the labor force and the civilian population for the following age groups: 16–19 years old, 20–24 years old, 25–55 years old, and 55 years or older. One can calculate the $LFPR_{i,t}$ for age group i in time period t by using the following formula:

$$LFPR_{i,t} = LF_{i,t} \div CNIP_{i,t}$$

Where $LF_{i,t}$ is the labor force for age group i in time period t, and $CNIP_{i,t}$ is the civilian non-institutional population for age group i in time period t. The labor force participation rate for all age groups in time t ($LFPR_t$) is calculated by:

$$LFPR_t = \sum_{i=1}^{4} \frac{LF_{i,t}}{CNIP_{i,t}} \times \frac{CNIP_{i,t}}{CNIP_t}$$

We decompose the decline in the LFPR by comparing the actual labor force participation rate for month t, with a constructed measure of what the LFPR would have been in month t, had the age demographic remained the same as April 2000 (in other words, assuming that the percentage of each age group in the CNIP remained the same). Our constructed $LFPR_{estimated}$ for month t is measured as follows:

$$LFPR_{estimated,t} = \sum_{i=1}^{4} \frac{LF_{i,t}}{CNIP_{i,t}} \times \frac{CNIP_{i,t=\,04/2000}}{CNIP_{t=\,04/2000}}$$

The $LFRP_{estimated,t}$ measure provides a rough estimation of the decline in the total labor force participation rate for month t that was due to cyclical or other reasons. In other words, had the population age remained constant from its April 2000 peak, what would have been the labor force participation rate today. The difference between $LPRT_t$ and

$LFRP_{estimated,\ t}$ provides a measure of the labor force participation rate due to structural (i.e., aging population) reasons.