

The Case for a Fiscal Component of Monetary Policy

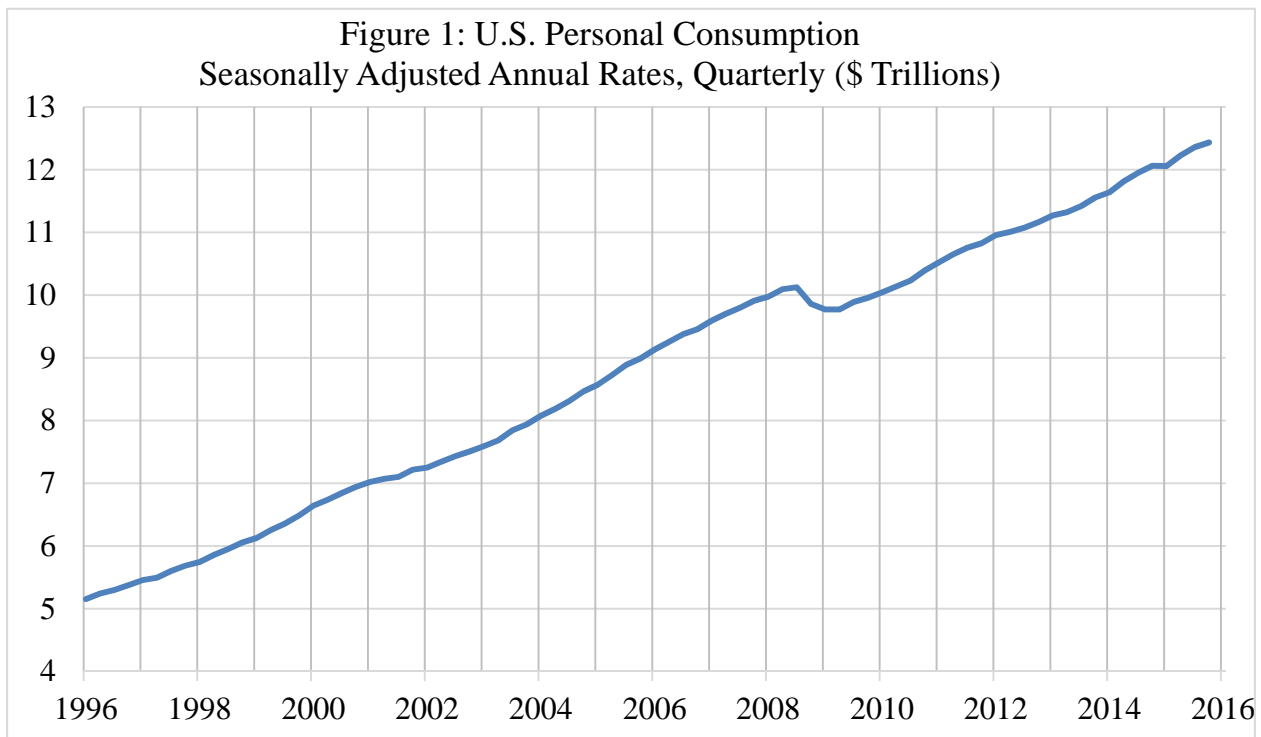
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Abstract

This paper proposes that stabilization of aggregate personal consumption should be sought through free lines of credit and low-interest-rate loans, arranged through the Fed, for most taxpayers who wish to participate. The amount of each line of credit would be a combination of a specified amount for all eligible citizens and a specified fraction of the taxes paid by the citizen over the past five years. The specified amount and specified fraction would be increased or decreased to stabilize the growth of aggregate personal consumption in all income classes.

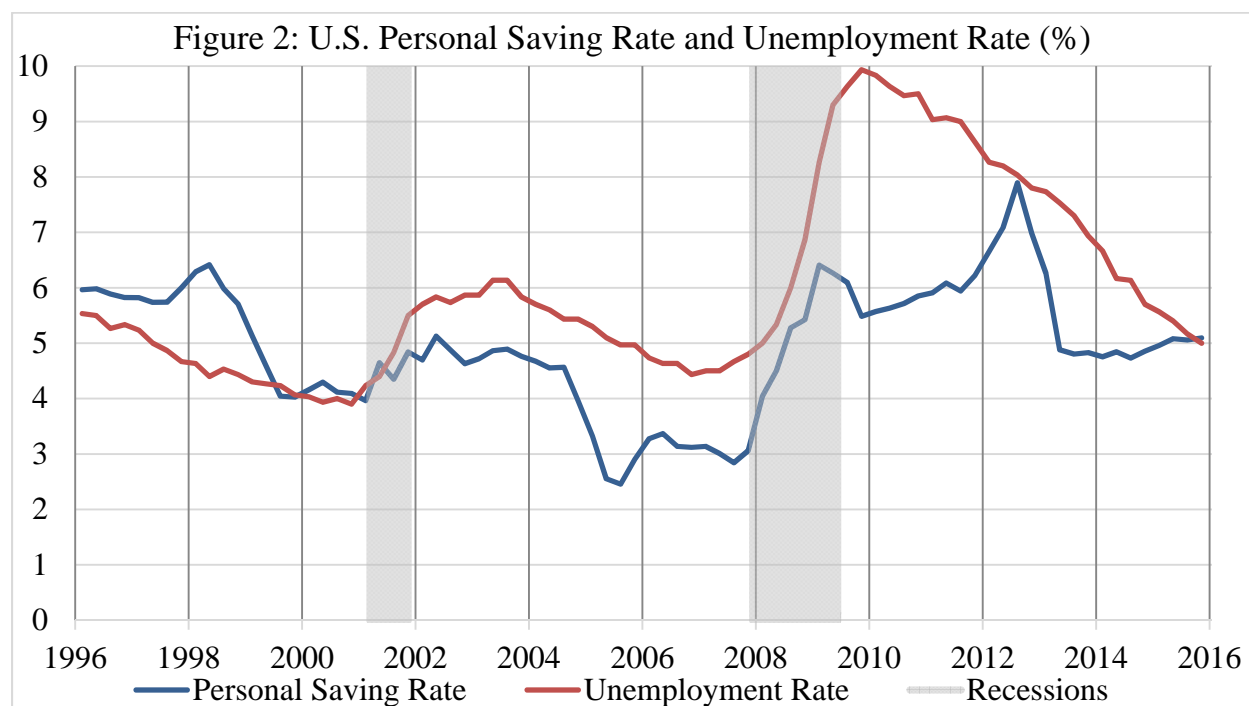
I. Introduction

Figure 1 shows a sharp decline in U.S. personal consumption, in the great recession that began in 2008:



On seeing Figure 1, one might think, “It is natural for consumption to decline when income declines.” But this is not the full explanation. Income did fall in the great recession, and part of

the fall in consumption can be attributed to the fall in income, but the fall in consumption was disproportionately large in relation to the fall in income, as can be seen by the fact, as shown in Figure 2, that the saving rate rose sharply in the Great Recession. This Figure also shows that a rise in the saving rate occurred as well in the recession of 2001.



The personal saving rate is a moving three-quarter average of the ratio of personal saving to disposable personal income from NIPA data.

The unemployment rate is a three-month average of seasonally adjusted BLS data.

There is a natural economic explanation for the rise in the saving rate in a recession. When people perceive that hard economic times are coming, they want to increase their precautionary cash balances. The way they do this is by cutting back on spending. However, this reduces aggregate demand, accentuating the bad economic times that were feared.

There is a kind of ironic tragedy in recessions being deepened by an increase in the demand for cash balances. That is that if people just want to keep more cash in their bank accounts or in their pockets without spending it, there would be no social cost to providing that cash. Money in the modern world is just computer entries and bit of relatively inexpensive paper. If people want more of it to feel safe and don't want to spend it, why not give it to them?

The most cogent reason for not giving people the money they need to feel safe is that once they do feel safe (and it can be expected that at some time they will) they will then want to spend

that money, and that can be expected to cause inflation in a full-employment economy. If money is given to people just to make them feel safe and be willing to continue to spend at a full-employment rate, then that money needs to be taken back from them once they are willing to spend at that rate without the money. How can the money be taken back from them once it has been given?

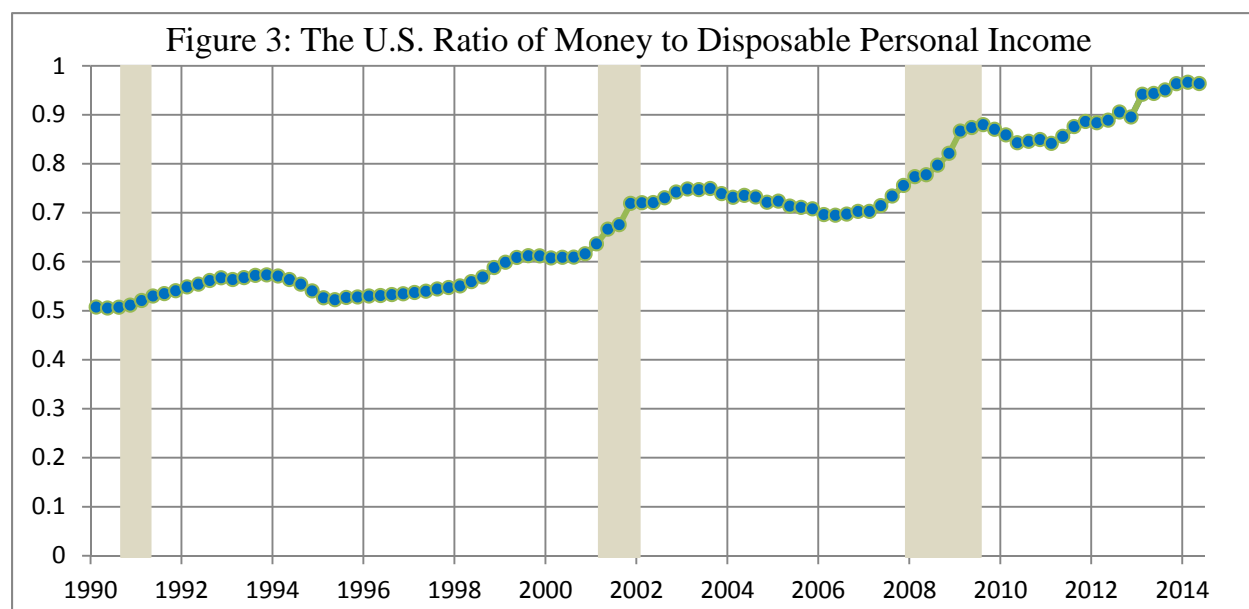
There are three possible ways of dealing with the dilemma of inflation when fear of recession abates:

1. Don't provide the money in the first place;
2. Use an increase in taxes to retrieve the money;
3. Call the money a loan rather than a gift, and require repayment of the loan when it is no longer needed.

This paper argues that the third option, calling the money a loan, is the one that should be followed, and that when it is followed it will be safe to provide the cash that people need to feel safe, so that society can have the benefit of stable aggregate consumption.

II. Background

That there are fluctuations in the ratio of cash balances to income is clear. Figure 3 shows the



ratio of “money with zero maturity” (MZM)¹ in the U.S. to disposable personal income, quarterly, since 1990, with NBER-defined recessions shaded. The fluctuations in this ratio around a rising trend are clear. It is also noticeable in the figure that the ratio rose quite a bit faster than the trend in the last two recessions, both of which were associated with the bursting of speculative bubbles—the dot com bubble in the recession of 2001 and the housing bubble in the recession of 2008-09. It is plausible that the bursting of a speculative bubble would cause an increase in the demand for cash balances, both because asset value serves as a substitute for precautionary cash balances and because a crash in asset prices will rationally cause an increase in uncertainty and therefore an increase in the demand for precautionary cash balances.

Another way of viewing the consumer adjustment to an increase in the demand for cash balances is in terms of the resulting increase in the saving rate. Returning to Figure 2, there you see the personal saving rate and the unemployment rate over the past 20 years. As the real estate bubble formed, permitting people to satisfy their demand for precautionary balances through increases in home equity lines of credit, the personal saving rate fell and the unemployment rate fell as well. Then, as the current recession was arriving in 2008 and 2009, there was a sharp, sustained rise in the saving rate, by about three percentage points, just as the unemployment rate was rising.

Suppose that, instead of seeking to fight the recession by reducing interest rates, the Federal Reserve had sought to fight it with lines of credit and loans to consumers at very low interest rates, to offset their increased demand for cash balances. What aggregate magnitude of loans might have been needed? The three-percentage-point rise in the saving rate represented a decline in consumer spending of about \$300 billion per year. Since average household income was about \$100,000 per year, the increased saving represented reduced consumer spending of about \$3,000 per household per year. From the graph, it looks like consumers wanted to save an additional 3% of income for about four or five years. Thus it seems that loans averaging \$12,000 to \$15,000 per household might have been needed to persuade consumers to maintain spending at a full-employment level as the housing bubble collapsed. But if such loans had been made in 2009, before consumers had experienced the depth and duration of the recession, their

¹ There are many possible measures of money and no agreement among economists as to which measure is best. The St. Louis Fed’s MZM seems most coherent to me. In terms of more standard definitions, it is close to M2, but it excludes time deposits less than \$100,000, which are included in M2, and it includes all money market funds where M2 includes only those of individuals.

expectations might have been more optimistic, making smaller loans sufficient. Thus calibrating the loans needed to stabilize consumer spending is likely to require a high degree of economic skill. But the economists at the Fed probably have that skill. In any case, it is reasonable to expect that the Fed would be able to achieve a greater degree of economic stability if lines of credit and low-interest-rate consumer loans were added to their toolkit.

The primary tool of central banks for combating recessions is reductions in interest rates. The most obvious limitation of this tool is that it can only be applied down to the point where the interest rate that the central bank seeks to control is zero. But even apart from this limitation, there is a difficulty with using interest rate reductions to combat a deficiency in aggregate demand caused by an increase in the demand for cash balances: The path from lower interest rates to more cash in the hands of the general public is quite indirect. If there is an increase in the demand for cash balances that the central bank offsets with purchases of government securities, then the purchase will lower the interest rate on government securities and place additional funds in the hands of the persons and institutions that previously held the government securities. In re-optimizing their portfolios with a reduced supply of government securities, these investors will have a greater demand for investments that finance capital goods. Thus the reduction in consumer demand caused by an increase in the demand for cash balances is offset by an increase in the demand for capital goods. Increased orders for capital goods put increased cash in the hands of those who produce capital goods. Increased spending by the firms and individuals who produce capital goods will begin to put additional cash in the hands of the general public. Meanwhile banks, seeing a lower interest rate, find it in their interest to pass some of that lower interest on to their loan customers, and the demand for bank loans increases, further expanding the money supply. Once a new equilibrium with greater cash balances is reached, the demand for capital goods will have retreated to its pre-stimulus level, and the demand for consumer goods will have returned to its level before the increase in the demand for cash balances. Even if the central bank chooses an increase in the money supply that exactly accommodates the increase in the demand for cash balances, there will be a temporary disturbance in the equilibrium of the economy caused by the combination of the fact that time is required to reach the new equilibrium and the fact that the movement to the new equilibrium requires a temporary increase in spending on capital goods and a temporary decrease in spending on consumption, for consumers to reach their desired levels of cash balances.

In the past few years the Federal Reserve has adopted a new tool for stimulating aggregate demand when the federal funds rate (the interest rate they seek to control) has been pushed to zero, namely purchases of mortgage-backed securities. While this policy tool is capable of increasing the quantity of money in the economy to any desired degree, it is much like purchases of government securities in terms of its indirectness. Purchases of mortgage-backed securities put additional cash in the hands of those who previously held these securities. In re-optimizing their portfolios with a reduced supply of mortgage-backed securities, these investors will finance the purchase of capital goods, and then the chain of causation occurs as with purchases of government securities.

In the case of mortgage-backed securities there is an additional chain of causation by which aggregate demand is stimulated. The purchase of mortgage-backed securities lowers mortgage interest rates, which induces people to refinance their houses at lower interest rates. This reduction in the interest rate that qualifying homeowners pay on their mortgages increases their permanent real incomes and causes them to spend more. However, those whose incomes come from interest payments experience corresponding reductions in their permanent incomes. Still, there is likely to be an increase in spending, because the marginal propensity to consume of those whose incomes rise is likely to be greater on average than the marginal propensity to consume of those whose incomes fall. However, this redistribution between those who live on interest and those who pay mortgage interest does not increase the supply of cash balances. The increase in the supply of cash balances operates entirely through the spending that begins with the purchase of mortgage-backed securities by the Federal Reserve.

Contrast the sequence of steps above with what would happen if the Fed provided interest-free loans to consumers equal to the increases in their demand for cash balances. The loans would go into consumers' bank accounts, and that step would be sufficient to attain the new equilibrium. No further transactions would be needed. Still, additional action by the central bank would be needed to avoid undesired secondary effects. Everything would be fine if consumers took their additional precautionary reserves and put the money under their mattresses. But if, as can reasonably be expected, they put the money in bank accounts, then the banks will have additional reserves. They will want to put these reserves to work. If the federal funds rate is greater than zero, then banks will put their new reserves into that market, reducing that rate. The resulting reduction in the federal funds rate will induce banks to extend additional loans.

This will be fine if there is unused capacity in the economy, but if the economy is initially at full employment, then the new lending will result in inflationary pressure. To avoid promoting additional lending, the central bank can either increase the reserve rate, turning the banks' new reserves into required reserves, or it can undertake open market operations, selling government bonds and thereby depriving banks of as much in reserves as they gained by the loans to consumers.

Line of credit would substitute for a loans in some ways but not others. If people just want the security of knowing that they will have access to cash in the event of economic difficulties, then a line of credit works as well as a loan, as long as those economic difficulties do not arise. If the difficulties do arise, the line of credit must be turned into an actual loan. Lines of credit would be simpler than loans in terms of their macroeconomic effects, provided that a line of credit represented money that the fed would supply if called upon to do so. A line of credit would then not affect the level of bank reserves and the capacity of banks to make loans. Turning the line of credit from a potential loan into an actual loan would mean that the Fed would supply funds to the borrower, which would increase the monetary base and require offsetting Fed action if the Fed did not want the economy to experience the consequences of that increase in the monetary base.

Fiscal policy—a change in government spending and/or taxes—has a more direct impact on the public's cash balances than traditional monetary policy. Additional government spending not financed by taxes puts additional cash directly into the hands of those who provide the goods and services that the government buys. From there it spreads throughout the economy. A tax cut tends to spread the additional cash even more widely and, if it is implemented by sending out checks, also quickly. The difficulty with using spending increases and tax cuts to offset increases in the demand for cash balances is that the political process cannot reasonably be counted on to deliver the changes in the government deficit that are needed to stabilize aggregate demand in a timely fashion. The Congressional spending process and tax reduction process work very slowly. And politicians will inevitably be reluctant to pass tax increases that may be required to fight inflation. Thus it is worth considering how an additional instrument of monetary policy might be used to provide what ideal fiscal policy would provide.

III. Proposal

Based on the ideas discussed above, I propose an additional, “fiscal” component of monetary policy. What I mean by a fiscal component of monetary policy is a policy instrument that has macroeconomic consequences similar to the consequences of lowering and raising taxes and spending, like fiscal policy, but is conducted by the monetary authority. The policy would be conducted by offering free lines of credit and low-interest-rate loans to most taxpayers. This represents an effort to create a macroeconomic policy that would have the best features of both monetary policy and fiscal policy, and not have the drawbacks of either. The virtues of monetary policy are 1) it is implemented by a body that is reasonably independent of political influence and can therefore implement a policy that reflects the best economic judgment and 2) it is easy to make changes in monetary policy quite quickly. The drawback of monetary policy is that the tools that it uses to stimulate the economy, namely purchases of government bonds and (recently) mortgage-backed securities, are better suited to stimulating investment spending than consumer spending, since they operate on interest rates. Expanding the quantity of mortgage-backed securities also entails the considerable expense of the mortgage production process. The virtue of fiscal policy is that its effects are rapid and reasonably predictable. Increases in government spending increase economic activity directly in the sectors where the spending occurs. Tax cuts generate increases in consumer spending. The drawbacks are that the political process takes a very long time to make decisions, that politicians are very reluctant to raise taxes or cut spending when macroeconomic stability requires it, and that increases in government spending are likely to fund projects that could not pass a cost-benefit test.

The proposed new fiscal component of monetary policy would be a combination of free lines of credit permitting loans when requested at interest rates that would be only what was needed to cover losses, with eligibility for most citizens. To be eligible to participate, a person would need to meet the following four qualifications:

- 1) Have an account with a financial institution that has an account at the Fed
- 2) Not be delinquent on his or her federal taxes
- 3) Be legally competent to promise to repay a loan
- 4) Not be in a prison or other liberty-restricting institution

I would be inclined to make corporations as well as citizens eligible for these loans, as long as there is a corporation income tax, but this feature could be decided either way. The argument for

including corporations is that corporations as well as consumers have demands for precautionary reserves, and accommodating fluctuations in these demands for precautionary reserves by line of credit and loans from the Fed would promote economic stability.

I propose that amount of the line of credit for which a person would be eligible should be a linear function of the person's average tax bill. The intercept would represent a line of credit to which people would be entitled even if they paid no taxes. Eligibility for a greater line of credit would be based on paying taxes.

It will be convenient to have different names for the two components of the lines of credit/loans. The part for which citizens are eligible without paying any taxes will be referred to as a "citizen's loan." The part that is a fraction of taxes will be referred to as a "tax deferral loan." The magnitude of the tax deferral loan for which a person would be eligible would be a specified fraction of taxes paid over the past five years. The magnitude of the citizen's loan for which a person would be eligible would be the same for all citizen who met the criteria for participation. Whether or not corporations were eligible for tax-deferral loans, they would *not* be eligible for citizen's loans. The Open Market Committee of the Fed (or a similar committee with appropriate expertise) would raise and lower the magnitude of the citizen's loan and the ratio of permitted tax-deferral loan to taxes paid in the past five years, to stabilize aggregate demand.

While any rule could be used to determine the relationship between the magnitude of the loaned citizens' dividend and the fraction of taxes that was lent, one interesting possibility would be to make the combination equal to a specified fraction of linear econometric estimate of the demand for cash balances as a function of taxes paid. Thus if the demand for cash balances was estimated to be \$8,000 plus 40% of federal income taxes paid over 5 years, then a policy of providing a loan of 25% of the estimated demand for cash balances would be implemented by providing a citizen's loan of \$2,000 and the tax-deferral loan of 10% of taxes paid over the past five years. A couple too poor to owe income taxes would receive a citizen's loan of \$4,000. An upper middle-class couple that paid \$20,000 per year in federal income taxes would receive the citizen's loan of \$4,000 plus a tax-deferral loan of \$10,000. Another way of describing the tax-deferral loan is that it would permit a five-year deferral of some specified portion of federal income taxes (10% of taxes in the example). The citizen's loan would provide a lifetime loan of the specified magnitude, which would vary as policy changed.

The administrative structure of the policy would be that every taxpayer who wished to participate would specify a primary financial institution with an account at Fed, where he or she had an account. He or she would allow that institution to receive information from the tax authorities about filed tax returns, from which the institution would calculate the amount of the interest-free loan for which the taxpayer was eligible. The financial institution would inform the individual of the available line of credit and put money from any requested use of the line of credit in the individual's account. The financial institution would then include the loan in a package of loans sold to the Fed. Each year as taxes were computed, the amount of the permitted loan would rise or fall. In the event of a fall to an amount less than the outstanding loan, a schedule of monthly repayments would be implemented to bring down the amount of the loan over the course of a year. In the event of a rise, the amount of the interest-free loan would rise month by month over the course of a year. Thus a shuffling of the recipients of incomes would be neither stimulative nor contractionary.

A young person entering the workforce and meeting the requirements of participation would have an immediate loan of the citizen's loan, and then five years of increasing tax-deferral loans as tax return began to be filed. A person at the end of life, reducing his or her participation in the economy, would be required to gradually repay his or her tax-deferral loans. Outstanding loans would be fully due at death and would have the same priority in settling estates that unpaid taxes currently have. As a condition of participation, a person whose taxes fell and was therefore required to repay loans would be subjected to automatic monthly transfers from any bank accounts or other asset accounts, or if there were no asset accounts, from any recurring sources of income. Unpaid balances would incur interest charges at the average government borrowing rate plus an experience-based default rate. There would be some defaults, especially of citizen's loans, since so many people die without any assets, but these would likely be small enough that they would be tolerable.

If a time comes when it is necessary to reduce aggregate demand and the central bank has previously extended loans to taxpayers, then it would be possible for the central bank to reduce aggregate demand by announcing future reductions in citizen's loans and in the coefficient for the tax-deferral loans. To ensure that this would not be too disruptive to taxpayers' financial plans, it would be sensible to have a warning period of several months before increased loan payments were required. To ensure that there will be a possibility of cooling down the economy

by requiring loan payments from taxpayers, it would be sensible for the central bank to begin implementing the policy of extending tax-deferral loans, even in a time of full employment, and offset the policy, if necessary, by allowing interest rates to rise.

While it would be reasonable to implement repayments of loans only with notice of several months, this would not prevent such a policy from having immediate impacts, since people can be expected to reduce their spending immediately when they are informed of future required payments. For increases in the amounts of loans, on the other hand, immediate implementation is appropriate, since the purpose of the loans is to accommodate an immediate desire for increased precautionary balances. If people want more precautionary balances now, they might cut back on their spending if they were told that they will need to wait several months before the precautionary balances they want will be available.

A policy would be needed for dealing with situations in which a person with outstanding loans became ineligible by virtue of no longer meeting one or more of the requirements of eligibility. For example, a person might be convicted of a crime and sent to prison. I would suggest the following rule. If a person's ineligibility was expected to last a month or less (for example, he or she was sent to jail for a month for drunk driving), then the ineligibility would be ignored. If the person's ineligibility was expected to be indefinite (for example, he or she was declared mentally incompetent or was sentenced to prison for life or for a period of years exceeding his or her life expectancy), then the loan would be immediately payable, and the taxpayer's affairs would be wound up in bankruptcy court if the loan could not be repaid. If a person became ineligible for a period of time that was expected to have an intermediate length, then additional loans and required repayments would be suspended until eligibility was restored. If a person became ineligible by virtue of becoming tax delinquent, then the person would become ineligible for any further loans until the tax delinquency was paid.

IV. Some preliminary statistics

Implementation of the policy would require research into the demand for cash balances as a function of taxes paid. What follows is a preliminary inquiry into what such research might show.

When information from table “1 01-13,” “6 13,” and “6 13 means” of the Federal Reserve’s *Survey of Consumer Finances*² are combined, as in Table 1 below, it is possible to establish a

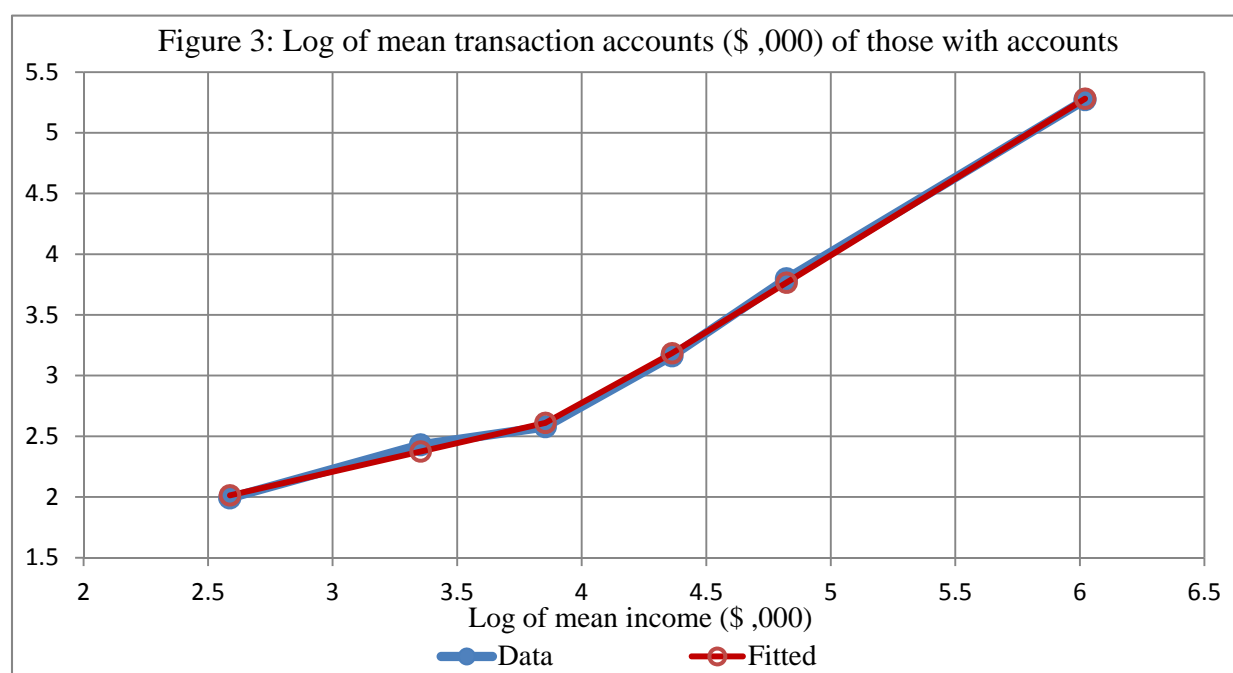
Table 1: Income and Transaction Accounts by Percentile of Income

<i>Percentile of income</i>	Mean Income (\$,000)	Percent with Transaction Accounts	Mean Transaction Accounts (\$,000)	Mean Transaction Acc. of those with accounts (\$,000)
Less than 20	13.3	79.1	5.8	7.3
20–39.9	28.6	90.7	10.3	11.4
40–59.9	47.2	97.2	12.8	13.2
60–79.9	78.5	99.1	23.4	23.6
80–89.9	124.3	99.8	44.5	44.6
90–100	412.0	100.0	194.8	194.8

Source: FRB 2013 *Survey of Consumer Finances*, tables “1 01-13,” “6 13,” and “6 13 means.”

relationship between income and bank account balances.³

The relationship between income and average transaction accounts for those with accounts is displayed graphically in Figure 3, in logarithmic terms. When this relationship in logarithms is fitted to a hyperbola, the hyperbola that emerges is the degenerate hyperbola,



² Available at <http://www.federalreserve.gov/econresdata/scf/scfindex.htm>.

³ The discussion switches here from money with zero maturity to transaction accounts because of data limitations. A variety of measures of the money stock are available on a weekly basis, but the only available figures for the demand for cash balances by income category are the from the Federal Reserve’s *Survey of Consumer Finances*, which tabulates mean transaction accounts by income category once every three years.

$$[\ln (TA) - 0.794 - 0.471 \ln (Y)] [\ln (TA) + 2.331 - 1.264 \ln (Y)] = 0 \quad (1)$$

where TA is mean transactions accounts in thousands of dollars, of those in the percentile range who have transactions accounts, and Y is mean income in thousands of dollars of those in the percentile range.

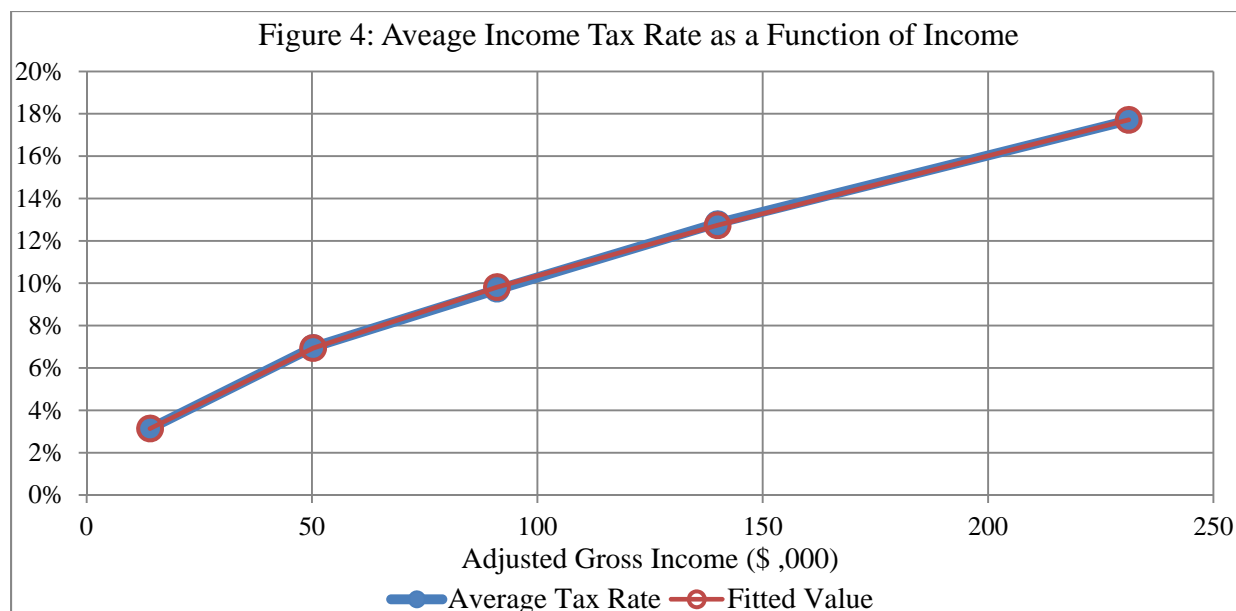
A relationship between income and the average income tax rate can be established from the IRS's Statistics of Income, which have been organized by the Tax Foundation at their Web page <http://taxfoundation.org/article/summary-latest-federal-income-tax-data>. The data are shown in Table 2 and graphed in Figure 4. The data are approximated by the hyperbola

$$[0.3365 + 0.01182 Y - ATR][0.06781 + 0.00050 Y - ATR] = 0.02062, \quad (2)$$

where Y is average adjusted gross income in thousands of dollars in the percentile range and ATR is the average tax rate in the percentile range. Taxpayers in the top 1% are ignored here, because they do not fit the same equation.

Table 2: Average Income Tax Rate as a Function of Income

	Number of Returns	Adj. Gross Income (\$ mil.)	Income Taxes Paid (\$ mil.)	Average AGI (\$,000)	Average Tax Rate	Fitted Value
Top 1%	1,365,857	1,555,701	365,518	1,139.0	23.50%	
1-5%	5,463,429	1,263,178	223,449	231.2	17.69%	17.71%
5-10%	6,829,285	956,099	122,696	140.0	12.83%	12.74%
10-25%	20,487,857	1,865,607	180,953	91.1	9.70%	9.81%
25-50%	34,146,428	1,716,042	119,844	50.3	6.98%	6.94%
Bottom 50%	68,292,856	960,561	30,109	14.1	3.13%	3.14%



From the combination of the relationship between income and transaction accounts in (1) and the relationship between income and tax rates in (2) it is possible to establish a relationship between taxes and transaction accounts, as shown in Table 3. Figure 5 shows both the relationship derived from previous relationship and the best linear fit,

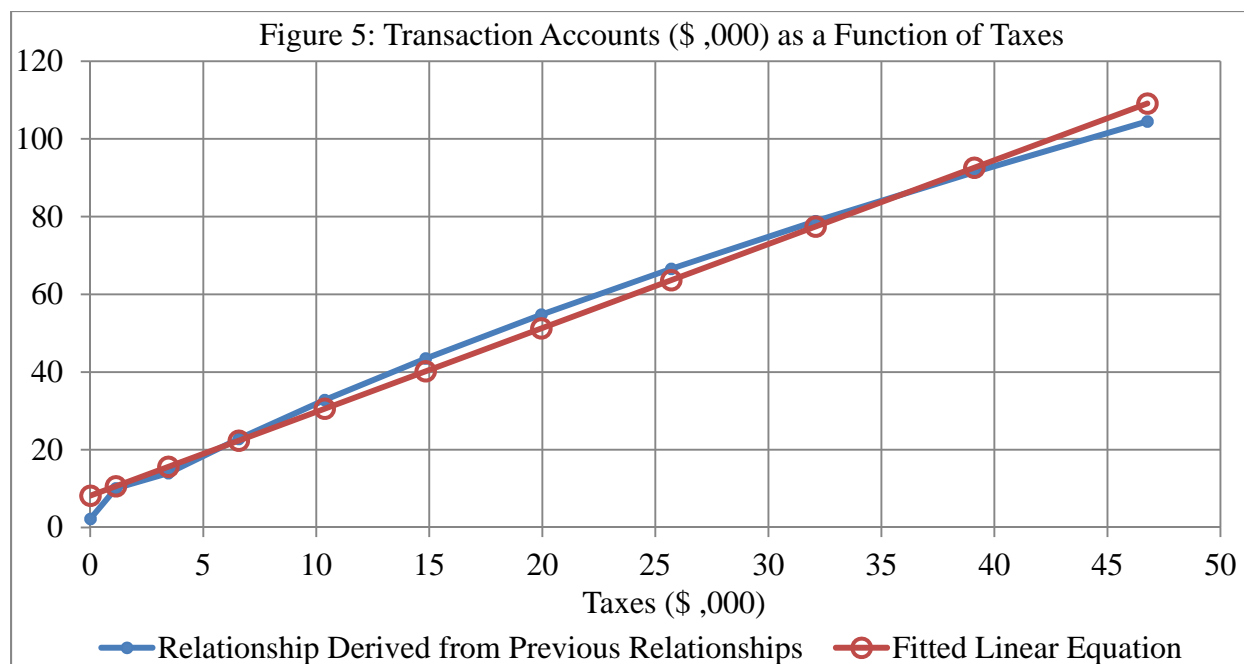
$$TA = 8.164 + 2.159 T, \quad (3)$$

where TA is transactions accounts and T is income taxes paid, both in thousands of dollars.

While this analysis is rather crude, it is reasonable to surmise that in a more detailed and systematic inquiry one would find a roughly similar relationship between taxes and transaction accounts. It would also be reasonable to expect that if one had full data on cash balances

Table 3: The Relationship between Taxes and Transaction Accounts

Income (\$,000)	Taxes (\$,000)	Transaction Accounts (\$,000)	Fitted Trans. Accounts (\$,000)
1	0.01	2.21	8.18
25	1.14	10.09	10.62
50	3.46	13.99	15.63
75	6.57	22.81	22.35
100	10.37	32.81	30.56
125	14.84	43.50	40.20
150	19.95	54.78	51.23
175	25.70	66.57	63.65
200	32.09	78.81	77.44
225	39.11	91.47	92.59
250	46.76	104.50	109.11



including currency and coins, then the observed relationship would not fall so far below the linear trend for those who pay the least taxes, since it is likely that currency and coins are relatively larger components of cash balances for people who pay less in taxes.

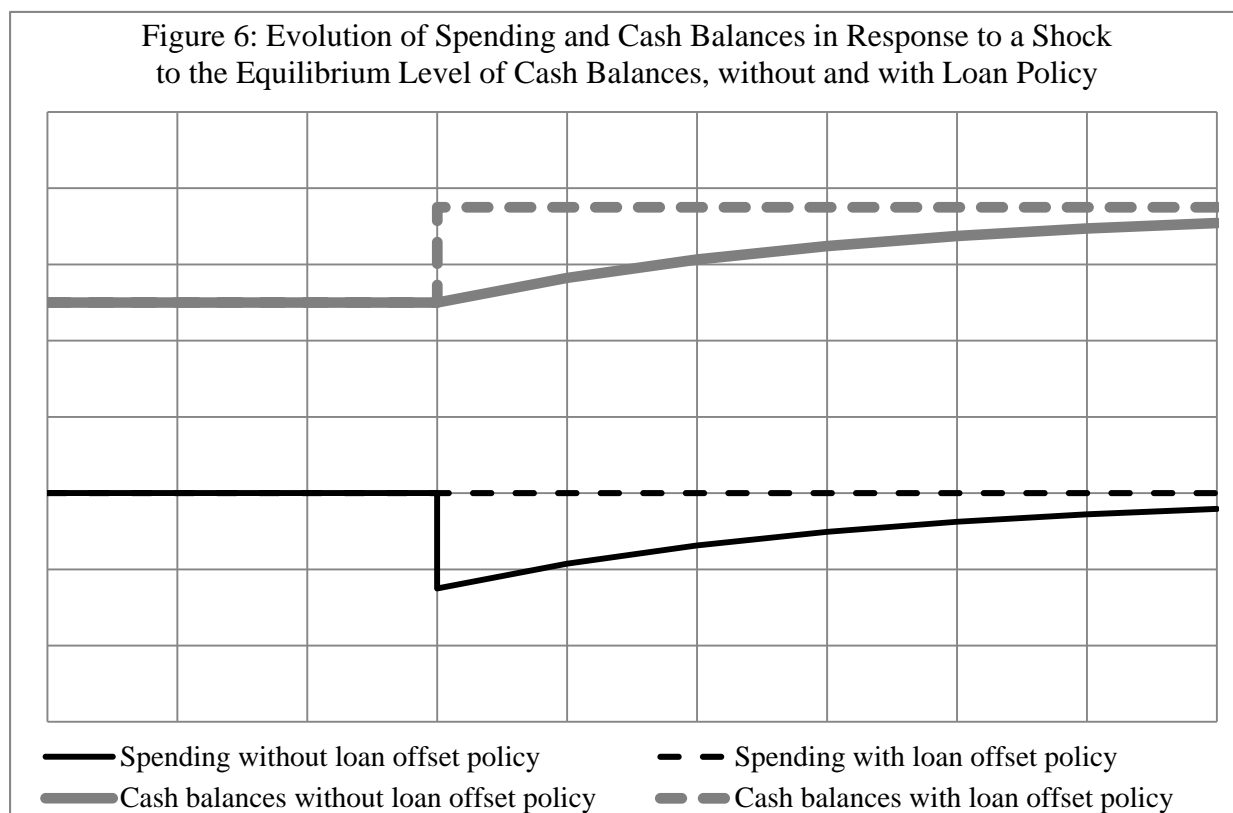
To undertake a more complete analysis, one would begin with the micro data from the Federal Reserve's *Survey of Consumer Finances* and add data on taxes paid. An analysis based on such data would provide reasonably reliable estimates of the relationship between income taxes paid and the deposit component of the demand for cash balances. The currency and coin components are much more difficult to estimate. I am not aware of any data on the distribution of currency holdings by income class.

IV. Rationale

The rationale for the proposed policy instrument is a belief that fluctuations in employment are caused substantially by efforts of taxpayers to optimize their cash balances in circumstances in which their demands for cash balances fluctuate considerably. To achieve increases in cash balances, taxpayers reduce spending. But a reduction in spending represents a reduction in aggregate demand, with a consequent increase in unemployment. If taxpayers could receive loans equal to the increases in their demands for cash balances, it would be possible for them to meet their goals for the safety of additional cash balances with little if any real cost to the

economy and without any reduction in aggregate demand for goods and services, and therefore without any increase in unemployment.

Figure 6 shows the hypothetical path of adjustment of consumers to a shock in the demand for precautionary balances, without and with an offsetting policy of loans to consumers by the central bank.



Without a policy of loans to consumers, a shock to the demand for cash balances causes consumers, in the intertemporal maximization of their utility functions, to implement an immediate drop in spending to begin bringing their cash balances closer to the new target level. As the level of cash balances approaches the new target, getting closer to the target becomes less valuable, and consumers reduce the rate at which they approach it. But there is a sustained deviation of spending from its equilibrium level. The drop in spending below its equilibrium level could be avoided only by an instantaneous drop in prices to adjust to the new desired level of precautionary balances. On the other hand, if the central bank offsets the increase in the desired level of precautionary balances with loans of the right size, then precautionary balances

reach their new desired level immediately, and consumers find that maximizing their intertemporal utility functions entails maintaining their levels of spending.

To implement the policy, the central bank would have announced increases in loan amounts that they judged sufficient to maintain aggregate demand, and all participating taxpayers would have seen corresponding increases in their lines of credit on their bank statements. If the central bank underestimated what was necessary to maintain aggregate demand, it could quickly increase the lines of credit. It is reasonable to expect that if such a policy had been implemented in 2008, any downturn could have been held to something that was brief and mild. High unemployment that persisted six years after the shock could almost certainly have been avoided. There would never have been a difficulty of policy being constrained by the impossibility of reducing interest rates below zero.

Comparing the proposed policy with the central bank policy of buying mortgage-backed securities and with fiscal policy, all three operate by inducing greater spending. The purchase of mortgage-backed securities induces greater spending on capital goods, financed by those who previously held mortgage-backed securities. Fiscal policy either involves greater spending by the government or it induces greater spending by those who pay lower taxes. With loans financed by the central bank, there is more spending by all eligible taxpayers who find that they do not need to add to their savings to satisfy their desire for additional precautionary balances.

The two policies that can maintain spending in the face of an increase in the demand for cash balances are an immediate tax rebates and central bank-financed loans. The other policies operate more slowly. The difficulty with relying on a policy of tax rebates is that it lacks a workable alternative in the reverse direction. Politicians tend to be extremely reluctant to raise taxes just because economists say that macroeconomic stability requires it. On the other hand, having the central bank tell taxpayers that it is time for them to begin making payments on their interest-free loans seems much less problematic.

The policy of purchasing mortgage-backed securities has a number of drawbacks that do not apply to central bank-financed lines of credit. The operation of the policy of purchasing mortgage-backed securities requires that homeowners refinance their homes, a process that is time-consuming and expensive, which delays the impact and reduces the efficiency of the policy. With stimulus from mortgage-backed securities, the set of taxpayers who can benefit from the policy is restricted to the relatively small set of those who are credit-worthy, have enough home

equity to refinance, and are economically knowledgeable enough to understand the value of the opportunity to do so. With central bank-financed lines of credit, on the other hand, a much wider set of taxpayers benefits from the stimulus program.

Another aspect of the equity of the proposed system concerns the distribution of seigniorage. An increase in the demand for cash balances provides an opportunity for the government to print currency and for banking system to extend additional interest-bearing loans that will primarily be deposited in non-interest-bearing accounts. Both printing money and expanding the volume of bank loans provide opportunities for increased “profit” for the economy—interest on bank loans and seigniorage on printing money. When the demand for cash balances increases, either because the economy expands or because citizens feel a need for the greater financial security of a higher level of cash balances, there is justice as well as regulatory convenience in allowing the profit from the greater demand for cash balances to be received by those who have the greater demand, rather than by the Treasury and the banking system. When the demand for cash balances increases, it costs the economy virtually nothing to create the additional cash by printing money and expanding credit, so why not let people have the additional money that they want? If instead the increase in demand for cash balances is to be accommodated by increases in bank loans, it is quite complex to ensure that banks will be motivated to extend exactly the quantity of additional loans that will match the increase in demand for cash balances, and there will be a myriad of redistributive effects before a new equilibrium is reached.

Having an additional policy instrument permits the pursuit of an additional policy goal. If central bank-financed loans are used to stabilize consumer demand, then interest rate policy can be focused on stabilizing the demand for capital goods. Of course, both stabilization efforts would need to stabilize demand at a level that was consistent with maintaining the desired rate of inflation, and it could happen that better outcomes could be achieved through decisions that did not involve assigning policies to individual goals.

V. Variations on the proposed policy

There are many variations on the policy that could be considered. Interest could be charged on the loans at a level sufficient to cover administrative costs as well as defaults. This would discourage some people from participating and therefore mean that larger loans would need to be extended to those who did participate. Interest rates could be varied with factors reflecting the probability of default. Experience would be needed to determine the actual correlates of default,

but it seems likely that interest rates would be higher for people who paid less in taxes and for those who were older. Those who paid little in taxes would probably participate at high levels even if interest were charged, since they generally face such high interest rates in the market. Those who were old might participate noticeably less. This reduced participation by the old might be acceptable if it meant that the default rate would be considerably lower.

It is possible that poorer people would actually benefit from requiring that interest be paid on the tax-deferral loans. To the extent that the requirement that interest be paid discourages rich people from participating, the loans for those who do participate will be greater. For poorer people, who face high borrowing costs, the opportunity to receive a larger low-interest loan could more than compensate for the obligation to pay interest.

Since the top 1% of taxpayers pay about one-third of all income taxes, a policy of allocating interest-free loans in proportion to taxes paid would result in one-third of the interest-free loans going to the top 1%. This is not necessarily a bad thing. If we think that the tax system allocates the costs of public activities appropriately, then a sharing of the benefit of an opportunity to postpone some taxes in proportion to taxes paid is reasonable. On the other hand, it may simply be politically unacceptable to have multi-million dollar loans go to those who pay the most in taxes. In that case, one would put a cap on the magnitude of the loan that a taxpayer could get, and there would be bigger loans for those whose allocations were less than the cap.

Instead of basing the permitted loan or line of credit on income taxes alone, one might want to take account of the variety of credits and additional taxes. I would not recommend that taxes beyond income taxes, payroll taxes and (if corporations are included) the corporation income tax be included in the determination of the size of the loan or line of credit for which a taxpayer would be eligible.

VI. Conclusion

Fluctuations in the saving rate generated by changes in the demand for cash balances are a major source of fluctuations in employment. These fluctuations in employment could be avoided if available cash balances fluctuated to compensate for fluctuations in the demand for cash balances. The most straightforward way to achieve the desired fluctuations in available cash balances would be to have the central bank expand and contract the money supply through lines of credit to taxpayers, increasing and decreasing in phase with the demand for cash balances. Distributing such loans among non-delinquent taxpayers in proportion to the taxes they pay has

the virtue of concentrating the loans on persons who, because they are current on their taxes are relatively unlikely to default.

It seems that such a policy instrument ought to be feasible in principle. The next steps in evaluating the possibility of such a policy instrument would be to embed the idea in a general equilibrium macroeconomic model, to undertake further empirical work on the relationship between taxes paid and the demand for cash balances, to have the idea evaluated by a variety of economists, and to have lawyers comment on its legal feasibility.