YPFS Lessons Learned Oral History Project: An Interview with
William English

William B. English
Sandra Ward

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Lessons Learned Oral History Project Interview

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Introduction:

The Yale Program on Financial Stability (YPFS) interviewed William B. English, a longtime veteran of the Federal Reserve Board, regarding his time as deputy director, Division of Monetary Affairs, at the Board in 2008–10, a position that put him close to many of the critical decisions made in response to fast-moving developments during the height of the Global Financial Crisis (GFC) and the subsequent recession.²

English began his career at the Board in 1992 as an economist. In 1996–97, he fulfilled a temporary assignment as visiting senior economist at the Council of Economic Advisers. Also while at the Board, English served as a visiting senior economist at the Bank for International Settlements during a one-year leave in 2002–03.

In 2010, he was elevated to director of the Division of Monetary Affairs and secretary to the Federal Open Market Committee (FOMC). Since 2016, he has been at the Yale School of Management where he now is the Eugene F. Williams, Jr., Professor of the Practice.

This transcript has been edited for accuracy and clarity.

Transcript

YPFS: Can you give us an insider’s view of what was happening at the Federal Reserve in 2007-08? Were you getting glimmers of a problem in the financial markets?

English: Starting in early 2007, there were some problems in mortgage markets particularly with sub-prime mortgages. There was a lot of volatility in February and March, but it seemed to settle down after that. There were some investment funds that were heavily invested in mortgage-related assets, including a couple of Bear Stearns’ that closed early in the summer. That was

¹The opinions expressed during this interview are those of Mr. English, and not those any of the institutions with which he is or was affiliated.
²A stylized summary of the key observations and insights gleaned from this interview with Mr. English is available here in the Yale Program on Financial Stability's Journal of Financial Crises.
a surprise and generated a certain amount of market reaction, but basically everything seemed okay. We were aware, certainly, that the housing market was in a big slump, and there was likely to be a protracted slump because there were going to be losses on mortgages, but market functioning seemed, except for these periods of volatility and reduced liquidity, to be okay.

The big event was the August 9, 2007, announcement by BNP Paribas that their investment funds were heavily invested in US mortgage assets and weren’t going to redeem shares anymore because they didn’t know how to value the mortgage assets. That seemed to set things off in a way that rippled through the financial sector. Immediately after the announcement, there was a big slowdown in liquidity provisioning largely in Europe, but also in the US. The European Central Bank (ECB) had to go in and add a lot of liquidity to keep their money markets functioning on the 9th and the 10th [of August 2007], and the Fed did the same. It was immediately clear that there was a big problem. What we didn’t know at that point, of course, was how big a slump it would be and how long it would last.

YPFS: Was the nature of the problem clear at that point?

English: The way we read it at the time was that there were going to be significant losses on mortgage-related assets. That was reducing the liquidity of mortgage-related assets, and that was creating funding problems at banks. Nobody quite knew where the losses were going to end up and people became much less willing to take mortgage-related assets as collateral, and there were funding problems. These problems were quite widespread because, again, nobody quite knew who was exposed to these mortgages. The extent of the problems for the valuation, liquidity, and loss-potential of the mortgage assets became apparent when BNP said, "We can’t value these securities so we can’t sell them." I think a lot of banks started questioning their counterparties and wondering which ones were okay and which ones might not be okay, and whether they wanted to lend to them or not. There was a real pulling back from providing what had been routine short-term liquidity among banks and other large financial firms.

YPFS: What was the Fed’s monetary policy at the start of this, and how did that evolve as the crisis unfolded?

English: Initially, the policymakers made a big distinction between monetary policies, such as setting the Federal Fund Rate and its effects on output, employment, and inflation, versus what are referred to as credit easing policies. We had financial markets facing great stress and that was going to make credit harder to obtain for a range of institutions, and because those institutions were under pressure, potentially households and businesses would be as well.
The first step taken focused on credit easing policies, effectively how do you try to make these markets adjust and function properly? The thought was that there were losses and changes in liquidity, but institutions and markets would adjust, and, after a period of adjustment and volatility, things would settle down. So, the next question was how do you encourage that adjustment to take place? The way that was done initially in August 2007 was by using the discount window lending policy. Ordinarily, discount window loans were made at an interest rate of a percentage point above the target for the federal funds rate, and they were generally for one day. The idea behind discount window loans is that they resolved very short-term liquidity problems, maybe a bank had a computer problem, or it faced some very unexpected payment that suddenly had to be made. Generally, if you found yourself at the discount window, you’d be out the next day.

To stimulate markets the board cut the discount rate by 50 basis points, or half a percentage point, to make it less of a penalty rate. It also allowed loans to be made with a maturity of 30 days. They also said the 30-day loans were renewable, and so at the end of the 30 days, banks could roll the loan over and get a new discount window loan. In theory, that was very much a change that should have eased money markets because banks could come to the discount window. What we discovered was, the banks didn’t want to come to the discount window because there was stigma attached to that.

YPFS: Why was there a stigma?

English: The banks believed borrowing from the discount window would look bad in front of regulators and make the people in their Treasury departments look bad in front of their managers. There was also concern that, although the Fed didn’t at that time publish the names of borrowers, people could identify the banks involved despite there being a lag on disclosure of the transaction. This, coupled with the fact that the Fed also published balance sheet data for each reserve bank meant that banks were generally unwilling to borrow at the discount window and thus, these changes weren’t as effective as the Fed had hoped.

YPFS: Prior to this, had there been theories about the stigma associated with the discount window? Or was this a revelation?

English: Not at all. There had been a lot of work done on the discount window around 2000-01. Prior to that time, discount window loans had been made at below market rates for historical reasons. That meant that the reserve banks had to push back on commercial banks and other depository institutions that wanted to come to the discount window, because otherwise, they would be happy to borrow at below market rates there. It was a heavily monitored rate, and so your reserve bank would lend to you if there was a sufficiently bad problem,
but nobody wanted to admit that they had one. Prior to 2001, that was the way the amount of credit at the discount window was limited.

The Fed thought that the discount window wasn’t working very well as a safety valve for money markets, so they moved the discount rate above the target federal funds rate and, in theory, made it a “no questions asked” facility. You had to post good collateral, but you had a right to borrow if you wanted to. The old stigma of this being something that you really weren’t supposed to use gave the sense that going to the discount window was a sign of weakness. So even as people got more worried about the viability of financial firms, nobody wanted to show a sign of weakness.

**YPFS:** What was the next response given that the discount window mechanism wasn’t working as you’d hoped?

**English:** There were two things. Firstly, because financial markets weren't functioning very well, there was a sense that the outlook for the economy was worse, so the committee cut the federal funds rate. The staff also prepared facilities to improve the provision of liquidity to get around the stigma problem. One was called the Term Auction Facility, or TAF. That was a way to auction discount-window credit so the rate on the discount window credit became more of a market rate. You didn’t necessarily win at the auction, but if you did win at the auction, you got the cash with a couple day's lag. TAF was set up in a way that there wouldn't be stigma but would just be a sign that you were using one of a range of markets to obtain funding at market rates.

**YPFS:** Was that effective?

**English:** That was ultimately pretty effective, but it was developed in a hurry in August and September.

We also developed a proposal for swap lines with foreign central banks. Under a swap line, say with the European Central Bank, the ECB provides euros to the Fed as collateral and the Fed provides dollars to the ECB. Then, the ECB would lend the dollars to European banks. A lot of the problems among European banks were that they had bought a lot of risky mortgage-related assets in the US that were denominated in dollars, so when they wanted to finance them in dollars to avoid foreign exchange risk, they were finding it hard to obtain all their financing.

TAF and the swap lines were discussed in September, and at that point conditions seemed to be improving. There was the sense that maybe there was a one-time adjustment that had to be made, but that the worst of it was over and things would continue to improve. The committee decided to not go forward with the two programs in September, but then conditions deteriorated again later in the fall, and they went forward with them in December.
YPFS: Was there a lot of debate being waged or, because of the nature of the problem, was there a lot of unanimity among members?

English: There was certainly a lot of debate. Most of the policymakers realized there was a serious problem and that central banks like the Fed existed in part to provide liquidity assistance, so it was an appropriate thing for the Fed to do. There were some folks, some policymakers, such as Jeff Lacker (Federal Reserve Bank of Richmond), Charles Prosser (Federal Reserve Bank of Philadelphia), and one or two others who weren’t eager to provide a lot of emergency liquidity. They viewed doing that as, in effect, reducing the costs to institutions that had made bad decisions, and would encourage other firms to make bad decisions in the future. I remember at one FOMC meeting Jeff Lacker said, "I’d rather just cut the federal funds rate to improve the outlook for the overall economy and not have one of the lending programs," because he thought the effect on future risk taking would be undesirable.

We made significant efforts to work with other central banks, as well. Much of the funding problems stemmed from foreign institutions, and so, there was a lot of discussion with the European Central Bank, and Swiss National Bank, over how to provide dollars through the swap lines. An additional concern was how the swap lines would relate to the way the Fed was going to provide dollar funding through the Term Auction Facility in the US. The discussions resulted in a joint announcement about the introduction of the TAF and the swap lines in which the Fed and ECB stated that they would run TAF and euro-area auctions in parallel ways to coordinate the international response to the crisis.

Through the crisis from 2007 to 2009, the sense that all the central banks were working together seemed to help with financial market confidence and business confidence.

YPFS: It had the effect of settling markets down for a time?

English: Ultimately it took a lot to settle markets down, but it did seem to help when those announcements came out. People at least knew that the central banks were talking and working together and trying to figure out how to address the problems that had arisen.

YPFS: That gets us through the fall of 2007, approaching the spring of 2008, when things got worse.

English: Conditions settled down for a while after the introduction of TAF and the swap lines. In January and February things looked to be doing a little better, but this only lasted until early March. In the fall, there had been a lot of pressure on various small and somewhat obscure shadow-banking entities, structured investment vehicles, and asset-backed commercial paper conduits. In the spring, however, suddenly there was real concern about the big investment banks. They had a lot of troubled mortgage-related assets on their books, and
they started to have serious funding problems. In March, the Fed announced the Term Securities Lending Facility [TSLF], which was a lending facility that provided collateralized loans for a term of four weeks to primary dealers, which included some of the big investment banks.

YPFS: This was before Bear Stearns’ collapse?

English: It was. They voted to approve the TSLF prior to Bear Stearns, but the first actual TSLF auction came after Bear. It didn’t move quite quickly enough in a sense. Bear was up against it by Friday, March 14, 2008, and they felt they didn’t have access to sufficient liquidity to operate that day without help. They got a loan from JPMorgan Chase, which was given a backup loan by the Fed, in an effort to share some of the associated risk. That got them to the weekend, but basically Bear Stearns was sunk. Their creditors and counterparties were pulling away.

YPFS: Was that unprecedented at that point for the Fed to take on that role?

English: Yes. The Term Securities Lending Facility was approved under section 13(3) which was the Fed’s emergency lending authority to non-banks. That was the first time in the crisis that 13(3) authority was invoked and extended. It had been invoked a few times back in the 1960s and 70s but had not been used. The last time 13(3) authority had been used was in The Great Depression. While the TSLF was the first use of 13(3) authority, they voted again to invoke it to allow the “back-to-back” loan, as we called it, to Bear through JPMorgan. That got Bear to the weekend, but they couldn’t have opened on Monday. They arranged the merger with JPMorgan Chase over the weekend, which meant that Bear’s creditors and counterparties could step back in again and do business with Bear because it was now going to survive. JPMorgan was seen then, and throughout the crisis, as a strong pair of hands.

In March we had the TSLF, Bear, and, immediately after Bear, the Primary Dealer Credit Facility [PDCF], which was another lending facility for the primary dealers. The PDCF allowed them to obtain collateralized funding on short notice. It was essentially like the discount window is for banks: a method of obtaining liquidity if you need it to make payments and avoid default on a given day. By the end of March, we were providing credit to primary dealers in similar ways to how we provided credit to the banks.

There was another smaller facility that began in March as well, called Single-Tranche Repo Operations. These were operations in which we would lend to the primary dealers through open market operations against fairly high quality collateral, such as Treasury securities, or US government agency securities. These Repo Operations totaled about eighty billion dollars of credit a month by early April. With the TSLF and PDCF in place, the Single-Tranche Repo program wasn’t really necessary, and it wasn’t expanded any further.
YPFS: We’ve talked about these events in kind of a clinical way, but was there an emotional aspect to this? Can you describe the behind the scenes mood?

English: People were certainly concerned. On the other hand, they thought we had tools that were effective since the economy still seemed to be doing okay. The recession had begun by the end of 2007, but the worst was yet to come. The support provided to Bear may have worried some, but that seemed like a reasonable step given the situation we were in. I don’t think there was any sense that people were really panicked, but they certainly were concerned about what would this mean for the outlook and whether the financial markets were capable of sorting themselves? So, there was a level of concern, for sure.

YPFS: What was happening in the summer leading up to Lehman’s bankruptcy?

English: There was a sort of cycle of conditions deteriorating, then a response, followed by an improvement, and then further deterioration. There were now mounting concerns that this cycle would consume Fannie Mae and Freddie Mac. At some stage that summer the Board passed an authorization to lend to them, but it was never utilized. Treasury then took center stage on Fannie Mae and Freddie Mac and was given authority to provide support to them.

Fannie and Freddie were taken into conservatorship just a week or two before Lehman Bros. failed. Treasury provided a huge amount of financial support to Fannie Mae and Freddie Mac to prevent them from collapsing, thus keeping a housing market that had, by that time, become very dependent on them, afloat. The subprime part of the mortgage market had more or less ceased to exist. Mortgages that were above the cap on the size that Fannie Mae and Freddie Mac could take, also called Jumbo loans, had been securitized but that market was weakening a lot. The only part of the mortgage market that was really working was the conforming mortgage market: the loans that Fannie and Freddie could take, and other government-related loans such as FHA and VA loans. It was important to have Fannie and Freddie continue to function.

YPFS: It’s interesting to me that the Treasury had responsibility for one part of the market, the SEC had oversight for another but no capacity to bail anybody out, and the Fed was involved almost everywhere. Were the institutions coordinating with other at this stage or were there too many players?

English: The players, on the whole, worked pretty well together. But there were a number of key players. There was the Treasury Secretary, Hank Paulson, the Federal Reserve Chairman, Ben Bernanke, the head of the FDIC, Sheila Blair, and to some extent, Tim Geithner, president of the New York Fed. Those were the folks who were particularly active because they were the ones who had resources they could throw at the problem. The SEC, the CFTC (Commodity Futures Trading Commission), the Comptroller of the Currency were other
players who were involved in many of the discussions, but they didn’t have as big a role because they just didn’t have same tools.

YPFS: Describe the events that were going on around Lehman weekend.

English: There were two things that were going on at the same time: There was a great scramble to try to find a strong firm that could take Lehman over, and AIG emerged as a big problem. The week before Lehman weekend, AIG started mentioning their problems to folks at the New York Fed and at the Federal Reserve Board. There was a lot of work being done on both of those firms over Lehman weekend. The problem was you had two large, complicated firms that needed help. In the case of Lehman, it was pretty clear they needed a buyer and capital. As for AIG, at least that weekend, it wasn’t quite clear how, what, or how big their problem was. They thought it was a liquidity problem, but it wasn’t obvious. AIG was a firm that the Fed hadn’t been supervising at all, and we sent a bunch of folks at the New York Fed over to try to learn about the firm. We had two big firms that seemed to be in deep trouble, and it wasn’t quite clear what could be done.

In the end, nothing could be done about Lehman, who filed for bankruptcy Sunday night. There was an FOMC meeting around that time and Tim Geithner didn’t even attend because he was in New York trying to address the issues with AIG.

YPFS: Did concerns about moral hazard or “too big to fail” play a role in the collapse of Lehman?

English: It's true the Fed could have lent money to Lehman on that Monday and Lehman could have met its obligations on that Monday. The problem the Fed faced was that without a buyer to take Lehman and make all of Lehman's creditors and counterparties comfortable dealing with it, the run would continue. Taking good collateral out of the firm to lend to them and allowing both unsecured and secured borrowers to flee, at that point, would have just concentrated whatever losses there were at Lehman on a smaller and smaller set of counterparties. The run wouldn’t have stopped and may have even accelerated it.

It was pretty clear that without a buyer, without some stabilization of the situation through an injection of capital, its customers and counterparties were not going to be interested in working with Lehman anymore. With no buyer, it was a matter of time. Presumably, Lehman would have had to continue to borrow from the Fed, ultimately using up all its collateral, and so they would have simply failed anyway. The horrible decision that Bernanke, Geithner and Paulson had to make was if there was nothing that could be done, should they just stop? Since they realized they couldn’t save the firm, they decided they shouldn’t lend more just to try to keep the firm afloat for a few
days or a week. It's worth remembering that the Fed was lending to Lehman through the Primary Dealer Credit Facility and the Term Securities Lending Facility to their broker-dealer subsidiary. In fact, though Lehman filed for bankruptcy its broker-dealer piece did not file for bankruptcy and continued to borrow from the Fed before being ultimately bought by Barclays. As we now know, Lehman's bankruptcy was the gong that precipitated the worst of the crisis.

YPFS: Had it been at all apparent that by letting Lehman go bankrupt, it would result in this cascade of problems? Was that a known risk at the time?

English: Everybody knew it was going to be a big mess. But did Ben Bernanke know the scope of the shock and the resulting problems in financial markets that would come from the failure of Lehman? You'd have to ask him. But certainly, for me, it was surprising. I knew it was going to be terrible, but I was still surprised. In a sense, it was disappointing that firms hadn't been able to raise more capital and take steps to protect themselves, so that when Lehman went down it was not quite so horrific. But they hadn't, and it was. The Reserve Primary Fund, for example, was a money-market mutual fund that was holding a significant amount of Lehman commercial paper and saw its share price fall below $1 as a result. The fund's choice was a big risk, and it imposed a big cost on the financial sector. People weren't as well prepared as one might have hoped, and the ability of the Fed and others to help was limited. It really did require, at that point, Congress to step in and provide a lot of money to Treasury so it could recapitalize institutions and strengthen the financial sector more directly. The Fed's ability to help with liquidity provisioning had reached its end. These policies still helped after that, but the problems were too big for just those.

YPFS: Which leads to quantitative easing. That kicked in at what point?

English: The end of November of 2008. Just to go through the fall timeline, Lehman and the Reserve Primary Fund failed, then there was a run on money market mutual funds and so the Fed helped with that by creating the Asset-Backed Commercial Paper Money Market Mutual Fund Liquidity Facility, or AMLF. Through the Commercial Paper Funding Facility the Fed loaned directly to financial and non-financial issuers of commercial paper because that market had stopped functioning. These were some of the most prominent new liquidity programs at the time.

Another big coordinated action that was very important in October was the Temporary Liquidity Guarantee Program which was an FDIC-program to provide liquidity to banks and bank-holding companies by providing a guarantee for new senior debt issuance, as well as effectively unlimited deposit insurance. Those steps were very helpful in stabilizing the banking system.
YPFS: And AIG?

English: The Fed also chose to lend to AIG and keep it afloat. Congress provided the TARP (Troubled Assets Relief Program) money and the Treasury, after thinking a bit about how to use the money, ultimately used it to inject capital into the banking system and some financial firms such as AIG. Despite the support that provided, late in the fall, the economy was falling very sharply, causing the Fed to cut the federal funds rate to 1%. At the end of November, with a lot of pressure on Fannie Mae, Freddie Mac, and all the government mortgage-related agencies, the Fed announced that it would begin purchasing mortgage-backed securities in large volume. That helped a lot with providing support for that market after experiencing a multitude of liquidity and pricing-related concerns. Having the Fed step in and say, "We're going to buy a lot of MBS," was pretty reassuring.

YPFS: Were you involved in that plan?

English: I wasn't involved at all with that first announcement. That was determined at a very high level by the Federal Reserve Board and the FOMC. I remember seeing the announcement when it came out and being surprised. We were, at that point, working on a huge number of memos which went to the Committee for the December 2008 FOMC meeting, which was when the Committee decided to cut the federal funds rate essentially to zero. They then announced an even larger-scale asset purchase program.

At the same time as that was going on, in early December and into January, Citigroup got into very big trouble as its creditors and counterparties pulled away from it. This time, Treasury had the TARP money, and a rescue package was put together. I was involved with creating a support package for Citigroup which involved a further injection of capital from the Treasury and the creation of a so-called "ring fence" on some of their mortgage-related assets that would limit their losses. Citi put in some amount of capital to cover the first loss, then the Treasury was going to cover a second loss, and the FDIC a third loss and the Fed would provide loans against the remaining assets if they were still troubled. It provided a lot of protection for Citi and was done late in 2008 and early '09.

Early in 2009, Bank of America had a similar problem. They had bought Merrill Lynch and their problems proved larger than people had realized and that cast doubt on Bank of America. We worked on a similar arrangement for Bank of America in mid to late January 2009.

The economy was falling very, very rapidly. In March 2009, the FOMC escalated their policy response with a big increase in the size of the asset
purchase program. They also used forward guidance to suggest that they were going to keep the federal funds rate essentially at zero for quite a while.

YPFS: **How important was that at the time?**

English: That was a big step. Events were happening simultaneously. There were these big monetary policy steps in December and March that required a lot of thought and discussion, as well as the support packages for Citi and BofA. Then, starting in either January or February of 2009, the stress tests - the Supervisory Capital Assessment Program – began. The SCAP supervisors would analyze whether the large banks had sufficient capital so they would be able to survive and function and serve their customers in the event of a worsening economic downturn.

That work was very complicated, as you can imagine. Figuring out how to model these events and to think about what losses would look like in bigger recessions and so on. That was ultimately what ended the immediate risk that the financial sector would collapse.

In May 2009, the results of the Supervisory Capital Assessment Program came out. Each of the institutions was told either that they were fine or that they needed to raise additional capital. If they were unable to raise the additional capital, the Treasury would inject capital into them but with enough strings attached that they wouldn’t want to keep the capital for a prolonged period of time. Then, there was concern about the total amount of capital that these institutions would need. If it were a really big amount, would the Treasury have enough? Would there be enough TARP money left over to provide that capital? To the end, the numbers that came out were not too large and the stress tests were seen by investors as credible. The institutions went out and raised the capital themselves and didn’t actually need to turn to the Treasury for capital.

Investor concerns about the solvency of the main financial firms seemed to wane as a result of that zero-based assessment of how sound the institutions were and a judgment that the new capital requirements were sufficient.

YPFS: **Was the goal of quantitative easing to keep the markets functioning?**

English: There were really two goals at the beginning and, over time, one. The two goals were first, to improve market functioning, particularly in the MBS market, which was freezing in the late fall of 2008. But the other reason, which was probably even bigger in some sense, was to push down longer-term interest rates by boosting demand for longer-term securities, Treasuries, and agency mortgage-backed securities in order to push up their prices and push down their yields. The fundamental impetus was to try to lower long-term interest rates. By improving market functioning in the MBS market, we were able to push down interest rates on them by a lot. That first announcement in late
November that the Fed would be buying a lot of agency MBS had an immediate and substantial effect on yields on agency mortgage-backed securities. The market functioning effect was big for the later purchases, and they went on for a very long time.

YPFS: How long?

English: We were buying almost through 2014. After maybe the first six months or so, the idea was to take longer-term assets out of the market to push down longer-term interest rates and that would provide support for the economy. It was just another way of lowering interest rates. Ordinarily, the Fed lowers very short-term rates. The Federal Funds rate, the overnight rate at which banks lend to each other, was at zero. So, the Fed was trying to push down interest rates and did that by buying a lot of assets at longer maturities.

YPFS: What were some of the risks associated with conducting QE?

English: There was a lot of discussion about that. There was concern among politicians and in the financial press that this was going to risk undermining the dollar and cause fast inflation. Those risks never seemed likely to us. Those things would only happen if these tools proved to be immensely powerful, and we didn't think they were going to be. If they had proven to be so, the FOMC could have stopped or done a lot less.

YPFS: Were there other risks?

English: The two I remember worrying about and doing a lot of work on were: would policy be able to be normalize when the time came, and would using forward guidance to suggest the Fed would be keeping interest rates low for a very long time encourage investors disappointed by the low interest rates to take on excessive risk that they didn't know how to manage or understand in order to get higher returns? This is referred to as "reaching for yield." When investors reach for yield and take on a lot of risk, as rates begin to normalize there could be a big financial stability problem.

As for rate normalization, in the spring of 2009, before the FOMC was even done with the first purchase program, we were already thinking about how we would raise rates. We were deciding about, when the time came, if we would want to sell the assets and then raise rates or raise rates and sell the assets over time. The conclusion we reached fairly early on was to have plenty of tools that would allow us to raise rates when the time came. The FOMC was inclined to tighten policy when the time came by raising rates and not by trying to sell the securities because they had more experience with that type of policy and weren't quite sure how to calibrate such sales. That basic approach is the approach that, in fact, was taken in 2015 and it's worked fine.

A key factor in this was the Fed receiving authority in the fall of 2008 to pay interest on reserve balances at the Fed. When the Fed made the asset
purchases, it paid for the asset purchases by increasing the reserves of banks that were selling securities to the Fed. Prior to the crisis, they were about $15 billion and, after the last of the purchases, it was close to $2.3 trillion. It increased by a truly staggering amount. The point was that when it came time to raise rates, we didn’t have to get reserves back down to $15 billion, we could just pay a higher interest rate on the reserves that the banks were holding and that would put a rough floor under rates that banks would be willing to lend at. If they could leave money at the Fed and earn a certain rate, they wouldn't be very interested in lending to the public at a rate below that. We developed other tools and we worried about backstops, but in the end, all worked basically as we had expected.

YPFS: And what about the risk to financial stability?

English: The issue of financial stability was particularly acute at the start of the open-ended purchases that began in the fall of 2012. There was a lot of concern. If you go back and look at the transcripts of FOMC meetings, there were a lot of FOMC participants who were worried. There had been another big round of purchases, even lower longer-term interest rates, and new forward guidance which may have pushed back expectations regarding the timing of lift off. People were quite worried about reaching for yield and too much risk taking. At the time, what they put in the FOMC statement was that they would adjust the purchase program in light of their assessments of the costs and benefits of the program. One of the costs was certainly the financial stability risks and, to illustrate these, the staff produced a couple of briefings on indications that the purchase program was causing reaching for yield behaviors and undesirable risk taking.

On some level, we wanted additional risk taking. Risk spreads had widened out a lot during the crisis and investors had become quite risk averse. Some additional willingness to take on risk was part of the idea behind the monetary policy. But we were worried there would be excess risk taking, so we spent a lot of time looking at insurance companies, pension funds, and banks to see if there were indications that they might be taking on excessive risk. We didn’t see it at that time, but we continued to worry about that. The Federal Reserve Board had by then created a small financial stability office, as it was called then. As it grew, it eventually became the financial stability division and it's still there. One of its initial responsibilities was to worry about this issue.

YPFS: Those were the known risks. Were there any unseen risks that resulted from this?

English: I don’t think so, but the FOMC was aware that there could be. They were in uncharted waters and didn’t know exactly how things would play out. They were always careful of their communications to ensure that they would have room to change tack if some risk emerged that hadn't been contemplated. Fortunately, that didn’t happen.
YPFS: With interest rates at zero and with all these unconventional tools being used, was there any sense that the toolbox would run out and there would be no means to combat the situation if conditions continued to deteriorate?

English: They worried about that. We did work from time to time on other policies so that options were there. One thing that we did not do at the Fed that other central banks subsequently did was take rates negative. The Fed set a target range for the federal funds rate between zero and 25 basis points. At its lowest, the rate was bouncing around in the high single digits, but we never did go negative. You can't go too far below zero before you get a big increase in the demand for currency. But currency is a hassle to deal with. People like having a bank account or an account at the Fed and being able to make payments electronically. There is a real value to having an account that can be used rather than a pile of currency sitting in a vault somewhere. We could've gone negative, but we weren't quite sure how negative, and we weren't quite sure if there wouldn't be unanticipated, potentially damaging consequences. There was concern that there would be pieces of the financial infrastructure that wouldn't function well with negative interest rates and there'd be some problem.

Ultimately, the Swiss National Bank took its policy rate to minus 75 basis points—further than I would have thought. There is a limit to how negative you can go but I think if there were another recession in the future and the FOMC got back to zero bound, I think they'd think pretty hard about negative interest rates now that others have done it and shown that it can be done.

The Japanese have shown you can do very large asset purchases. The Swiss and others have shown that you can take rates negative and you can convince people that they're going to stay negative for a while. The Bank of Japan induced monetary policy to push the 10-year government bond yield in Japan negative. The Bank of Japan, Bank of England, and the ECB also used targeted lending programs. At the Bank of England, it was called, "The Funding for Lending Scheme." The idea was that if banks did more lending to households and businesses in the UK, the Bank of England would finance some of those loans at a very low interest rate. They would, by offering cheap financing for additional lending, induce banks to reduce the rates at which they were extending loans and encourage them to lend more. The Bank of England's analysis suggests that was reasonably effective in getting additional bank lending in the UK.

This was another program we talked about but never felt the situation was such that it was appropriate to do it. In a future situation, you could. There are other tools that could be used and the tools that were used could be used with greater vigor. There is a lot of discussion now about what the Fed should say about what it would do in the next recession, since it's pretty likely that we would end up back at the zero lower bound.
YPFS: Any other potential approaches?

English: We worked on whether changing the framework for monetary policy, rather than targeting inflation at 2%, would help either avoid getting stuck at zero bound or make policy more effective when you’re at zero bound. Targeting a higher inflation level, price level, or level of nominal GDP were other alternatives. Models suggest this kind of approach could work much better in the event of a downturn. The Fed has announced that they’re going to think about this. We’ll see what they come up with, but that’s another possibility.

YPFS: What do you say to critics who said the Fed was slow to lower rates and use rates as a tool? And to others who complain that rates stayed too low for too long.

English: The criticism that they stayed too low for too long doesn’t seem right to me. The concern there would be if the economy was so stoked up and got too hot, there would be a lot of inflation, you would have to tighten policy, and the economy would ultimately end up back in a recession. That didn’t happen. The economy has recovered pretty gradually, and inflation took a long time to get back to the Fed’s 2% objective. I don’t think there’s any evidence that that policy was too accommodative. That doesn’t say they couldn’t blow it over the next few years, of course. But at least thus far, I think policy has been pretty appropriate.

Now, should they have moved faster? If we’d known then what we know now, yes, absolutely. They should have moved faster to provide liquidity support, should have moved faster to move rates down, should have used forward guidance more aggressively, and should have had a larger, longer purchase program straight away. But the problem was they didn’t know how big the problem was going to be. This was an unprecedented event. They were consistently surprised by how bad things got and how slowly the economy bounced back. They also didn’t quite understand how to use and calibrate the new tools and were worried about some of the risks associated with those tools, such as the possibility that some unexpected risk would emerge. As they got more comfortable with the tools, they used them more aggressively. In retrospect, it would have been better to have been more aggressive with those new tools, say in the period from 2009-2011, rather than doing what was kind of a stop-start pattern with the asset purchasing programs. All of that seems like a lost opportunity now, but I don’t think it was obvious at the time.

YPFS: Is there anything else that could have been done that wouldn’t have resulted in such a gradual recovery?

English: Fiscal policy was a lost opportunity. When the federal funds rate has hit essentially zero and long-term rates are very low, fiscal policy is cheap and effective. A more expansive use of fiscal policy, I think, could have improved the economic outlook faster. Ben Bernanke advocated for policies of near-term
fiscal expansion in conjunction with a plan to help the economy get back to potential, and to deal with increasing deficits in the near-term, but that was too politically difficult. What else could have been done? There was a whole lot of work done at Treasury with mortgage refinancing, renegotiating mortgages, and refinancing underwater borrowers at lower rates after they had fallen. Ultimately, the Treasury figured out how to do that in a way that was helpful, but it took them a couple of years. You’d hope they learned from that experience and could do better another time.

YPFS: **What was this period like for you personally?**

English: I remember a colleague of mine, at the beginning of the crisis, who was visiting the Bank for International Settlements in the academic year 2007-08. He sent me an email saying he was worried there was all this exciting policy work being done and he was going to miss out. Of course, he got back in the summer of 2008 and so he had plenty of time to work on these issues. He seemed to thrive on it. Some people found it exhilarating, and there certainly was a lot of autonomy. Everybody was really busy and had to use their own judgment and move forward on things that, in normal times, would have been agonized over by a big committee of staff and policymakers. There was a certain satisfaction to being able to go out and just do stuff.

For me, the work in 2007 and through the summer of 2008 was very interesting and exciting. But after Lehman, it was deeply, deeply frightening and really exhausting. There was too much going on and it was hard to keep up. I remember a period in early 2009, before the stress testing program was underway and we were worrying over the ring fence deal for Bank of America. There were other firms that were struggling, and I thought we might just not have enough tools to be able to stabilize the situation. The result would have been another Great Depression and that was really scary. It was a frightening and tiring period, where you were frightened enough that you kept on working even though you were really tired. For me, that was not all that appealing.

One of the striking things to me was Ben Bernanke, who seemed always to be cool and calm even when things seemed to be going very badly. He had a kind of quiet confidence and belief that we could think harder, think of new things, and come up with ways forward. He never seemed to me to be frustrated or panicky. We were very lucky that we had people like Bernanke, Geithner, [Don] Kohn, and Paulson in charge.

YPFS: **Many of these chief decision-makers came under a lot of political scrutiny during the crisis, particularly Tim Geithner at the New York Fed. Do you believe that politics played a big role in some of the decision making? Or, even prevented better decisions from being made?**
English: Everybody was angry, and rightfully so, that the people who “threw the economy in the ditch,” in a sense, didn't seem to get penalized. No one went off to jail, they were given high compensation, and that was, politically, a big problem. The Justice Department found it quite difficult to prosecute these people because they were doing things that were “bad”, but not necessarily illegal. My assessment is that Geithner, Kohn, Paulson, and Bernanke were doing things that they were in the interest of the public. They were providing support for Wall Street because that was the way to provide support for Main Street, and it was Main Street that they cared about. So, I think that’s right. We were very fortunate with the people we had in power.

YPFS: Thanks, Bill.