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**Financial Crises and the Interest-Rate  
Approach to Monetary Policy**

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Financial Crises and the Interest-rate Approach  
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by

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## I. Introduction

One of the by-products of the recent global financial crisis has been the loss of the monetary policy practice under which a central bank simply selects an interest rate to serve as its policy instrument and announces a level consistent with achieving a specified macroeconomic objective. As a policy measure, the practice of raising or the lowering the policy rate was designed to signal when the central bank wished monetary conditions to become easier or tighter, the direction of change determined by the need to attain an overriding policy objective. In analyzing what has happened to this institutional practice, we take the maintenance of an explicit inflation rate target to be the central bank's overriding policy objective. To describe how such a policy was implemented, we draw on the practice of the four major central bank jurisdictions receiving most prominent coverage: namely, the U.S. Federal Reserve, the Bank of Canada, the Bank of England, and the European Central Bank.<sup>1</sup>

The current global financial crisis has proved unsettling for the use of the interest rate approach precisely because the crisis appears to require an interest rate level below zero to keep inflation from falling below its target. In what follows we explain what has become of the interest rate approach to monetary policy and analyze whether it can and/or should continue to function in such circumstances by posing and then answering three interrelated questions: first, what is needed for the interest-rate approach to become effective under normal circumstances; second, what is needed to maintain that effectiveness when a crisis occurs; and third, what are the implications for monetary policy if the interest-rate approach cannot remain effective during a major financial crisis.

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<sup>1</sup> See the first six references listed at the end of the paper.

How a financial crisis affects policy practice requires an understanding of how the announcement of a value for a policy rate can change financial conditions under normal conditions. The causal process at work is less than clear in most descriptions of the transmission mechanism.<sup>2</sup> That is, most descriptions of monetary policy explain well enough the process by which a change in all interest rates resulting from a change in the policy rate cause the economy to move towards its target. What is less adequately addressed is how or why other interest rates should move in conjunction with such an announcement. It is because a financial crisis interferes with this linkage that our analysis begins with a more explicit analysis of what must happen under normal conditions. The second part of the paper then deals with how the crisis can disrupt the effect of the policy rate change on other interest rates, thus diminishing its effectiveness. Awareness of the conditions necessary for an effective policy rate approach in normal times indicates what needs to be done to enable the interest rate approach to better cope with a financial crisis.<sup>3</sup>

The final part of this paper then deals with consequences for monetary policy in general, and the policy rate approach in particular, when a financial crisis becomes so severe that policy rate operations by the monetary authority are unable to prevent prices from achieving their targeted rate of growth or even keep inflation rates above zero. In these cases, the interest rate approach can be made effective only through the assistance of supplementary policies. Our general conclusion is then that while the interest rate approach to monetary policy remains valid under normal times, it is always vulnerable to

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<sup>2</sup> The Taylor rule, used most often to explain the setting of the U.S. federal funds rate, is often described as a black box mechanism through which a change in the federal funds rate automatically changes all other market rates without requiring further action by the Fed. See also Woodford, 2003.

<sup>3</sup> For example, knowing how a crisis can affect the interest rate approach may provide a better basis for developing a meaningful stress test to assess the likely consequences of greater uncertainty in times of financial instability.

global financial crises. And even though the operation of the approach can be improved in times of crisis, the approach may still not be effective enough to allow the interest rate approach to achieve its desired inflation target.

## II. Policy Interest-rate Operations in Normal Times

An attribute of normal times is the existence of financial stability, times when bankruptcy risk omni-present in a financial system lies below a level where a significant financial failure would threaten the viability of the entire system. In such circumstances, the central bank need not explicitly counter systemic risk. Market interest rates serve to equate lending and borrowing behaviour and incorporate sufficient rewards for degrees of risk aversion and levels of risk tolerance that reflect regular trading conditions. Similarly, in effecting the intermediation of these activities financial institutions are adequately capitalized, with the level of risk in each transaction well understood and managed.

When such conditions prevail, the interest rate approach to monetary policy can concentrate on its primary objective of controlling inflation without having to compensate for the complications imposed by financial instability.<sup>4</sup> Hence in practice, a central bank will react to its inflation forecast--its forward-looking view of the current factors that are expected to drive inflation above or below the inflation target--by adjusting its preferred policy rate. That is when the central bank's forecast indicates that inflation will come in below its targeted level the bank will announce a new lower value for its policy rate.

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<sup>4</sup> This seems obvious enough following any severe shock to financial stability but appears to be too often over-looked in any pre-crisis description or understanding of the transmission process. However, pre-crisis awareness of the implicit role of financial stability in the effective functioning of the transition process would serve to greatly reduce the surprise that often comes with the impact of a financial crisis on the effective operation of the policy rate approach.

In most jurisdictions the instrument whose yield is chosen for the announcement is typically of short duration, running from an over-night funds rate (in Canada) to at most a one or two week borrowing/lending rate (in Europe). And while only a single new policy rate is announced, the announcement is intended to provide a new benchmark for market rates all across the entire liquidity spectrum – a term structure that includes not only the lending rates offered by financial institutions but also the borrowing rates paid for the funds raised by these intermediary institutions.

In many cases the central bank's announcement of a change in its key policy rate is in itself sufficient to lead both the market rate of its policy instrument and all other market interest rates up or down in unison – from the short through the long term, on both the borrowing and the lending sides of the market. Within the banking system itself, the policy rate announcement is intended to lead flexible lending and deposit rates to move in unison, with the spread between the two remaining constant. When this happens the policy rate change has served as a pure market signal; the market has accepted the central bank's view of where market yields are going, consistent with its unchanged macroeconomic objective.

It is part of the transmission process that when the policy rate signal does bring about a new lower level of interest rates that there is a concomitant loosening of financial conditions. That is, in the absence of the central bank's signaled decline in the policy rate, market interest rates would have remained too high to provide the required level of stimulus needed to produce the rise in investment and fall in savings needed to maintain the targeted rate of inflation. The description of how lowered interest rates work to affect the rest of the economy and so help achieve the Bank's macroeconomic policy objective

is well described in the literature and indeed constitutes the main part of standard descriptions of the transmission process.<sup>5</sup> What is less well described is why market interest rates should be affected in the first place, especially without any direct reliance on a change in base money (i.e., the consolidated balances of the banking system with the central bank).

If we stay with the specific case of an easing of the financial conditions needed to maintain the targeted inflation rate, effective monetary policy requires the policy rate announcement to translate first into a reduction of that particular market rate and then into a reduction in all other interest rates. However, what is not self-evident is why markets will respond to any central bank announcement that merely suggests that interest rates should be lower -- especially when the central bank does not undertake any supportive action to back up its announcement. Without coercion or any other central bank intervention, it is evident that financial markets would react favorably only if the indicated change in financial conditions seemed appropriate to market participants. Perhaps most obviously, following the central bank's lead would feel appropriate if it was widely recognized that a rise in the demand for financing relative to the supply was needed to eliminate the excess supply existing at current market levels.

However if market conditions were apparent, the market would simply adjust on its own without waiting for such a declaration from the central bank and the announced change by the central bank in the same direction as the market would then merely confirm that the central bank was staying in step with the market (or following it). This is not, of course, what we would want "leading the market" to mean. Hence the more

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<sup>5</sup> For example, the Monetary Policy Committee of the Bank of England's discussion of the transmission mechanism devotes over four fifths of its discussion space to what happens after key interest rates have been affected.

important case involves answering how a central bank can lead the market to lower interest rates and easier credit conditions when financial market participants are not inclined to bring about that adjustment themselves.

A central bank can effectively lead with an interest rate signal when market frictions delay the appropriate reaction of the financial system to the changing state of the economy. Frictions can arise when, for example, the move to a higher interest rate more appropriate to current market conditions is delayed out of concern that public reaction to higher borrowing rates will impact adversely the initiating bank. Here a signal from the central bank that higher rates are appropriate can deflect from the initiator any adverse public outcry. Similarly, frictions in moving to a lower interest rate can sometimes come from lenders' reluctance to accept individually lower returns, but can be overcome by the central bank's signal that lower borrowing rates will be forthcoming.

Somewhat more generally, uncertainty over the course of future interest rates provides an information role for the central bank. This is possible when a central bank has been able to establish a reputation for predicting more accurately the future course of interest rates and the economy than other market participants. Establishing a track record of appropriate policy rate changes ahead of the market can generate the credibility needed by a central bank to produce market followers to its policy rate announcements. In which case when market conditions weaken the willingness of market participants to hold the line at existing interest rate levels, a well-regarded, forward-looking central bank can initiate change simply by signaling that a change is now in order. Markets will respond to the policy signal without any need for the central bank to alter the amount of base money it supplies to the banking system. Should any base money change be called for,

that change should only be accommodative, passively supplying the higher demand for base money that will arise at lower interest rate levels.<sup>6</sup> Any active increase in base money to reinforce the interest rate signal would prompt only further systemic response that would exaggerate the desired movement in interest rates. By re-enforcing the downward interest rate movement with active base money intervention, the transmission process will overshoot its desired macroeconomic target.

Under the conditions specified, then, discretionary monetary policy can be carried out simply by announcing that a different interest rate is now in order. In Wicksellian terms, the market comes to accept that the central bank is better informed of the changes needed to preserve the current macro environment and thus accepts the bank's judgement of the appropriate level for the natural rate. Seeing a reliable signal of a new natural rate, market participants will adjust their own rates accordingly.

In circumstances where the central bank has less credibility, market participants may not acquiesce to the central bank's judgment and/or direction. Hence should it be necessary, central banks such as the Bank of Canada, the U.S. Fed, the Bank of England, and the European Central Bank, all have the ability to set the market rate of their policy variable. Specific details vary country by country, but all methods involve temporary market interventions to move the market rate to its desired policy level. Thus, when the central bank interprets current circumstances correctly, a change in the asset and/or liability composition of its holdings will allow the central bank to change the market rate of its policy variable and the intervention needed to produce that change can be reversed

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<sup>6</sup> This change is not ongoing but once-and-for-all in nature.

when the changed circumstances are recognized.<sup>7</sup> In this case the central bank imposes the appropriate rate ahead of the market and thus guides the market to the new equilibrium. Should direct sales or purchases by the bank be necessary (leading to changes in base money), these changes can (must) be withdrawn when further guidance is not needed. In normal circumstances sufficient credibility is present so that market participants themselves will usually move the market rate to the targeted policy rate on their own. Should more be necessary, central banks have sufficient market presence to ensure that at least one interest rate in the economy is fixed at a lower level.

When the expectations of financial market are not in line with the central bank, the central bank's ability to fix one interest rate will not ensure that all other rates will automatically follow the policy rate downwards. Hence to explain why a single market rate change can set off the required changes in all other rates another mechanism is required. Here two types of answers are often given. One answer relies on the central bank's position as the monopoly supplier of base money to impose its will on the markets. Thus in this approach if it is known that the central bank wants interest rates lowered (e.g., if moral suasion is applied), other institutions follow accordingly. Should this fail, the central bank can purchase or sell directly at any point of the term/liquidity spectrum.<sup>8</sup> Indeed, just knowing that a central bank can contest a financial market can be sufficient in itself to have market rates move to the desired levels.

In the absence of coercion and direct market participation, the existence of a stable yield curve across securities of higher risk and longer duration is needed. Here it is

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<sup>7</sup> Should the wrong rate be imposed on the economy, current market conditions and/or the steady state position of the economy will be altered--Wicksell's cumulative process will be initiated.

<sup>8</sup> The ability to deal at any point in the liquidity scale is sometimes constrained by operational and/or constitutional restrictions on the central bank.

arbitrage—the ability to profit by three way trading among different interest rate, risk and duration classes—that generates and preserves yield differentials across adjacent security types. Thus the ability of the central bank to change the yield at the short end of the liquidity spectrum generates no-risk profit opportunities across adjacent securities that provide the incentives that ultimately cause all other rates to fall into line. When this happens there is no need for any other change to set off the chain reaction alteration of financial conditions, no other central bank action needed to start the transmission process. If occasionally base money operations are needed to compensate for market misperception, their only purpose is to guide market participants to accept the desired policy rate value. A permanent change in base money is not a prerequisite for maintaining the desired change in monetary conditions.

The hallmark of the pure interest rate policy approach under normal conditions is then the purely secondary role assigned to base money. When the purpose of monetary policy is to maintain an existing macroeconomic target (such as an inflation rate) by adjusting to real changes in the macro environment, transitory/incidental changes in base money can be neutralized. Base money management plays only a passive role in ensuring that excess supplies and/or demands for base money are neutralized at the desired policy rate. Transactions in central bank currency or in foreign exchange which impact on base money need to be neutralized to prevent unwanted secondary effects on interest rates.

### III. Problems Caused by a Global Financial Crisis

This convenient arrangement comes to an end when severe financial upheaval leads to a period of financial instability. Starting with a key financial market freezing up or with the burst of a conspicuous financial bubble, system wide concerns now arise with

bankruptcies, both with respect to financial institutions deemed “too big to fail” and with small to medium sized firms susceptible to contagion. Fear of systemic failure introduces an additional unsettling prospect into otherwise secure investments, at the same time as it reduces the risk tolerance of market lenders. The combination puts restrictive pressure on monetary conditions that further depresses macroeconomic performance.

The natural reaction of a central bank operating under the interest-rate approach is to encourage lower interest rates by moving its policy rate setting downwards. However, lower interest rates have only a marginal effect on the likelihood of specific bankruptcies and/or new systemic risks when major financial firms are viewed as under-capitalized, holding financial assets that have now become illiquid and/or worthless. Thus reliance on interest rate policy alone to counter a severe liquidity crisis, as the recent 2007/08 crisis has demonstrated, may force a central bank to lower its policy rate virtually to zero to prevent the contraction of aggregate demand needed to maintain its inflation target. In persistent crises, multiplying liquidity concerns exacerbate the growing gap between notional and effective demand and require ever lower levels of the nominal rate to counter falling demand in increasingly myopic product and financial markets. The problem becomes particularly acute when expectations become so depressed that a policy rate below zero is needed to maintain macroeconomic stability. That is, the level of aggregate demand needed to maintain output and the inflation rate target can be produced only by generating a negative interest rate to tax savings and subsidize investment. However because a nominal return of zero can always be earned simply by holding currency, the technical inability to tax money holdings (in periods when deflation rather than inflation is the immediate concern) places a lower bound on nominal yields at zero.

Hence the impracticality of over-riding the zero interest rate bound places a restriction on an interest rate approach to monetary policy when liquidity/systemic issues become a severe enough. Interest rates can no longer be used to get as much financial easing as is called for to maintain aggregate demand.<sup>9</sup>

While the zero interest rate bound presents this problem in sharpest relief, the same problem--but to a lesser degree--arises whenever interest rates alone are relied upon in a financial crisis to achieve the market conditions appropriate to normal times. Here reaction to abnormal circumstances requires the central bank to lower the policy rate more than otherwise (where this requirement is signalled in the market by market rates not following the policy rate downwards). In such cases, the crisis itself creates a further set of perverse expectations that shift the supply and demand functions for lending and borrowing in ways that breaks the link between the policy rate and other lending and borrowing rates.<sup>10</sup> To give one example, the failure of the asset backed commercial paper market in Canada in August 2007 drove many non-bank lenders from securities markets and resulted in unfulfilled demands for loans shifting to Canadian banks. This lessened the incentive that banks had to lower their lending rates when the Central Bank's policy rate was lowered. At the same time, banks were faced with raising funds from risk-adverse depositors who focused increasingly on the growing possibility of borrower bankruptcy. The consequence was to buoy up deposit rates that would normally have been lowered in step with the falling policy rate. Reliance on interest rate policy to

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<sup>9</sup> According to one account, the U.S. federal funds rate implied by the Taylor rule needed to be set well below zero in the fall of 2009. Federal monetary policy was thus unable to be easy enough to reverse prevailing market conditions. See *RBC Dominion Securities Strategy Quarterly*, Fall 2009, p.6.

<sup>10</sup> This is analogous to the problem faced for money supply management when financial innovations changed the money multipliers, breaking the traditional links between base money and the broader definitions of money such as M1, M2, and M3.

overcome such obstacles then requires even more aggressive intervention by the central bank.<sup>11</sup>

To give up on the interest rate that is appropriate to maintain the longer term inflation target is not only to abandon the pure interest rate approach but also to risk destabilizing inflationary expectations. Hence, if inflation control is indeed the primary policy concern, the central bank may choose to stick with its normal policy rate setting and resort to a second strategy—use of its traditional lender of last resort facilities—to deal with the over-tight market conditions that result from financial disruption. Such a strategy unbundles two policy objectives that have become intertwined—inflation targeting and financial stability—by adopting two dedicated market instruments. With its lender of last resort function directed at countering financial market instability; interest rate policy can be reserved for inflation control and the adjustments required in the face of normal market disruption. Indeed, as the crisis of 2007/08 has revealed, success in pursuing an inflation target has not ensured that financial stability can be maintained when major financial shocks occur. This suggests that financial stability in its own right could be a separate objective for monetary policy, one requiring its own separate policy instrument.<sup>12</sup>

The recent experience of the 2007/8 liquidity crisis then reveals how complicated the interest rate approach to monetary policy must become when interest rates alone are required to deal with all of these complex issues simultaneously. For the pure signalling

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<sup>11</sup> The problem becomes even more acute if the market loses its faith in the reliability of central bank to foresee market developments and hence becomes less willing to follow the central bank's signal.

<sup>12</sup> The alternative of using monetary policy to lean against the wind to combat financial instability with a lower than normal market rate as is often advocated (see Carney 2009) uses an impersonal and general instrument against a problem that is both personal and specific. The use of the lender of last resort facilities to target specific financial bankruptcies and market failures seems more directed and hence appropriate.

role of the interest rate approach to work effectively, levels of risk aversion must remain constant; the compounding effects of illiquidity and/or perverse expectations induced shifts in the supply and demand for loanable funds must be avoided; and credibility in central bank direction must be maintained. Doing so allows a pure interest rate approach to achieve its macroeconomic objective(s) without having its required interest rate signal fall below zero. Maintaining these conditions generates a steady, predictable demand for base money and avoids the sudden changes in these holdings that prove so unsettling to markets and the achievement of macroeconomic objectives. The successful experience of Canada and many other countries in inflation targeting through interest-rate directed monetary policy in the period from the early 1990's through August 2007 suggests that such conditions are often present.

It is then during a severe financial crisis that the interest rate approach to monetary policy needs to be supplemented by lender of last resort facilities. Under its provisions lending can take a variety of specific forms – from taking over currently illiquid assets, granting loan guarantees, and providing capital injections -- and can be aimed at specific segments of the financial system to directly contain the threat of systemic risk and lower excessive risk aversion.<sup>13</sup> This amounts to directing its lender of last resort measures specifically at the objective of maintaining financial stability and leaving the use of the policy rate to pursue the separate objective of price stability. When lender of last resort measures are introduced early enough in a crisis, they can maintain financial stability overall and so preserve the effect of policy rate changes on interest rates in general. Knowing that a liquidity squeeze at an individual financial institution

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<sup>13</sup> The separation of lender of last resort activities from those designed to stabilize prices/output allows also for a more directed attack on the moral hazard issues raised by widespread generalized lending in times of crisis.

will be addressed by central bank liquidity measures can counter any reluctance that other financial institutions might have in lowering their deposit rates in the face of investor resistance, and qualified lenders will be more inclined to lower lending rates, in step with policy rate changes, with less concern for jeopardizing their ready access to last resort funding measures.

Throughout the role of the interest rate approach is to keep interest rates at the level dictated by the price or inflation target. Doing so assigns responsibility for the maintenance of financial stability to lender of last resort measures. If they succeed, the preservation of financial stability removes the additional downward pressure on monetary conditions arising from the crisis itself. This is then all that is needed to preserve the effectiveness of the interest rate approach. In such cases, the interest rate approach can remain effective during a major financial crisis.<sup>14</sup>

#### IV. Implications of a Persistent Financial Crisis for Monetary Policy

In the previous section, it was presumed that a financial crisis was either small or short enough that lender of last resort interventions could prevent the instability and contraction within the financial sector from spilling over into product markets (the so-called real economy). Should the later happen, there are more serious complications for the interest rate approach, even when lender of last resort measures can ultimately restore financial stability. In cases when financial contraction extends into product markets, the increasingly pessimistic expectations of unemployed workers for viable employment and of firms for realizable sales mean that the policy rate level appropriate for maintaining

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<sup>14</sup> Mishkin (2009) has argued that U.S. monetary policy did not lose its effectiveness during the 2007/8 crisis, although he also noted that interest rate manipulation alone could not offset financial disruptions and thus required the use of other (unspecified) monetary policy tools.

price stability (or full employment) under normal conditions will no longer suffice. The same policy rate level now implies monetary conditions that will be tighter than desired (given current expectations). Moreover the spill-over effect and the contraction multiplier activated no longer imply that the level of aggregate demand needed to produce the targeted inflation rate can be achieved even if the policy rate is lowered to its lower bound. In such circumstances there is nothing further that can be achieved by way of interest rate changes and this possibility presents monetary policy with its most serious challenge.

Off-hand the possibility that monetary policy can be completely ineffective seems unlikely because there seems to be no obstacle to a central bank making an injection of new base money into the financial system to achieve whatever monetary expansion is needed to ease “too tight” monetary conditions. Under normal conditions, this is the case – as illustrated in the familiar text book model of the banking multiplier process. But normal conditions allow interest rates to move downward. In these circumstances new base money in excess of current banking transaction needs will lead banks to lower lending rates and in this way generate the monetary expansion.

When interest rates are at their zero interest rate bound, however, there is no scope for banks to expand their balance sheets and thus trigger the money multiplier. There is now no mechanism for banks to induce the private sector to borrow more than it is already doing. In short, with interest rates at their lowest possible level, normal monetary policy operations to push more base money into the system are akin to “pushing on a string”.<sup>15</sup>

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<sup>15</sup> If money were freely provided by the central bank – in helicopter fashion – by simply crediting the accounts of all banks gratuitously with more base money, banks could afford to expand by lowering their

Because central banks can ignore profitability, new money can be injected into the system by buying existing securities at prices above current market values. However, such purchases are likely to have only a temporary distorting effect on selected segments of the financial market. Unless the strategy changes the incentive for individuals and/or firms to use the money created, the new base money generated by subsidized purchases will simply pool in the banking system.<sup>16</sup> Given that the demand for money is primarily to hold and not to spend, monetary policy is no nearer to achieving its macroeconomic objective.

Two more extreme possibilities remain. First a central bank could always flood a banking system with base money - the present-day version of running the money printing presses – by buying up outstanding government securities. If done on sufficient scale such purchases would ultimately create asset portfolios sufficiently lopsided and real balance wealth effects sufficiently large to produce the required expansionary reaction. Such a strategy, however, is well beyond what is considered normal monetary policy operations – indeed could be construed as an abdication of monetary policy as such.

Alternatively, market purchases of foreign exchange by the central bank are another avenue that a central bank might be tempted to explore. Here the aim would be to weaken a country's exchange rate for its short run stimulating macro effects and could be a tempting strategy when the exchange rate is strengthening contrary to the depressed state of the economy. Currency devaluations to stimulate foreign spending on domestic

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credit standards (rather than rates) and so acquire sub-standard securities or mortgages. Such a strategy would not maintain financial stability, however, since its incentives encourage riskier, inefficient lending.

<sup>16</sup> Regulatory bank capital ratios do restrict the amount of earning assets subject to default risk that banks can acquire even when they have excess base money to employ. This is a case of where a regulation for financial stability runs into conflict with monetary policy operations.

goods and discourage domestic spending on foreign goods is more a risky political strategy move than monetary policy in the sense the strategy is likely to invoke charges and consequences of the “beggar-thy-neighbour” policies adopted in the 1930’s.

Consequently ruling out such abnormal or distorting actions by the central bank means that monetary policy can do no more in a recession than stick with the interest rate approach, set its policy rate as low as it can go consistent with its primary target, and rely on its lender of last resort measures to restore and maintain financial stability. If all that fails to achieve its macroeconomic target within the usual time frame, the central bank should admit this limitation to managing the economy and encourage the government to pursue other non-central-banking stimulative measures. Refusing to recognize the limitations of interest rate policy leads to the temptation of lowering the macro objectives expected of central banking and/or to accept longer intervals for interest rate policy achieving its desired target. In neither case will this improve the management of the economy. The solution for better monetary policy is much easier—simply adopting the set of policies appropriate for the current state of the economy.

## V. Conclusions

Simply because a deep global financial crisis has posed difficulties for the interest rate approach to monetary policy is no reason to search for modifications to the basic approach. To make permanent changes in response to a transitory crisis would not be efficient. Post-crisis, the interest rate approach retains its validity for pursuing the goal of inflation control because the conditions needed for its effectiveness – namely financial stability coupled with normal levels of financial risks and degrees of risk tolerance – can reasonably be expected to be features of normal times.

In a financial crisis, however, the interest rate approach cannot in itself guarantee financial stability and that objective, we have argued, should be assigned to another long-standing instrument of central banking – namely that of lender of last resort. This is not a reflection of a flaw in the interest rate approach but of the realization that a second objective for monetary policy arises during a financial crisis. As an example of the well-known maxim that two objectives require two instruments, the policy rate becomes the instrument for achieving monetary goals and the lender of last resort measures becomes the instrument for achieving financial stability. Their ability to distinguish cures that require impersonal and general interventions versus those that are personal and specific reinforces the desirability of this separation.

Finally, the current crisis has brought the recognition that monetary policy can be ineffective if the lender of last resort function fails to restore financial stability or if financial market spill-overs into the rest of the economy mean that even a zero interest rate can not lead the economy to operate at its targeted level. Here normal injections of base money into the financial system cannot be counted on to revive flagging spending propensities. In such cases, we have argued, it is better to accept this limitation in monetary policy than alter the aim or instruments of monetary policy in order to conform to what policy can currently achieve. As long as the economy is to be managed, it is better to turn to non-monetary means than to disrupt the functioning of monetary policy and the performance that can be achieved by the interest rate approach in more normal times.

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